

Special Issue

Future 4D Mobility Networks: Testbed-Driven Communications, Sensing and Molding with the SWaP- Constrained Platforms

Message from the Guest Editors

“4D wireless transportation networks” denotes integrated three-dimensional mobility—ground, low-altitude unmanned aerial vehicles (UAVs), stratospheric platforms, and LEO satellite overlays—combined with explicit time variability due to motion, blockage, and rapidly changing topologies. The convergence of space, air, and ground transportation systems is transforming global connectivity. Emerging platforms such as satellite constellations, UAVs, high-speed rail, and autonomous vehicles demand advanced electromagnetic technologies to enable seamless sensing, communication, and computation across heterogeneous networks. Future space–air–ground integrated networks must support fast-moving, SWaP-constrained platforms (size, weight, and power limitations), creating urgent needs for innovations in transceivers, communication protocols, network convergence, and propagation modeling. This Special Issue will provide a timely platform for researchers and practitioners to present innovative, validated, and deployable technological solutions that drive the next generation of intelligent transportation and integrated mobility networks.

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