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Monday, June 23

Monday, June 23 9:00 - 9:10 (Europe/Budapest)

WIN 2025 - Welcome and Workshop introduction

Chair: Eric Renault (LIGM, Université Gustave Eiffel, CNRS, ESIEE Paris, France)

NAIFNET 2025 - Opening Session

Room: Velence
Chair: Slawomir Kuklinski (Warsaw University of Technology, Poland)

Monday, June 23 9:10 - 10:30 (Europe/Budapest)

WIN 2025 - Keynote talk

Benoît Claise, Intelligent Operations & Management CTO (Huawei, Belgium)
Chair: Eric Renault (LIGM, Université Gustave Eiffel, CNRS, ESIEE Paris, France)
Benoît Claise joined Huawei Ireland Research Center on Feb 2021 (ex-Cisco Fellow), as Data Communication Intelligent Operations Management CTO, focusing on realizing the ADN vision these days with his team in Ireland. For the last couple of years, Benoit has been mainly focusing on configuration management, network automation, data-model driven management, YANG-based telemetry, and knowledge graph. Of specific interest for this workshop is the service assurance, with the model-driven telemetry for closed loop automation, on digital map, and intent ... as building blocks to reduce the cost of managing networks. Served a 6 years term as IETF Operational and Management Area Director, Contributor to the IETF with 35 RFCs, exclusively focused on the YANG models standardization throughout the industry, a labor-intensive but necessary step for the automatic configuration (via NETCONF or RESTCONF) required in today Software Defined Network world. Benoit also published the books, including "Network Programmability with YANG: The Structure of Network Automation with YANG, NETCONF, RESTCONF, and gNMI" and "Network management: Accounting and Performance Strategies."

TS1: NAIFNET 2025 - Technical Session #1

Room: Velence
Chair: Slawomir Kuklinski (Warsaw University of Technology, Poland)

FOKUS / TU Berlin, Germany)

Monday, June 23 11:00 - 12:30 (Europe/Budapest)

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Chair: Eric Renault (LIGM, Université Gustave Eiffel, CNRS, ESIEE Paris, France)

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Monday, June 23 11:00 - 12:20 (Europe/Budapest)

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Chair: Eric Renault (LIGM, Université Gustave Eiffel, CNRS, ESIEE Paris, France)

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Chair: Christian Grasso (University of Catania, Italy)

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Cicek Cavdar (KTH - Royal Institute of Technology, Sweden)
Thomas Magedanz (Technische Universität Berlin, Germany)
Christian Esteve Rothenberg (UniCamp, Brazil)
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Chairs: Gianluca Davoli (University of Bologna, Italy), Christian Grasso (University of Catania, Italy), Alessio Sacco (Politecnico di Torino, Italy), Sebastian Troia (Politecnico di Milano, Italy)

Tuesday, June 24

Tuesday, June 24 9:30 - 10:30 (Europe/Budapest)

KN1: Network Optimization and Collaboration

Markus Gruber, Nokia Bell Labs, Germany
Room: Britannial+II
Chair: Pál Varga (Budapest University of Technology and Economics, Hungary)
Given their increasing complexity, networks benefit from collaborative elements to maximize their performance. For instance, an optimal collaboration between network and application can substantially decrease the end-to-end latency. From a more long-term perspective, "experience" a network has gained over time in one domain can be shared and re-used in another domain. Moreover, utilizing resources from a larger pool can improve the user experience, but requires

collaboration to balance the interests of different stakeholders. Ultimately, collaborative elements serve as the intelligent glue to connect a plethora of network modules to a meaningful experience.

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Wednesday, June 25

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Wednesday, June 25 11:30 - 12:30 (Europe/Budapest)

KN2: Efficient Abstractions for Network Quality of Service

Mina Tahmasbi Arashloo, University of Waterloo, Canada

Room: Britannial+II

Chair: Massimo Tornatore (Politecnico di Milano, Italy)

Over the past two decades, programming abstractions for packet processing have gained widespread adoption. These abstractions enable network operators to specify packet processing logic in high-level, domain-specific languages that are independent of the underlying hardware architecture of packet processing nodes. This approach has unlocked numerous benefits, including compiler-driven generation of efficient low-level implementations, portability across diverse execution environments, and automated testing and verification. Most existing abstractions, however, primarily focus on L2/L3 packet processing. In this talk, we highlight the need for new programming abstractions that capture the complexities of network mechanisms essential for quality of service, such as transport protocols, packet scheduling, and active queue management. We will explore a number of potential solutions and discuss how they can facilitate efficient automated implementation and analysis of the above mechanisms, helping network operators to provide applications with their desired level of quality of service.

