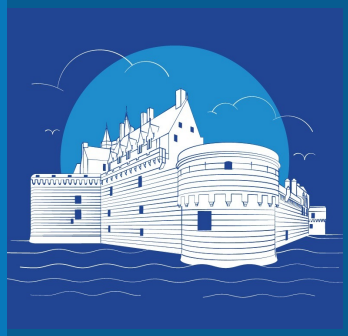
IFAC
INTERNATIONAL FEDERATION OF AUTOMATIC CONTROL

28–30 JUNE 2027

INCOM 2027 • NANTES
Information, Control and Optimization in Manufacturing
AI and digital technologies for resilient and sustainable production and logistics



INVITED SESSION

PAPERCEPT • 68bnw

Intelligent Transportation Systems for Sustainability: Modelling, Optimizing and Learning

Official Invited Session Proposal - Validated content

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SESSION SUMMARY

Transportation and mobility systems are undergoing a major paradigm shift, driven by the exponential growth in passenger and freight demand, stringent decarbonization targets, and the rapid deployment of Intelligent Transportation Systems (ITS). Real-time data captured from connected infrastructure and transportation modes offers unprecedented opportunities to improve decision-making processes and address environmental challenges while advancing sustainability goals, including fairness, equity, and resilience.

This special session focuses on the design, planning, scheduling, and routing problems of intelligent transportation systems in pursuit of sustainable objectives. It covers a wide range of mobility paradigms, including connected and electrified transit, freight transport, railway systems, drone logistics, shared mobility, and collaborative multimodal transport.

The core objective is to showcase state-of-the-art advances in Data Analytics, Mathematical Optimization, and Stochastic Modeling. Particular emphasis is placed on hybrid frameworks that combine different approaches to address complex real-world decision-making problems. Key topics include dynamic traffic management, fleet and network design, facility location, routing, dispatching, EV charging planning, capacity sizing, and scheduling.

KEYWORDS

Intelligent Transport | sustainability | logistics | freight transport | mobility | routing | collaborative transport | railways

TOPICS OF INTEREST

include but are not limited to:

- Data Analytics and Machine Learning: Predictive traffic modeling, spatiotemporal data analytics, demand forecasting, and data-driven modeling.
- Mathematical Modeling and Optimization: Exact algorithms, matheuristics, metaheuristics, stochastic programming, decomposition approaches.
- Simulation and Stochastic Frameworks: Agent-based simulation, digital twins, discrete-event simulation, and scenario-based stochastic modeling.
- Reinforcement Learning (RL) and Learning-Based Optimization: Enhancing optimization methods with learning, re-optimizing by learning.
- Integrated and Hybrid Methodologies: Data-driven modeling and optimization or simulation, integrated problems at different planning levels.

IMPORTANT DATES

14 DEC 2026

Invited session / track paper submission deadline

31 JAN 2027

Notification to authors

01 APR 2027

Final paper submission deadline

28-30 JUN 2027

INCOM 2027 - Nantes, France

SUBMISSION IN PAPERCEPT

Papers intended for this invited session must be submitted in PaperCept as an Invited Session Paper and must use the PaperCept code assigned to this invited session.

CODE 68bnw

Do not submit it as a Regular Paper if it belongs to this invited session.