Call for Papers

1st Workshop on Intent-Driven Autonomous Networking (IDAN)

The 22nd International Conference on Wireless Communications and Mobile Computing

Website: http://iwcmc.net/2026/

Submission Link: **https://edas.info/N34281**

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• Scope

Conventionally, end-to-end network quality of service (QoS) is still provided in a best-effort manner, while customized network services have become increasingly urgent for both vertical industries and individual users. To enable next-generation networking paradigms, a technological breakthrough is required to reduce network complexity and enhance flexibility, security, and resilience for end-to-end customized services. Moreover, future networks must support autonomous management, orchestration, and standardized interfaces.

The emergence of intent-driven/based networks (IDN/IBN) has attracted significant attention from academia, standardization bodies, and industry due to their potential to simplify and personalize network requirements. As an intelligent networking paradigm, IDN/IBN is expected to integrate artificial intelligence, network orchestration, and verification techniques. The concept of "intent" refers to the goals or objectives expressed by external users or internal Operations and Maintenance (O&M) personnel, often in a declarative form or even in natural language. While these intents express business objectives or network expectations, they do not specify how they should be implemented.

Intent-driven/based networks (IDN/IBN) can be applied to autonomous network management, optimization, and configuration across various scenarios, and it will be one of the most important topics in next-generation

networking. It relieves users from the manual effort of managing network services and alleviates the network O&M burden when addressing potentially conflicting goals. This paradigm enables flexible and reliable network services, realizes efficient resource utilization, and fully releases the potential of the network.

This workshop aims to bring together researchers from both academia and industry to explore the opportunities, challenges, applications, and key techniques of intent-driven/based networks (IDN/IBN). Open issues, future research directions, and key innovations will be discussed in aspects related to intent-driven/based network management. Authors are invited to submit original papers (not previously published or simultaneously submitted to another venue) to this workshop. Topics include, but are not limited to:

- Theoretical models and methodologies for intent-driven/based networks
- General intent refinement and translation, policy generation, and verification techniques
- Intent conflict detection and resolution, intent negotiation, and intent assurance
- Resilient and full-life cycle guarantee design for intent-driven/based networks
- Security, reliability, and transparency for intent-driven/based networks
- Semantics-aware and task-oriented design for intent-driven/based networks
- Intent-driven/based autonomous network optimization and orchestration
- Network routing, slicing, and QoS assurance design for intent-driven/based networks
- Applications of game theoretical design for intent-driven/based networks
- Machine learning, deep learning, and federated learning for intent-driven/based networks
- Large AI models and AI agent communication for intent-driven/based networks
- Intent-driven/based closed-loop network management and service-oriented networks
- Cloud, fog, and edge computing for intent-driven/based networks
- Intent-driven/based networks for next-generation Internet/SDN/NFV/cloud-native systems
- Intent-driven/based design for mobile, UAV, vehicular, and satellite networks, etc.
- Intent-driven/based next-generation Internet of Things, data center, backhaul, and optical networks, etc.
- Digital twins and in-band telemetry for intent-driven/based networks
- Applications to Metaverse, Blockchain, AI-native infrastructures, and holographic communications, etc.
- Enhancements in standardization, open-source development, and advancement of intent-driven/based networks

Submitted papers are encouraged to address novel technical challenges or industrial and standardization aspects of the key techniques, architectures, and applications of intent-driven/based networks.

• Submission Guidelines

Only PDF files will be accepted for the review process, and all submissions must be made electronically through EDAS at: https://edas.info/N34281

Technical papers can be up to 6 pages, including tables, figures, and references. All submissions must be written in English and use a standard IEEE two-column conference template, available for download from https://www.ieee.org/conferences/publishing/templates.html.

At least one author is required to register at the full rate to present accepted papers at the workshop. Accepted papers will be published in the IEEE IWCMC 2026 proceedings and will be submitted to the IEEE digital library (IEEE Xplore).

Note: Within this workshop, there will be one Best Paper Award.

• Important Dates

Same deadlines as the main conference dates.

• Technical Program Committee

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