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Space and Terrestrial Integrated Network: Emerging Research Advances, Prospects, and Challenges

Currently, many aerial platforms, satellite systems, space and terrestrial integrated networks (STINs) have been developed while some of them are still under construction. The basic idea of STIN is to simply connect heterogeneous devices, systems and networks together via Internet, thus providing much more effective services than traditional infrastructures. Through effective acquisition, coordination, transmission and aggregation of multi-dimensional information, the resource planning, task distribution and action management of STIN can be realized. The goal is to provide all kinds of users a real-time and reliable communication infrastructure by conducting efficient collaboration. However, there are still many open issues need to be solved. For example, signal distortion and fading to the network connections in the atmosphere often occur. Therefore, the design of STIN typically needs to take into account signal distortion and fading, multiple-access interference and large latency, etc.

By now, the development of STIN has reached a crossroad. Radio resource management, transparent handover, network management, wireless communication and other promising technologies (e.g., long-term evolution, software-defined networks, or device to device communication) are the critical research trends for such hybrid satellite-aerial-terrestrial networks. This featured topic is soliciting scientific research papers that address important research problems towards the realization of STIN. Research papers that describe seamless migration from the current wireless networks to the STIN and introduce the brand-new networking system for the STIN are of high interest. In general, topics of interest include, but are not limited to:

- Heterogeneous wireless network architectures and infrastructure for supporting STIN
- QoS and QoE improvement in STIN
- Wireless communication and networking in STIN
- Resource allocation and energy efficiency for STIN
- STIN-relevant network test-beds, simulators, open-source codes, and tools

- Network performance analysis and modeling optimization on STIN
- Security, privacy and trust issues for in STIN

SUBMISSION GUIDELINES

With regards to both the content and formatting style of submissions, prospective authors should follow the IEEE Network submission guidelines available at http://www.comsoc.org/netmag/paper-submission-guidelines. Authors should submit their manuscripts via the IEEE Network magazine's manuscript central, choosing " Space and Terrestrial Integrated Network: Emerging Research Advances, Prospects, and Challenges" from the drop-down menu on the submission page.

IMPORTANT DATES

- **Manuscript submission:** June 1, 2018
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- **Acceptance notification:** October 15, 2018
- **Final manuscript due:** November 15, 2018
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