

Call for Papers for the IEEE IoT Journal Special Issue on “M2M/IoT Services over Satellite Networks”

The specific satellite sector specialized in enabling IoT/M2M services such as maritime, aeronautical, oil and gas, general telemetry, asset tracking, etc, is experiencing important market hype. This trend is mostly determined at least by two main factors. On the one hand, the rapid increase of regional M2M services that can be enabled only by non-terrestrial technologies (e.g., maritime and aeronautical) has recorded a boost in the satellite market. On the other hand, the recent advances in satellite communications for what regards the space and the ground segment have contributed to considering SatCom as a viable solution to enrich the portfolio of the currently available M2M/IoT services as well as enable new ones. In this perspective, it is worth recalling the important technology advances made in the area of random access for satellite communications and in parallel a more efficient design of antenna and dedicated IoT miniaturized devices. Further to this, the increased capacity of satellite can provide the necessary connectivity to massive IoT/M2M deployments, hence making satellite constellations, small/nano satellites (e.g., cubesats) as well as HAPs particularly attractive.

As such, the objective of this special issue is to collect the main findings and results carried out by industry and academia in the context of IoT/M2M over satellite, in terms of real system development and validation as well as new theoretic insights into key problems. In particular, we solicit high-quality original research papers on aspects of IoT/M2M applications over satellite networks, including, but not limited to the following topics:

- Role of satellites in IoT-based scenarios
- Satellite air interface for IoT/M2M services
- Non-terrestrial network space segment architectures (GSO, NGSO, HAPs, UAS)
- Integration of IoT systems with unmanned aerial systems (UAS) and high altitude platforms (HAPs)
- Information Centric Networking (ICN) architectures to enable IoT over satellite
- Network slicing tailored to IoT/M2M services
- Advanced random access schemes for IoT/M2M services over satellite
- MQTT/CoAP-based protocols over satellite networks
- Cloud/Fog computing concepts for IoT support in satellite systems
- Energy efficient cross-layer MAC-PHY design
- Network function Virtualization (NFV) and Software Defined Networking (SDN) applied in Integrated IoT-Satellite systems
- User terminal tracking antennas and integration with terrestrial wireless networks
- Channel estimation and user detection in massive access protocols
- Robust and flexible interference management techniques between terrestrial and non-terrestrial systems
- Over-the-air and in-lab validation activities and test results on satellite integration into 5G

Authors must follow the IEEE IoT Journal Journal guidelines regarding the manuscript and its format. For details, please refer to the author guide at the IEEE IoT Journal Web site at <https://ieee-iotj.org/guidelines-for-authors/>.

All papers shall be submitted through IEEE Manuscript Central, (<http://mc.manuscriptcentral.com/iot>) according to the following schedule:

Paper submission schedule	Guest Editors
Submission Deadline: December 15, 2020	Tomaso de Cola, German Aerospace Center, Germany (GE Leader)
First Review Due: February 28, 2021	Prof. Igor Bisio, University of Genoa, Italy
Revision Due: April 15, 2021	Prof. Song Guo, Hong Kong Polytechnic University
Sec. Reviews Due/Notification: May 15, 2021	Mr. Frank Zimmer, SES S.A., Luxembourg
Final Manuscript Due: May 30, 2021	Mr. Wen Cheng Chong, Kepler Communications, Canada
Publication Date: 2021	Prof. Mianxiong Dong, Muroran Institute of Technology, Japan