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

Special Session on

Human-Centric Intelligent Operations for Industry 5.0 and Industry 6.0: Integrating AI, Digital Technologies and Operational Excellence

Organized by

Prof. Andrei Bonamigo, PhD (andrei.bonamigo@ufsc.br)
Federal University of Santa Catarina, Brazil

Prof. Antonio Padovano, PhD (antonio.padovano@unical.it)
University of Calabria, Italy

Prof. Vikas Kumar, PhD. (vikas.kumar@port.ac.uk)
University of Portsmouth, England

Call for Papers

This Special Session explores human-centric intelligent operations and operational excellence as fundamental drivers of Industry 5.0 and the emerging Industry 6.0 paradigm. It emphasizes the convergence of Artificial Intelligence (AI), Machine Learning (ML), Cyber-Physical Systems (CPS), Digital Twins, Industrial Internet of Things (IIoT), and intelligent automation with advanced operational management strategies. The session aims to advance innovative methodologies, technologies, and industrial applications that enhance productivity, resilience, sustainability, circularity, and human well-being. Particular attention is given to human–AI collaboration, intelligent decision-making, adaptive manufacturing, and the integration of digital intelligence with Lean principles and Operational Excellence. We invite high-quality theoretical, methodological, experimental, and application-oriented contributions addressing the design, optimization, and transformation of intelligent manufacturing and service systems..

Topics of interest include, but are not limited to:

- Industry 5.0 and 6.0: Human-centric, resilient, sustainable, and intelligent operations.
- Industrial AI and Machine Learning: Predictive analytics, optimization, autonomous decisions, and explainable AI.
- Cyber-Physical Systems and Digital Twins: Real-time monitoring, simulation, and adaptive operations.
- Industrial IoT and Intelligent Sensing: Connected systems, machine vision, sensor fusion, and analytics.
- Human–AI Collaboration: Human-in-the-loop systems, collaborative intelligence, and ergonomics.

- Operational Excellence and Lean Systems: AI-driven Lean, quality engineering, and process optimization.
- Smart and Sustainable Manufacturing: Flexible production, resource efficiency, circularity, and resilience.
- Intelligent Operations Management: Decision support, predictive maintenance, and digital transformation.
- Industrial Applications and Methodologies: Novel architectures, experimental validation, and industrial case studies.

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