

*IEEE Internet of Things Journal Special Issue on  
Integrated Transmissions and Computations for Non-Terrestrial  
Network-assisted Internet of Things*

Non-Terrestrial Networks (NTNs) have advantages to complement the terrestrial networks in coverage and flexibility, especially for Internet of Things (IoT) in harsh environments including desert, marine, and mountainous regions. Future NTNs can support not only the information transmissions but also real-time data processing with the improved computation capacity of state-of-the-art satellites and Unmanned Aerial Vehicles (UAVs). Moreover, future intelligent and diversified IoT applications demand the optimization of both transmissions and computations. However, the high dynamics, differentiated communication conditions, and heterogeneous hardware platforms of NTNs, as well as the diversified service requirements, uneven distributions, and the limited IoT device batteries, pose significant challenges for network and performance optimization.

To optimize the provided Integrated Transmissions And Computations (ITAC) services, extensive research can be conducted from the topics including network architecture design, protocol design, resource allocation, task offloading, hardware design, etc. Thus, topics include, but are not limited to, the following:

- Network architecture design for NTNs and IoT integration
- Scalable and adaptive NTN architectures design for harsh environments
- Deployment of satellites and UAVs for seamless ITAC service provision
- Terahertz and FSO communications in NTNs for ITAC services
- Access, handover, routing, and switching protocols for NTN-assisted IoTs
- Hierarchical computing and caching techniques
- Energy issues in NTN-assisted IoTs for ITAC services
- Privacy-preserving techniques for computation and transmission in NTNs
- AI, Generative AI, and Large Language Models (LLMs) for NTN-assisted IoT
- Digital twin/metaverse-based simulation platforms in NTN-assisted IoTs

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**Submission Guidelines:**

The submission information is available at <http://ieeetj.org/guidelines-for-authors/>.

All original manuscripts and revisions must be submitted electronically through IEEE Manuscript Central, <http://mc.manuscriptcentral.com/iot>, with the selection “Special Issue on Integrated Transmissions and Computations for Non-Terrestrial Network-assisted Internet of Things” for the type.