

Special Session

AI-Enabled Distributed Network Slicing: Architectures and Algorithms

Organizing Project	MonB5G (https://www.monb5g.eu/)
Structure	1h30, 1 Keynote speaker, 4 papers
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Background and Motivation

With the proliferation of vertical industry use cases, B5G networks need to handle massive slices that cross multiple technological domains, which poses fundamental challenges to the classical centralized management and orchestration (MANO) approaches that represent a single point of failure and suffer from large monitoring overhead, delayed and heuristic-based decisions. Alternatively, Artificial Intelligence (AI)-based distributed hierarchical network slicing MANO would be logically closer to the pool of resources to be orchestrated, enabling thereby scalability, fast decision/reaction with low data exchange and therefore more security. In this regard, AI algorithms should be driven by the distributed nature of monitoring data across the network to analyse and take decisions locally, which is considered in recent standardization efforts such as ETSI ZSM, wherein each network domain is endowed with a data collection element that feeds a local AI analytics and decision entity. The central entity may intervene to solve global problematics. This new paradigm shift urges the research community to come up with novel architectural and algorithmic innovations.

Topics of Interest

This special session aims at bringing researchers together to discuss the solutions, opportunities and challenges in the design of automated distributed massive network slicing from both an architectural and AI perspective. This event will focus on, but will not be limited to, the following subjects of interest:

- Distributed architectures for network slicing.
- Zero-touch management and orchestration.
- Federated learning for network slicing.
- Decentralized reinforcement learning for network slicing.
- Decentralized AI schemes for network slicing energy-efficiency.

- Decentralized resource management for network slicing.
- Innovations in MANO platforms.
- Security and trust in network slicing.
- New business models for decentralized network slicing.
- Integration aspects of AI-driven network slicing.