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11th IFAC Conference on Manufacturing Modelling, Management and Control



• Trondheim, Norway, 30 June - 3 July 2025 •

Invited session

Smart intralogistics for warehousing and material handling in manufacturing and distribution systems

Organized by IFAC TC 5.2 Working group 10:

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Recent market trends demand an increasing variety of goods that must be produced and delivered in ever shorter times. Since global markets continuously change, especially regarding the emerging e-commerce channel, industries need to be able to respond quickly and appropriately to these requirements, working with constant uncertainties and aiming to be flexible and resilient simultaneously. These aspects, associated with new material handling technologies, digital technologies that allow the introduction of new data-driven approaches for decision-making, and the importance of a human-centric perspective, lead to challenges and trade-offs that have an essential impact on the management and control of intralogistics activities, including material handling, warehousing, parts feeding, and products distribution. Therefore, the need to design intralogistics systems that are flexible, synchronized, effective, and resilient emerges.

A rigorous design of intralogistics systems includes, for example, the feeding of the items to the assembly area, the correct setting of the material handling system, the level of automation, and the location of the storage areas and the warehouse zones, including the appropriate transportation and product distribution. Moreover, adopting new technologies and assistive devices can relieve workers from high workloads, reduce injury risks, speed up manual activities, and warrant higher quality, reliability, traceability, and sustainability of the intralogistics processes.

This invited session aims to share new ideas, methods, and technologies to develop and improve smart intralogistics for warehousing, material handling, and distribution systems.

- Topics may include (but are not limited to) the proposal of **solutions** and **technologies** as well as design, analysis, and evaluation **methodologies** for:
- Storing, warehousing and order picking
 - Material handling systems
 - Part feeding for manufacturing and assembly systems
 - Materials distribution strategies and warehouse locations
 - Delivery and transportation policies
 - Intralogistics systems and strategies
 - Forward-reverse logistics management
 - Sustainable operations
 - Smart, automated, robotized warehousing
 - Logistics 4.0
 - Human-technology interaction in intralogistics
 - Individual and group behavior in intralogistics and transport
 - Digital twins of intralogistics systems
 - Data-driven evaluation of new technologies in intralogistics
 - Digital nudges and human behavior in intralogistics and transport
 - Intersections of warehousing and transportation

INVITATION CODE: 9q7ya

Draft papers reporting original research (limited to 6 pages in IFAC format) are welcome.

When you submit your paper to the IFAC system, you will be required the **invitation code** in order to associate your paper to the invited track:
<https://ifac.papercept.net>

IMPORTANT DATES:
Draft papers submission deadline: **30.11.2024**
Final papers submission deadline: **28.02.2025**
Early registration opens: **28.02.2025**

Conference website: <https://conferences.ifac-control.org/mim2025/>

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