2nd Edition of ATHENA WORKSHOP

Empowering 6G Networks: 2nd Workshop on Advancements in Research Infrastructures, Adaptive Frameworks, and Global Architectural Evolution (ATHENA 2025)

1. Technical Focus, Motivation, and Complementarity to the Main Conference

The **ATHENA 2025** workshop focuses on the pivotal advancements required for 6G networks to become a reality. The core themes revolve around research infrastructures, adaptive frameworks, and the architectural evolution of future communication systems.

The first edition of ATHENA Workshop, hosted at IEEE CAMAD 2024, was a resounding success, attracting a diverse group of researchers, industry experts, and innovators dedicated to shaping the future of 6G networks. With approximately 40 original research papers published, the workshop provided a fertile ground for discussions on advanced network infrastructures, AI-driven adaptability, and global architectural evolution. The event fostered insightful exchanges on emerging 6G technologies, cutting-edge research testbeds, and the pivotal role of adaptive frameworks in next-generation networks. ATHENA established itself as a premier venue for thought leadership in 6G research, laying a strong foundation for its continuation at IEEE SDN/NFV 2025.

The motivation behind ATHENA 2025 is to provide a dedicated venue where experts can discuss next-generation testbeds, AI-driven network adaptability, and global connectivity solutions that transcend traditional network paradigms. With 6G expected to introduce ultra-low latency, AI-native architectures, and seamless integration of terrestrial and non-terrestrial networks, this workshop will serve as a vital forum to address technical challenges and propose groundbreaking solutions.

ATHENA 2025 complements the **IEEE SDN/NFV 2025 conference** by exploring how the softwarization of networks, virtualization techniques, and AI-driven optimizations will shape the transition to 6G. By bringing together academia, industry, and policymakers, this workshop fosters collaboration on key innovations driving the evolution from 5G to 6G.

2. Organizing Committee Chairs – Names, Addresses, and Short Bios

Workshop General Chair

Dr. Harilaos Koumaras
NCSR Demokritos | Future Communication Networks – FRONT Research Group
Email: harilaos.koumaras@demokritos.gr
Dr. Koumaras is a senior researcher specializing in next-generation communication networks, including 5G and emerging 6G technologies. He leads the FRONT Research Group at NCSR Demokritos, focusing on AI-driven networking and future wireless architectures.

Workshop Organizing Committee (TPC co-Chairs)

Dr. Harilaos Koumaras
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networks, including 5G and emerging 6G technologies. He leads the FRONT Research Group at NCSR Demokritos, focusing on AI-driven networking and future wireless architectures.

Dr. George Lymperopoulos
OTE Telecommunications
Email: glimperop@ote.gr
Dr. Lymperopoulos has extensive expertise in network optimization and smart communications infrastructure, contributing to the development of future mobile network architectures.

Prof. Anna Tzanakaki
University of Athens
Email: atzanakaki@uoa.gr
Prof. Tzanakaki's research focuses on optical networking, cloud-enabled architectures, and the integration of AI into next-generation networks.

Dr. Nikos Passas
University of Athens
Email: passas@di.uoa.gr
Dr. Passas specializes in mobility management, radio resource optimization, and software-defined networking approaches in advanced network environments.

Prof. Panos Karkazis
University of West Attica
Email: p.karkazis@uniwa.gr
Prof. Karkazis works on secure communications and network intelligence, particularly in the intersection of edge computing and distributed architectures.

Prof. Christos Xenakis
University of Piraeus
Email: xenakis@unipi.gr
Prof. Xenakis is an expert in cybersecurity, cryptography, and trustworthy network architectures for next-generation systems.

3. Publicity and Advertising Plan

To ensure widespread visibility and engagement, ATHENA 2025 will employ a multi-channel publicity and advertising approach:

- **Website & Social Media:**
    - A dedicated workshop webpage hosted on the IEEE SDN/NFV 2025 conference site.
    - Promotion on LinkedIn, Twitter, and Facebook through IEEE-affiliated accounts and organizing committee members.
- **Targeted Email Campaigns:**
    - Outreach to relevant IEEE societies and technical communities.
    - Direct communication with potential contributors from academia, industry, and research institutes.
- **Collaborations with Journals and Technical Communities:**
    - Announcement in IEEE Communication Society newsletters and special interest groups.

    - Coordination with relevant research projects and industry alliances in SDN/NFV, 6G networking, and AI-driven communications.

- **Conference Announcements & Events:**
    - Active promotion during related IEEE conferences (e.g., Globecom, ICC, CAMAD).
    - Invited keynote speakers to increase visibility and encourage participation.

This multi-faceted strategy will ensure high-quality submissions and meaningful engagement from leading researchers and industry professionals.

4. The planned format of the workshop

The workshop targets at full original research papers to be published at IEEE XPLORE. The 1st edition of the workshop had received more than 85 manuscripts, resulting to 40 accepted papers for presentation and a full day workshop.

5. Call For Papers (CfP)

Call for Papers

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The IEEE International Conference on SDN/NFV 2025 invites researchers, practitioners, and industry experts to submit their original contributions to the workshop titled "Empowering 6G Networks: Workshop on Advancements in Research Infrastructures, Adaptive Frameworks, and Global Architectural Evolution."

