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**IPIC**  
2018

## 5th International Physical Internet Conference

June 18-22, 2018 | University of Groningen, the Netherlands

### Call for Contributions

*We invite you to submit one of the following types of contributions to the International Physical Internet Conference (IPIC) 2018. We challenge you to submit a contribution in the form of a paper and/or poster presentation that includes a view on implementation, impact or directions for the Physical Internet concept in the next five years from now.*

- *a research paper/poster on, for example, conceptual research, assessment research, case study research, modelling and validation research.*
- *a white paper or case study description describing an application in practice*
- *a report/poster describing the results of novel applications and technologies or innovative ideas and positions resulting from a project jointly performed by an academic and industry partner*

### Short introduction on the Physical Internet

The introduction of the Physical Internet (PI,  $\pi$ ) has opened a paradigm-breaking field encompassing the hyperconnectivity and interoperability of smart logistics networks, transportation systems, manufacturing systems and supply chains, enabling seamless open asset sharing and flow consolidation on a massive scale. It aims to transform the way physical objects are moved, deployed, realized, supplied, designed and used all around the world so as to improve by an order-of-magnitude the overall induced performance in terms of economical, environmental and societal efficiency and sustainability.

### Aim of the conference

IPIC 2018 aims to provide an open forum for researchers, innovators and practitioners to introduce leading edge concepts and methodologies; to review the state-of-the-art technologies and latest projects, and to identify critical issues and challenges for future Physical Internet induced research, innovation and implementation. Specifically, the conference focuses on insights for implementation steps of the Physical Internet in the coming five years. Conference topics include inter-connected logistics, PI fundamentals, business models, governance and implementation, cross-chain control and collaboration, synchromodal transportation, IT systems, stakeholders and their roles.

### Review process

- Abstracts of all contributions will be reviewed;
- Papers and posters will be made widely available on <http://www.pi.events>;
- Papers and posters must respect the guidelines and templates provided on the conference website;
- Authors of papers and presentations will be invited to present them in related conference workshops depending on availability of free time-slots;
- Research papers will be peer-reviewed by the scientific committee;
- The best research papers will be targeted for extension toward publication in special issues of scientific journals;

- The best innovation papers will be targeted for adaptation toward publication in special issues of professional journals;
- Posters presentations will be the highlight of an event in the evening on the first day of the conference;
- We refer to the call for papers for the doctoral workshop that will be held prior to the conference.

**The timetable for contributions is as follows:**

- |  |                                 |
|--|---------------------------------|
| • <b>Contribution abstract submission deadline:</b>  | <b>March 15, 2018</b>           |
| ○ 200-word max for poster and presentation abstracts |                                 |
| ○ 1000-word max for paper abstracts                  |                                 |
| • <b>Abstract acceptance notification:</b>           | <b>14 days after submission</b> |
| • <b>Paper and poster submission deadline:</b>       | <b>May 1, 2018</b>              |
| • <b>Poster acceptance notification:</b>             | <b>14 days after submission</b> |
| • <b>Paper acceptance notification:</b>              | <b>21 days after submission</b> |
| • <b>Revised research paper submission deadline:</b> | <b>June 1, 2018</b>             |

Full papers must respect the format guidelines which are available via the templates available within the conference website. Full papers should be between 6 and 16 pages long (including figures and references), and clearly indicate the list of authors and their affiliation. All contributions are to be in English. Submitted contributions will be evaluated with regards to their suitability for the conference, originality and technical soundness.

For more information, please contact us via [ipic2018@rug.nl](mailto:ipic2018@rug.nl)

**The contributions may be related, yet not limited, to the following topics:**

- Physical Internet Fundamentals and Constituents
  - Proposition of conceptual Physical Internet frameworks
  - Investigation of key enabling constituents of the Physical Internet
  - Efficiency, sustainability, resilience, security, adaptability, agility of the Physical Internet
  - PI container design & engineering: transport, handling and packaging container design and engineering; Modularization and standardization; Smart and active containers; Panel oriented container design; Interaction with encapsulated smart objects; Container logistics and business
  - Design, engineering, planning and operation of hyperconnected handling, storage and transportation technologies, systems, facilities and infrastructures
  - PI hub design & engineering
- Technology vs. Physical Internet
  - Impact of new technologies and concepts on the Physical internet, such as drones, mobile robotics, 3D printing, machine learning, augmented reality, big data, and blockchain
  - Exploitation of Internet-of-Things in the Physical Internet for tracking, tracing, sensing, event management and prediction
  - Technologies for container tracing and asset monitoring through the Physical Internet, such as wireless sensor networks (WSN) and 5th generation telecommunication (5G)
- Physical Internet Implementation and Governance
  - Physical Internet implementation drivers and issues
  - Stakeholders and their roles in the Physical internet
  - Stakeholder incentives for PI adoption and implementation

- Negotiation, collaboration and conflict resolution within Physical Internet
- Social innovation and new ways of working in the Physical Internet
- Impact of regulatory innovation on PI
- Impact of PI induced innovation on regulation, taxation and duties
- Design of the Physical Internet governance structure and processes
- Investigation and instrumentation methodologies
  - Novel descriptive, predictive and prescriptive analytics; modeling; simulation; optimization and gaming approaches for Physical Internet research and instrumentation
  - Qualitative and quantitative methodologies for studying proposed or existing PI induced systems, processes, phenomena & business models
  - Decision models and supports in the Physical Internet context
- Hyperconnected logistics
  - Hyperconnected transportation, distribution, manufacturing, supply chain and/or service
  - Hyperconnected synchromodality
  - Hyperconnected city logistics
  - City hubs
  - Last-mile delivery
  - Novel ICT platforms enabling Physical Internet and hyperconnected logistics
  - Open hyperconnected logistics networks performance and impact assessment
  - Digital ecosystems and information sharing for freight transport and logistics (e-freight, e-booking, e-CMR...)
  - Logistics asset sharing, flow consolidation and load optimization
  - Smart hyperconnected inventory deployment and management
  - Hyperconnected crowdsourced delivery and transportation
  - Hyperconnected cold storage
  - Hyperconnected backbone logistics networks
  - Hyperconnected modular production
  - Mobility web, distribution web, realization web, supply web and service web
  - Open Logistics Interconnection model for hyperconnected logistics service architecture
  - Hyperconnected logistics protocols
  - Event service and management in hyperconnected logistics networks
- Hyperconnected cockpits and control towers
  - KPIs, cockpits, control towers for hyperconnected logistics
  - Concepts, technologies and processes for hyperconnected cockpits & control towers
  - Models and algorithms feeding the cockpits, enabling the analytics, advising the decision makers and easing the open collaboration
  - Collaborative behavior of users of hyperconnected cockpits & control towers
- Hyperconnected business models
  - Business models, revenue models and profit models in hyperconnected logistics
  - Liability and insurance issues in hyperconnected logistics
  - Hyperconnected business model innovation
- Energy reduction and resource efficiency
  - Energy reduction and decarbonization of freight transport and logistics, including end-to-end carbon footprint measurement, indicators and assessment of (policy/industry) practices, etc.
  - Transport and logistics implications of the circular economy: waste avoidance and resource efficiency
  - Supply Network horizontal and vertical collaboration driving asset (vehicles, warehouses, terminals) utilization efficiency, energy and emissions reduction