



18th IFAC Symposium on Information Control Problems in Manufacturing (INCOM 2024)
28-30 August 2024, Vienna, Austria
“Sustainable transformation towards autonomous manufacturing systems”

Invited Session:

Physical Internet in modern logistics and supply chain management

Session identification code 351ie

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Topics

The Physical Internet (PI) represents a global logistics paradigm introduced in 2010 with the aim of enhancing the efficiency, sustainability, and resilience of contemporary logistics and supply chain systems (Montreuil, 2011; Ballot et al., 2014). Drawing inspiration from the principles of the Digital Internet, PI is aimed at establishing seamless connections among universal logistics networks, facilitating dynamic coordination and the sharing of operations and services across diverse networks and stakeholders. This transformative paradigm poses significant challenges to achieving interoperability across physical, digital, and business dimensions, disrupting existing best practices and organizational models (Pan et al., 2021). Consequently, a rich research field has emerged around PI, encompassing fundamental theoretical investigations and practical applications, receiving increasing attention from researchers and practitioners worldwide (Münch et al., 2023; Pan et al., 2017). Recent research further investigate the interplay between the digitalization of logistics and Physical Internet, exploring how digital tools and models can contribute to the realization and management of the Physical Internet, including logistics asset management, network configuration, operations management (Chargui et al., 2022; Fahim et al., 2022; Kong et al., 2023).

The Invited Session has a primary objective of gathering recent original research that centers on the concept of the Physical Internet, converging a broad spectrum of important topics in logistics operations and supply chain management, for example (but not limited to) the following topics:

- Fundamental research for PI development, including high quality and original conceptual research, review papers, position papers
- Decision making in PI, mathematical modelling and simulation research
- Applications and case studies of PI
- PI for resilient and sustainable network design and operations
- PI and Circular Economy
- PI for City logistics
- Intralogistics and PI, including port, warehouse, or manufacturing systems
- Collaborative mechanisms and protocols in Physical Internet
- PI and logistics digitalization
- Cyber-Physical Internet, Digital Twins

Keywords

Physical Internet, Logistics and supply chain management, Digitalization, Sustainability, Resilience, Cyber-physical systems.

Important Dates

Full Paper Submission 31.01.2024

Final paper submission 15.04.2024

Submission

- All contributions must be electronically submitted through the PaperPlaza Conference Manuscript Management System: <https://ifac.papercept.net/conferences/scripts/start.pl>
- Guidelines for the preparation of manuscripts are provided on the IFAC website <https://www.ifac-control.org/conferences/authors-guide>
- You can find templates on the Author guide: <https://www.ifac-control.org/conferences/author-guide>
- Accepted papers that have been presented at an IFAC meeting will be published in the proceedings of the event using the open-access IFAC-PapersOnLine series.

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