# 28th IEEE International Conference on Industrial Technology (ICIT 2027)

## Special Session on

# Collaborative and Distributed Sensing for Cyber-Physical Systems

## Organized by

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## Call for Papers

This Special Session explores advanced collaborative and distributed sensing technologies for intelligent Cyber-Physical Systems (CPS), emphasizing cooperation among heterogeneous sensors, embedded devices, autonomous platforms, and intelligent agents. It welcomes innovative theoretical, methodological, and experimental contributions addressing multimodal sensor fusion, distributed estimation, cooperative information processing, edge intelligence, and communication-aware sensing. Particular attention is given to approaches that enhance sensing coverage, accuracy, reliability, resilience, interoperability, and real-time situational awareness in complex, interconnected environments. The session aims to foster scientific advances and practical applications in robotics, autonomous vehicles, smart manufacturing, intelligent infrastructure, and precision agriculture.

Topics of interest include, but are not limited to:

- Collaborative and Distributed Sensing: Cooperative architectures and distributed perception.
- Multisensor and Multimodal Fusion: Data fusion and uncertainty management.
- Distributed Estimation and Monitoring: State estimation and real-time monitoring.
- Cooperative Information Processing: Decentralized algorithms and information sharing.
- Virtual and Soft Sensors: Data-driven sensing and virtual measurements.
- Edge AI and Distributed Intelligence: Embedded AI, federated learning, and edge computing.
- Sensor Reliability and Resilience: Fault detection, diagnosis, and fault tolerance.
- Interoperability and Communication-Aware Sensing: Heterogeneous integration and network optimization.
- Multi-Agent and Multi-Robot Systems: Cooperative perception, localization, and autonomy.
- Context-Aware and Semantic Sensing: Semantic perception and situational awareness.
- Distributed Localization and Monitoring: Cooperative positioning, mapping, and tracking.

- Industrial and Emerging Applications: Robotics, autonomous vehicles, smart manufacturing, transportation, and precision agriculture.

## Submission Procedure:

All the instructions for paper submission are included in the conference website:
**https://icit2027.ieee-ies.org/**

## Deadlines:

- **Special Session Paper Submission Deadline:** November 16, 2026
- **Special Session Acceptance Notification:** December 11, 2026
- **Conference Dates:** March 17–19, 2027