



11th IFAC Conference on
Manufacturing Modelling, Management and Control
Trondheim, Norway, 30 June - 3 July 2025

Trondheim, Norway, June 30 – July 03, 2025

Capturing, Characterizing, and Anticipating Human Behaviour in Industry 5.0 Manufacturing Systems to Optimize Production Efficiency, Human Well-being, and Inclusion

INVITED SESSION CODE: asr2d

Organized by:

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Aim & scope: This invited session addresses the challenge of effectively integrating and leveraging emerging technologies to capture, analyse, understand, and predict human actions within advanced intelligent manufacturing systems. The goal is to bring together experts from various fields—such as operations management, robotics, AI, ergonomics, and human-centric manufacturing—to explore the latest advances, challenges, and implications of human behaviour analysis for optimizing production planning and control.

Through innovative methods and tools, the session seeks to bridge the gap between cutting-edge technology and human-centred intelligent manufacturing systems, focusing on how human actions and movements can be effectively modelled and predicted to enhance production efficiency, worker well-being, and inclusion. It also aims to identify, understand, and address the legal and ethical limitations that affect the integration of human-centred technologies into smart factories.

By investigating methods for capturing and anticipating human behaviour, the session will explore how AI, robotics, machine learning, and cognitive modelling can be employed to make production processes more flexible, adaptive, and resilient, while maintaining a focus on human factors. Ultimately, this session will foster discussions on both the technological and human elements critical to the future of intelligent manufacturing.

Topics of Interest include, but are not limited to:

- Analysis of human movement to ensure ergonomic production environments
- Integration of human behaviour models into operations management in intelligent manufacturing systems
- Machine learning and computer vision techniques for human activity recognition
- Intelligent wearable technologies for performance monitoring and real-time decision support
- Cognitive modelling to anticipate human decision-making in production planning and control
- Human-centred approaches for flexible, adaptive, and resilient production planning
- Human factors in the design of human-machine interfaces for intelligent manufacturing systems
- Legal and ethical considerations in integrating human-centred technologies in smart factories

Submission: The submission process and the guidelines of paper preparation can be found on the web page of the conference at: <http://conferences.ifac-control.org/mim2025/>

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Important dates:

November 30, 2025 Deadline for the submission
January 30, 2025 Notification of acceptance/rejection
February 28, 2025 Deadline for the final submission

- Draft papers reporting original research (limited to 6 pages in IFAC format) are welcome.
- Accepted papers will be published open access in [Elsevier's IFAC-PapersOnLine](#).
- Post-conference special issues for extended versions of accepted papers are planned in IFAC and other high-ranked journals.

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