



Invited Session:

Optimization and Decision-Making Models and Methods in New Logistics System

Organizers:

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Session Objectives and Scope:

Today's logistics systems face unprecedented challenges due to rapid urbanization, environmental concerns, and increasingly complex supply chains. Addressing these issues requires innovative and adaptable solutions to enhance flexibility, efficiency, and sustainability in logistics operations. Our session will cover the latest advancements in decision-making and optimization techniques within emerging logistics systems. Key topics include as follows:

- **Robotization of Logistics Warehouses:** The use of reconfigurable poly-robots to optimize transport capacity and reduce the need for extensive robotic fleets.
- **Autonomous Delivery Solutions:** The impact of self-driving vehicles and drones on improving delivery speed, reducing congestion, and enhancing reliability in last-mile logistics.
- **Reconfigurable Logistics Systems:** Systems that can adjust to market changes, providing the flexibility needed to respond to varying demands.
- **Moveable Factories:** Factories designed to be relocated or reconfigured easily, allowing for greater operational flexibility and responsiveness to changing production needs.
- **Moveable Cross-Docking:** A logistics approach where cross-docking operations are conducted in portable or temporary facilities, allowing for flexible and efficient handling of goods without the need for permanent infrastructure.
- **Digital Twin Technologies:** Tools that enable real-time, predictive decision-making to refine logistics operations through virtual models of physical assets.
- **Integration of People-and-Goods Transportation Systems:** Strategies to maximize shared infrastructure, improving overall urban mobility.
- **Sustainable Logistics 5.0:** Leveraging IoT/IIoE and automation to ensure logistics operations are both efficient and environmentally responsible.
- **Human-Centric Industry 5.0:** Combining advanced technology with human expertise to address social and environmental challenges.
- **Viable Logistic Models:** Understanding frameworks that enhance logistics resilience, adaptability, and long-term survival under unpredictable conditions.

We invite theoretical and practical contributions to decision-making and optimization in novel logistics systems. Relevant topics include mathematical modeling, exact, hybrid, heuristic/meta-heuristic, and machine learning methods. We encourage submissions that explore these areas or related themes.



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Submission:

Papers must be prepared according to IFAC format and submitted using the IFAC PaperPlaza conference manuscript management system: www.ifac.papercept.net. The corresponding author submits the paper online as an invited session paper using the **invited session code b7seb**.

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.

Important Dates:

Full paper submission: 30.11.2024

Notification to authors: 30.01.2025

Final paper submission: 28.02.2025