THE **IEEE 5G WORLD FORUM** IS NOW THE

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**HYBRID EVENT:
IN-PERSON AND VIRTUAL**

Call for Papers
SYMPOSIUM ON NEXT-GENERATION NETWORKING AND INTERNET (NGNI)

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SCOPE AND MOTIVATION

We are witnessing a progressing softwarization of telecommunication networks driven by the increasing impact of information and Internet technologies. This softwarization has driven and accelerated two types of convergence: on the one hand, the convergence of fixed and mobile networks; on the other hand, with the rise of 5G networks, the convergence of telecommunications and the Internet, particularly when looking at the Internet of things.

Although international standards are key for defining reference architectures, interfaces, and protocols, we can notice that the diversity of application domains and their related value chains and business models is creating a huge complexity and slowing down the early exploitation of technological innovations in this highly converging and articulated landscape. More pragmatic and innovative approaches might be needed to build agile future networking infrastructures, which will meet and dynamically adapt to the various evolving vertical demands, also enabled by the agile softwarization of the next-generation networking and Internet infrastructures. For example, emerging private enterprise and campus networks could be seen as a market-driven approach to bypass to the mainstream public network evolution, acting as a catalyst for accelerating agile innovations. Emerging open network approaches and the concept of disaggregation of network functionalities will pave the way for new, more open, and less rigid networking ecosystems. In this perspective, also the exploitation of emerging AI/ML techniques for networking are going to accelerate the process, by enabling automated network management/optimization and by allowing even non-experts to build and operate their own customized next-generation networks.

Many of the above mentioned trends are associated with 6G research, but they are already emerging right now in the context of 5G evolution, with significant impacts on next-generation networking evolution. This symposium aims at focusing on the evolution of network softwarization towards the provisioning of customized and dedicated end-to-end networks, with personalized and dynamics QoS management/SLAs, also in presence of pervasive utilization of virtualization/containerization techniques over networking infrastructure nodes, while decoupling the discussions from a specific mobile network generation. In this perspective, the symposium has the ambition of identifying the primary challenges and opportunities in building up secure and reliable open networking environments for ensuring a rapid, efficient, and sustainable digital transformation of our industries and our society.

TOPICS OF INTEREST

We We invite submissions on a wide range of research topics about softwarized next-generation networking and the Internet (NGNI), to be addressed from both academic and industrial viewpoints, related but not restricted to the following topics:

- Open networking approaches and toolkits for NGNI
- End-to-end network function disaggregation and composition (beyond Open RAN, NFV, etc)
- Access network convergence (fixed, mobile, NTNs,...)
- Reference architectures/frameworks for NGNI
- Network abstractions and open APIs for NGNI
- Networking as part of applications vs. multi-purpose networks (network slicing)
- Virtualization technologies and infrastructures in the cloud continuum (at end systems, edge nodes, cloud)
- QoS/QoE management and orchestration in open virtualized NGNI
- End-to-end network programming
- Novel software paradigms for integrated control and management
- Private campus and enterprise (e.g., Industrial IoT) networks
- Application visions from different verticals
- (Multimedia vs Industrial IoT)
- Network operation models (public, private, P2P, ...)
- Network interworking, interoperability, and interdomain networking
- Network migration and evolution
- Life cycle management and innovative new deployment models (NGNI CD/CI, NGNI DevOps)
- AI/ML for network automation and optimization (NGNI MLOps)
- End system evolution and related future HMIs
- Open Source vs. global standards
- Value chains and business models for NGNI
- Scalability and wide-scale performance evaluation of NGNI infrastructures and applications
- Security and Identity Management
- Resilience and sustainability of NGNI
- Best practices, open testbeds, and living labs
- Education for NGNI

IMPORTANT DATES

Paper Submission: **21 August 2022 (firm)**
Notification: Rolling basis until 31 August 2022
Camera Ready: 7 September 2022

HOW TO SUBMIT A PAPER

All papers for technical symposia should be submitted via EDAS.

Full instructions on how to submit papers are provided on the IEEE FNWF 2022: https://fnwf.ieee.org/