

IEEE International Workshop – 6GSatComNet

Satellite Mega-Constellations in the 6G Era Unprecedented Opportunities and Unprecedented Challenges

June 14–18, 2021
Montreal, Canada



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Important Dates

- ❖ Submission: **19 Feb 2021** (firm)
- ❖ Notification: 22 Mar 2021
- ❖ Cam-ready: 31 Mar 2021

Submission Link

[https://edas.info/newPaper.php?
c=27870&track=104135](https://edas.info/newPaper.php?c=27870&track=104135)

Webpage Link

<https://icc2021.ieee-icc.org/workshop/ws-26-workshop-satellite-mega-constellations-6g-era-unprecedented-opportunities-and>

Scope: There is rejuvenated interest in satellite communications & networking. Both the satellite and 3GPP industries aim at developing a seamlessly integrated one network. One main difference between the legacy satellite systems and the mega-constellations of the 6G era satellite system is the networking aspect with very high-speed inter-satellite links. For efficient operation, the network will have to be autonomous, intelligent, resilient, self-organizing & self-controlling to reduce the cost and risk of human intervention. Distributed decision making, fault recovery, resilience, and scalability are among the important features. These networks will rely on AI techniques at all levels: Ground operations, on-board operations, inter-satellite and satellite-to-ground links. The satellite mega-constellations in the 6G era will create unprecedented opportunities once the unprecedented challenges are addressed by the research community.

Topics: We seek original completed and unpublished work not currently under review by any other journal/magazine/conference. Topics of interest include, but are not limited to:

- Design and analysis of satellite mega-constellations
- Novel use cases (IoT, V2X, precision agriculture, smart cities, ...)
- HAPS (high altitude platform station) systems
- Integrated terrestrial-satellite networks, satellite – 5G/6G coexistence
- 3GPP 6G standardization with satellite communications as a native technology
- FSO (free space optical) communications for satellite networks; laser comm, laser links
- Inter-satellite links (ISLs)
- Enhanced localization, navigation and precision positioning
- Quantum key distribution (QKD) in satellite networks
- Computation offloading, caching, and edge computing through/from satellite networks
- Topology management, routing, mobility/handover management, addressing
- Random access techniques, dynamic spectrum sharing, multicasting
- Massive MIMO, advanced antenna architectures, dynamic beamforming
- Interference avoidance and mitigation in satellite networks
- Physical layer security in satellite communications
- Simulation platforms and testbeds for satellite networks
- Cooperative communications and computing in satellite networks
- AI/ML for satellite networks
- Satellite network architecture and resources allocation for revenue maximization
- OAM (operations, administration, maintenance) aspects in satellite networks
- Ownership models and their impact on requirements and architecture
- Advanced physical layer technologies for satellite communications

Paper Submission: The workshop accepts only novel, previously unpublished papers. The page length limit for all initial submissions for review is SIX (6) printed pages (10-point font) and must be written in English. All final submissions of accepted papers must be written in English with a maximum paper length of six (6) printed pages (10-point font) including figures. No more than one (1) additional printed page (10-point font) may be included in final submissions and the extra page (the 7th page) will incur an over length page charge of USD100. For more information, please see IEEE ICC 2021 official website: <https://icc2021.ieee-icc.org/authors>.