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Wednesday, June 25 15:30 - 16:00 (Europe/Budapest)

PhD_Symp-TS2a: PhD Symposium - Technical Session 2a

Anomaly Detection and Classification
Room: Britannia III
Chairs: Remi Badonnel (TELECOM Nancy - LORIA/INRIA & RESIST Research Team, France), Guillaume Doyen (IMT Atlantique, France)

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PhD_Symp-TS2b: PhD Symposium - Technical Session 2b

Softwarized Networks
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Chair: Guillaume Doyen (IMT Atlantique, France)

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SPS4: Network Function Virtualization and Service Orchestration

Room: Britannia III

Chair: Slawomir Kuklinski (Warsaw University of Technology, Poland)

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Panelists:
Mina Tahmasbi Arashloo (University of Waterloo, Canada)
Estefania Coronado (University of Castilla-La Mancha, Spain and Fundació i2CAT, Spain
Volker Hilt (Nokia Bell Labs, Germany)
Róbert Szabó (Master Researcher, Ericsson Research, Hungary)

Moderators:
Flavio Esposito (Saint Louis University, USA)
Sandra Scott-Hayward (Queen's University Belfast, UK)
Room: Britannial+II
Chairs: Flavio Esposito (Saint Louis University, USA), Sandra Scott-Hayward (Queen's University Belfast, United Kingdom (Great Britain))

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Thursday, June 26 13:30 - 15:00 (Europe/Budapest)

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Room: Britannia III
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Chair: Sandra Scott-Hayward (Queen's University Belfast, United Kingdom (Great Britain))

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Thursday, June 26 15:30 - 16:30 (Europe/Budapest)

KN3: Programmable and Intelligent Networks: Optimization Opportunities and Dependability Challenges

Stefan Schmid, Technical University of Berlin and Fraunhofer Institute for Secure Information Technology, Germany
Room: Britannial+II
Chair: Prosper Chemouil (Cnam, France)
Communication networks are becoming increasingly programmable and intelligent. This introduces exciting visions such as self-optimizing networks which adapt to the workload on various layers, to improve performance and quality-of-experience. However, such networks may also come at a loss of control, and it is important to ensure a high degree of dependability. In this talk, we explore different optimization opportunities of programmable networks, from topology programming to buffer management to slicing to routing to congestion control. We then discuss to which extent automation can improve or harm the reliability of networks, and we explore the use of different methodologies and tools from AI/ML and formal methods to optimally support human operators.

Friday, June 27

Friday, June 27 9:00 - 9:20 (Europe/Budapest)

O: Opening Session and Project Introduction

Room: Zsolnay II
Chair: Daniele Bringhenti (Politecnico di Torino, Italy)

Friday, June 27 9:20 - 10:30 (Europe/Budapest)

K: Keynote Speech

Securing the Future: Cybersecurity Challenges and Solutions for Softwarized and Virtualized 5G and Beyond Networks
Raouf Boutaba (University of Waterloo, Canada)
Room: Zsolnay II
Chair: Fulvio Valenza (Politecnico di Torino, Italy)
The evolution toward 5G and beyond mobile networks is marked by an unprecedented level of softwarization and virtualization, enabling dynamic, fit-for-purpose network services through technologies such as SDN, NFV, and network slicing. While these innovations offer flexibility and scalability, they also expand the attack surface, introducing new threats. This talk explores the cybersecurity implications of this transformation and aims to outline a path toward secure, resilient, and trustworthy 5G and beyond networks. It highlights emerging solutions, experiences, and challenges, emphasizing the need for security automation.

Friday, June 27 10:30 - 11:00 (Europe/Budapest)

CB1: Coffee Break 1

Friday, June 27 11:00 - 12:30 (Europe/Budapest)

TS1: Technical Session 1: Verifiable and Optimized Network Security

Room: Zsolnay II
Chair: Martin Husák (Masaryk University, Czech Republic)

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Friday, June 27 13:30 - 15:00 (Europe/Budapest)

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Room: Zsolnay II
Chair: Alessandra Rizzardi (University of Insubria, Italy)

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Friday, June 27 15:25 - 16:55 (Europe/Budapest)

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Room: Zsolnay II
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Friday, June 27 16:55 - 17:00 (Europe/Budapest)

C: Closing

Room: Zsolnay II

Chairs: Matteo Repetto (CNR, Italy), Fulvio Valenza (Politecnico di Torino, Italy)