

IEEE International Workshop on International Workshop on Future Industrial Network Protocols (FINP)

June 14–18, 2021
Montreal, Canada



FINP Workshop Co-chairs

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Scope

5G networks will deploy many new network services such as ultra-reliable low latency (uRLLC), massive Machine-type communications (mMTC), enhance Mobile Broadband (eMBB) and provide support for massive IoT (mIoT). These in turns will significantly impact how industrial networks are deployed, managed and operated.

Industrial networks have evolved from serial bus towards more complex systems, and are converging towards IT. These are networks with specific protocols, constraints and requirements. Currently, the main protocols are EtherNet/IP, Profinet, EtherCAT, Powerlink, Modbus-TCP and others. However, wireless industrial networks are becoming more and more deployed, growing 30% year on year over the last few years. This evolution will only accelerate when 5G will be deployed. Industrial networks have stringent requirements in scale, delays, security and amount of bandwidth. We aim to explore how such diverse and wide range of applications can collectively bring new ideas and research in industrial networks & inter-networking technologies in protocols, architectures, security, and algorithms. This workshop aims to look at a set of problems from the key aspects mentioned above: new services, new routing and addressing methods, new infrastructures, new security mechanisms, mechanisms for scaling massive IoT networks, mechanisms for resiliency, and other aspects of large-scale industrial networks.

Topics

We solicit stimulating, original, previously unpublished completed work, position papers, and/or work-in-progress papers. We further encourage papers that propose new research directions or could stimulate lively debate at the workshop. We invite submissions on a wide range of topics, including, but not limited to:

- Protocols and frameworks for delivering high precision services
- Network protocols optimizations for Industrial networks
- Scheduling in large-scale networks for high-precision applications
- Resiliency and reliability for industrial networks
- Verification and proof of service delivery for applications needing high reliability
- Innovations in routing technologies and addressing for industrial and IoT networks
- Resource allocation mechanisms for deterministic and lossless data transmission
- Virtual Network Function Handoff Management for edge computing in 5G
- Surveys and techniques in the data plane for Industrial Internet
- Network security and privacy issues in Industrial Internet
- Algorithms to support ultra-low-latency in packet-based networks
- Theory and algorithms for lossless packet delivery
- Innovations in the datagram and packet-based formats for uRLLC and mMTC
- Methods for transmission of very large volumetric data and for mIoT data
- Efficient network/service management and orchestration of the SDN control plane

Important Dates

❖ Paper submission
deadline:

January 20, 2021

❖ Notification of acceptance:
February 20, 2021

❖ Camera-ready papers:
March 1, 2021

Submission link

<https://edas.info/newPaper.php?c=27561&track=102878>

Webpage link

finp.disi.unibo.it

Paper Submission

The workshop accepts only novel, previously unpublished papers. The page length limit for all initial submissions for review is SIX (6) printed pages (10-point font) and must be written in English. All final submissions of accepted papers must be written in English with a maximum paper length of six (6) printed pages (10-point font) including figures. No more than one (1) additional printed page (10-point font) may be included in final submissions and the extra page (the 7th page) will incur an over length page charge of USD100. For more information, please see IEEE ICC 2021 official website: <https://icc2021.ieee-icc.org/authors>