Special Issue

Low-Latency Communication for Real-Time UAV Applications

Message from the Guest Editors

Drones are increasingly deployed in critical applications where real-time data and control are paramount (e.g., emergency response, industrial inspection, urban air mobility, autonomous delivery, aerial mapping for smart cities, and immersive XR streaming). These use cases demand communication networks with ultra-low latency and high reliability, as even minimal delays can impact performance or safety. Emerging wireless technologies (e.g., 5G, 6G, and beyond) offer ultra-reliable low-latency communication (URLLC) capabilities, making end-to-end latencies of only a few milliseconds possible. Ensuring near-instantaneous, robust links between unmanned aerial vehicles (UAVs), ground stations, and edge/cloud systems is crucial for unlocking autonomous drone operations, swarm coordination, and other time-sensitive UAV applications. This Special Issue aims to gather cutting-edge research on communication architectures, protocols, and technologies that enable low-latency, real-time UAV operations. We welcome contributions showing how novel wireless network designs, edge computing paradigms, or cross-layer optimizations can support latency-sensitive UAV use cases.

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About the Journal

Message from the Editor-in-Chief

Drones is the only international open-access journal about the science, policy and technology of drones and its applications. Nowadays, the proliferation of drones is a reality for local policy makers, regulatory bodies, mapping authorities, startups and consolidated companies. There are many uses and benefits of drones: from the emergence of new sensors and the evolution of new platforms; to the development of specific software and the emergence of new applications. *Drones* publishes reviews, regular research papers, communications and short notes, without restriction on the length of papers. *Drones* seeks to provide a central forum for scholars engaged in drones' research and applications.
There is a need for high quality papers in this area and the *Drones* Editorial Board are widely recognized international leaders. *Drones* journal guarantees a serious peer review and a rapid publication across the whole discipline of drones.

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