

Special session proposal for IJCIEOM 2025 conference SPS13

1. Session title:

Integrating Passenger and Freight Transport for Sustainable Last-Mile Deliveries

2. Session objectives:

This session invites contributions focused on innovative solutions for last-mile deliveries, with particular emphasis on integrating passenger and freight transport. This area of research is addressed by the ongoing research project “SMART3R-FLITS” (SMART Transport for TRavellers and Freight Logistics Integration Towards Sustainability), which introduces the concept of “Demand Responsive Transport and Logistics” (DRTL), i.e., a shared system in which passenger and freight transport can use the same vehicles and flexible, dynamic routes within a data-driven framework. Such integration may be achieved by involving users directly in the delivery operations (e.g., through crowdshipping) or by enabling the shared use of transport services and facilities, such as multimodal hubs and parcel lockers.

Integrated passenger-freight transport models offer the potential to significantly enhance the efficiency and sustainability vehicle capacity sharing. By processing real-time, geo-localized data from multiple sources, these systems can optimize vehicle routing, enable real-time bookings, and dynamically adapt to fluctuating demand for both people and goods. The primary goals are to improve the economic and operational efficiency of last-mile deliveries, reduce environmental impacts, and expand transport accessibility across urban, suburban, and rural contexts.

Key topics for discussion in this session include (but are not limited to):

- Data-driven approaches for transport demand forecasting
- Agent-Based Modelling and Simulation
- Demand-Responsive Transport (DRT)
- Public Transport-based crowdshipping models and cargo hitching systems
- Multimodal, integrated and interoperable transport services
- Vehicle Routing and Scheduling problems
- Operational Challenges and Scalability Issues in last-mile logistics
- GIS for transport planning and operation
- Mobility as a Service (MaaS)
- Transport accessibility analysis.

3. Organizer(s):

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