



CALL FOR ARTICLES

IEEE Vehicular Technology Magazine Special Issue on Communications Support for Unmanned Air Transportation

During the past few years, unmanned air transportation has come to the forefront of aviation research. Aviation authorities around the world have been making progress towards integrating drones or Unmanned Aerial Vehicles (UAVs) or Unmanned Aircraft Systems (UAS) into their national airspaces. In parallel, the private industry has been developing innovative applications, such as transportation of people and goods, medicine delivery, pipeline monitoring systems, and disaster-area aerial surveys. Projects such as the UAS Traffic Management (UTM) and Urban Air Mobility (UAM) demonstrate the high enthusiasm of the industry for unmanned air transportation. Before unmanned air transportation becomes a reality, there is a need to improve the reliability and security of UAV communications as they impact human safety.

Communication support for unmanned air transportation comes from three levels: satellites operating at the geostationary and low earth orbit levels, 4G/5G cellular networks operating on the ground, and ad hoc aerial networks operating in the mid-air. Today, with the support of a constellation of communication satellites, minute-by-minute global tracking of an aircraft is possible. In parallel, global standards for UAV communications and networks are also evolving. Global UTM association is leading the standardization efforts for UAS traffic management globally. IEEE recently initiated the P1920.1 and IEEE 1920.2 standards for aerial communications and networks and aerial vehicle to vehicle communications, respectively.

This special issue aims to share the progress and efforts being made by researchers, practitioners, and regulators towards the communication support for unmanned air transportation. This call solicits novel concepts that are currently being pursued or transformative ideas envisioned for the future of unmanned air transportation. Original submissions that discuss research, development, and evaluation strategies that support unmanned air transportation are encouraged within the following scope or related areas.

Autonomy and cooperation	Navigation in GPS-denied areas
Human-autonomy teaming	Drone-to-Drone and Drone-to-X communications
Cooperative strategies for critical tasks such as sense/detect and avoid	UHF band thru mm-wave bands and beyond communications
Geo-fencing, and trajectory design and optimization	Massive MIMO and beamforming
Ad hoc and mesh-networking of UAS	UAS integration in National Airspace
Traffic management	Onboard sensors and their integration
Command, control, and navigation	Flight-tests, test-beds, and simulations
Beyond radio line of sight communications	Safety, security and privacy
	Regulatory aspects

Manuscripts should follow the IEEE VTM guidelines at <http://www.ieeevtc.org/vtmagazine/submission.php>

Submit PDF version of complete manuscripts to <http://mc.manuscriptcentral.com/vtm-ieee>

Important Dates

Initial Submissions by: **1 September 2019**
First Round Reviews by: **2 December 2019**
Second Round Submissions by: **15 January 2020**
Second Round Reviews by: **28 February 2020**
Publication: **June 2020**

Guest Editors

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