VTC2026-Spring NICE

Towards the Vehicular Metaverse

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Call for Workshop Paper

Intelligent Synergy of Sensing and Communications for Green IoT

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In the era of large-scale IoT deployment and growing environmental awareness, Green IoT has become a cornerstone for sustainable digital transformation. Intelligent synergy between sensing and communications is essential to achieving low-carbon, energy-efficient, and adaptive IoT systems. As IoT expands into smart cities, precision agriculture, and industrial automation, harmonizing data perception (sensing) and transmission (communications) is increasingly critical. Key challenges include balancing sensing accuracy with ultra-low-power connectivity (e.g., Wi-Fi HaLow, NB-IoT, 6G NTN), ensuring interoperability across heterogeneous devices, optimizing data–energy trade-offs, and reducing lifecycle waste through modular and reconfigurable designs. Advances in semantic communications, edge intelligence, and AI-native integrated sensing and communication (ISAC) architectures are reshaping the landscape of sustainable IoT.

This workshop aims to explore next-generation frameworks that integrate sensing and communications for Green IoT. It emphasizes emerging technologies such as federated learning, reconfigurable intelligent surfaces (RIS), and energy-harvesting-enabled zero-energy IoT devices to enhance efficiency and sustainability.

Topics of interest for this workshop, include, but are not limited to:

- Machine learning-driven intelligent synergy of sensing and communication in green IoT
- Energy-harvesting and backscatter-enabled integration of sensing and communications for green IoT
- Federated and distributed learning for intelligent ISAC-based IoT networks
- Reconfigurable Intelligent Surface-assisted energy-efficient sensing and communication
- Lightweight and edge-intelligent frameworks for Green IoT applications
- Joint optimization of sensing accuracy and communication reliability in Green IoT
- Blockchain-based secure sensing and communication for green IoT
- 5G/6G-enabled integrated sensing and communication for next-generation Green IoT
- Multi-modal sensing and communication integration for green IoT environmental monitoring.
- Energy-aware routing in sensing-communication networks for green IoT
- Digital twin-driven predictive control and maintenance for sustainable industrial IoT
- Multi-modal sensing and communication fusion for environmental monitoring and disaster response
- Cloud-edge sensor collaborative sensing and communication in green IoT
- Security, privacy, and trust management in energy-constrained sensing-communication systems
- Interoperability and standardization across heterogeneous Green IoT ecosystems

IMPORTANT DATES

Paper Submission Deadline:
25 January 2026
Acceptance Notification:
18 March 2026
Final Paper Submission:
1 April 2026

https://events.vtsociety.org/vtc2026-spring/

Paper submission is open:
https://vtc2026s-rr-wks.trackchair.com/track/2510