



IEEE Conference on Industrial Cyber-Physical Systems (ICPS)

Perth, Australia, 11-14 May 2026

<https://icps2026.ieee-ies.org/>

Proposal for an ICPS 2026 Special Session

- **Title of the proposed Special Session:**
Resilient Monitoring and Control of Networked Cyber-Physical Systems
- **Names, photos, very short bios, and emails of the organizers:**



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- **Technical outline and topics of the special session:**

This special session focuses on resilient monitoring and control methodologies for networked cyber-physical systems operating under uncertainty, disturbances, and cyber-physical threats. The session aims to address challenges arising from system interconnectivity, limited communication, faults, and malicious attacks by integrating advanced control theory, distributed intelligence, and real-time monitoring. Contributions covering theoretical developments, algorithmic innovations, and practical applications are encouraged. The session provides a platform for researchers and practitioners to exchange ideas on improving reliability, robustness, and operational resilience of large-scale cyber-physical systems.

Topics:

- Resilient and fault-tolerant control of networked systems
- Distributed monitoring and diagnosis in cyber-physical systems
- Secure control and attack-resilient system design

- Multi-agent coordination and consensus under communication constraints
 - Data-driven and learning-based approaches for system resilience
 - Distributed estimation and sensor fusion
 - Event-triggered and communication-aware control
 - Monitoring and control of smart grids and energy systems
 - Applications in autonomous vehicles, robotics, and industrial CPS
 - Resilient monitoring and control of smart grids and cyber-physical energy systems
 - Fault-tolerant and secure control of renewable energy and microgrid systems
 - Distributed energy management and control under communication and cyber constraints
- **Technical track(s) with similar topics (clearly point out difference to the Track scope)**
While T06 broadly addresses ICPS modeling and control, this Special Session focuses specifically on **resilient monitoring and control of networked CPS**, emphasizing fault tolerance, security-aware control, communication constraints, and attack-resilient operation, which are not explicitly targeted in the general track scope.
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 - The proposers have read and adhere to the overall IEEE IES Special session conditions as shown on the website https://icps2026.ieee-ies.org/for_authors/index.html#call-for-special-sessions: YES