Workshop General Chair
Dr. Harilaos Koumaras
NCSR Demokritos | Future Communication Networks – FRONT Research Group

TPC co-Chairs
Dr. Harilaos Koumaras, NCSR Demokritos
Dr. George Lymperopoulos, OTE
Prof. Anna Tzanakaki, University of Athens
Dr. Nikos Passas, University of Athens
Prof. Panos Karkazis, University of West Attica
Prof. Christos Xenakis, University of Piraeus

Workshop Publicity co-Chairs
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Mary Karapsiadi, NCSR Demokritos

Technical Programme Committee Members (TBC)
Pedro Merino, University of Malaga
Carlos Enrique Palau Salvador, Polytechnic University of Valencia
David Artunedo, Telefonica

Michael Dieudonne, Keysight
Dimitrios Fragkos, NCSR Demokritos
Ioanna Mesogiti, OTE
Pavlos Basaras, ICCS
Dimitris Uzunidis, University of West Attica
Dimitris Tsolkas, Fogus Innovations and Services
Jose Costa Requena, Cumucore
Anna Brunstrom, Karlstad University
Ignacio Lacalle Úbeda, Polytechnic University of Valencia
Eleni Theodoropoulos, OTE
Javier Garcia Rodrigo, Telefonica
George Makropoulos, NCSR Demokritos
Alejandro Fornés Leal, Polytechnic University of Valencia
Ioannis Manolopoulos, NCSR Demokritos
Aris Farao, University of Piraeus
Giannis Chouchoulis, INQBIT
Fofy Setaki, OTE
Vaios Koumaras, INFOLYSiS
Vassilis Pitsilis, NCSR Demokritos

Workshop Scope:

The "Empowering 6G Networks" workshop, to be held at IEEE SDN/NFV 2025, is dedicated to exploring the vast potential of 6G technology and its impact on the future of communication. This workshop aims to serve as a crucible for innovative ideas, research findings, and discussions that will shape the trajectory of 6G development. The scope of this workshop encompasses a broad spectrum of topics, each pivotal to the realization of 6G's promise.

At the core of the workshop's scope is the advancement of research infrastructures. This includes the development of testbeds and simulation environments that mirror the complexity of real-world 6G scenarios. Such infrastructures are essential for validating the theoretical models and practical applications that will underpin 6G networks. They also provide a foundation for cross-disciplinary collaboration, bringing together experts in telecommunications, computer science, electrical engineering, and other fields to push the boundaries of what is possible.

Adaptive frameworks are another critical aspect of the workshop's focus. As 6G networks will need to be inherently flexible to accommodate a wide range of applications and services, these frameworks will explore how networks can self-organize, heal, and optimize themselves in response to dynamic conditions. This includes the use of AI and machine learning to predict and respond to network demands, as well as the development of algorithms that can dynamically allocate resources in real-time.

The global architectural evolution of networks is also a central theme. The workshop will delve into how 6G networks can be architected to ensure seamless global connectivity, supporting the burgeoning Internet of Things (IoT), autonomous systems, and smart cities. Discussions will cover the integration of terrestrial and non-terrestrial networks, the role of edge computing in reducing latency, and the use of blockchain and other distributed ledger technologies to secure and manage network transactions.

Topics of Interest:

The "Empowering 6G Networks" workshop will focus on the latest advancements in 6G network research infrastructures, adaptive frameworks, and the evolution of global network architecture. This workshop will serve as a platform for discussing the challenges and opportunities that lie ahead in the journey towards realizing the full potential of 6G networks.

Submissions are invited on topics including, but not limited to:

- Advanced 6G network infrastructure and design
- Adaptive frameworks for network scalability and flexibility
- Evolution of global network architecture in the context of 6G
- Integration of AI and machine learning in 6G networks
- Security, privacy, and trust in 6G networks
- Cognitive Coordination of 6G Networks
- User-centric 6G networks
- Trustworthy 6G-Networks
- Intent-driven Networking
- Cognitive Radio Networks
- AI-Driven Resource Allocation
- IoT-Edge-Cloud Continuum in 6G Networks
- Energy-efficient and sustainable 6G technologies
- Quantum communications and networking in 6G
- Satellite broadband and non-terrestrial networks in 6G
- Open RAN and its role in 6G development
- Digital twins and their application in 6G networks
- Brain-to-brain communication and its implications for 6G
- Industry 5.0 and its convergence with 6G networks
- Generative AI for Network Design and Management
- Neuro-Symbolic AI Integration in 6G Networks
- AI-driven Multi-Agent Communication for Collaborative 6G
- Advances in Explainable and Human-Centered AI in 6G Networks
- AI for Edge Computing

Submission Guidelines:

Authors are encouraged to submit high-quality, original work that has not been previously published. Submissions should be formatted according to the IEEE conference template and submitted through the EDAS submission portal. Detailed instructions and submission deadlines will be provided on the IEEE SDN/NFV 2025 website.

Important Dates: (tentative)

- Paper Submission Deadline: 14/7/2025
- Acceptance Notification: 1/8/2024
- Camera-Ready Submission: 8/8/2024

The workshop authors/presenters shall perform a full conference registration, while the participants shall perform 1-day registration if they are planning to attend workshops organised in the same day or a full conference registration for attending workshops organised in different days

The workshop is supported by:

We look forward to your contributions and to an engaging and insightful workshop at IEEE SDN/NFV 2025.

For any inquiries, please contact the workshop co-chairs.