Wednesday, July 1

09:00 - 12:30 Tutorial 1
(Parallel, 10:30-11:00 Coffee Break)

- Multilayer Network Planning and Operation Using Open-Source Tools, Jose-Luis Izquierdo-Zaragoza (Universidad Politécnica de Cartagena, Spain); Pablo Pavon-Marino (Technical University of Cartagena, Spain)

- Advances in Dynamic Routing Models and Algorithms for Large-Scale Graphs, Dimitri Papadimitriou (Alcatel-Lucent Bell Labs, Belgium)

- Flow and Congestion Control for High Performance Clouds: How to Design and Tune the Datacenter Fabric & SDN for Big Data?, Mitchell Gusat (IBM Zurich Research Laboratory, Switzerland); Cyriel Minkenberg (IBM Research - Zurich, Switzerland)

12:30 - 13:30 Lunch Break (provided)

13:30 - 14:50 Opening

- Welcome and Opening, Tibor Cinkler (Budapest University of Technology and Economics, Hungary) & Hiroaki Harai (NICT, Japan)

- [INVITED] Network Resilience for Massive Failures and Attacks, Biswanath Mukherjee (University of California, Davis, USA)

- [INVITED] Network Metamorphosis: Vision of the Near and of the Far Future, Szilard Zsigmond (Alcatel-Lucent, USA)

14:50 - 16:10 S1. Mobile
Chair: Andras Farago (The University of Texas at Dallas, USA)

- [INVITED] Towards 5G: Decentralized Routing in FiWi Enhanced LTE-A HetNets, Martin Maier (Institut National de la Recherche Scientifique (INRS), Canada)

- Approximation of Blocking Probabilities in Mobile Cellular Networks with Channel Borrowing, Jingjin Wu, Jun Guo, Eric W. M. Wong and Moshe Zukerman (City University of Hong Kong, Hong Kong)

- Green Frame Aggregation Scheme for WiFi Networks, Maha Aslani, Ahmad Showail and Basem Shibada (KAUST, Saudi Arabia)

16:10 - 16:40 Coffee Break
16:40 - 18:25 S2. Routing and Multi-stage Networks
Chair: Eiji Oki (The University of Electro-Communications, Japan)

- [INVITED] Two-phase Routing for Load Balancing in Lossless and Lossy Networks, Aleksandra Smiljanić (University of Belgrade, Serbia); Natasa Maksic and Marija Antic (Belgrade University, Serbia)

- Bridge Priority Provisioning for Maximizing Equal Cost Shortest Path Availability, Ting-Chao Hou and Yu-Cheng Tsao (National Chung Cheng University, Taiwan)

- Robust Network Flow Against Attackers with Knowledge of Routing Method, Vorapong Suppakitpaisarn (The University of Tokyo & JST, ERATO, Kawarabayashi Large Graph Project, Japan); Wenkai Dai (Universitat des Saarlandes, Germany); Jean-François Baffier (National Institute of Informatics & Tohoku University, Japan)

- Multi-Option, Multi-Class Path Scheduling Methods for Advance Reservation Systems, Elahe Soltanaghaei and Malathi Veeraraghavan (University of Virginia, USA)

- "Don't Let the Stack Get Stuck": A Novel Approach for Designing Efficient Stackable Routers, Jose Yallouz and Gideon Blocq (Technion - Israel Institute of Technology, Israel); Aviran Kadosh (Marvell Israel, Israel); Yoram Revah (Industry-Marvell Israel, Israel); Ariel Orda (Technion, Israel)

19:00 - 21:00 Welcome Reception
09:00 - 10:25 S3. Routers and Switches
Chair: Aleksandra Smiljanić (Belgrade University, Serbia)

- **Next Generation Resilient Redundant Router**, Hristo Asenov and Chase Cotton (University of Delaware, USA)

- **Developing Layer 3 Switch with 100 Gbps Optical Packet Interface**, Kenji Fujikawa (National Institute of Information and Communications Technology, Japan); Hideaki Furukawa (NICT, Japan); Kazuo Sugai and Takayuki Muranaka (APAXALA Networks Corporation, Japan); Hiroaki Harai (National Institute of Information and Communications Technology, Japan)

- **Experimental Study of a Low-Delay Ethernet Switch for Real Time Networks**, Yoshifumi Hotta and Ayako Inoue (Mitsubishi Electric, Japan); Hiroshi Bessho (Mitsubishi Electric Corporation, Japan); Christophe Mangin (Mitsubishi Electric, France); Ryusuke Kawate (Mitsubishi Electric Corp, Japan)

- **C-GEP: 100Gbit/s Capable, FPGA-based, Reconfigurable Networking Equipment**, Pál Varga (Budapest University of Technology and Economics, Hungary); László Kovács (AITIA International Inc., Hungary); Tamás Tóthfalusi and Péter Orosz (University of Debrecen, Hungary)

10:25 - 10:55 Coffee Break

10:55 - 13:00 S4. Survivability
Chair: János Tapolcai (Budapest University of Technology and Economics, Hungary)

- **[INVITED] Dimensioning Optical Clouds with Shared-Path Shared-Computing (SPSC) Protection**, Carlos Natalino Silva (UFPA & LPRAD, Brazil); Paolo Monti (KTH Royal Institute of Technology, Sweden); Luis Amorino Franca (National Institute of Spatial Research, Brazil); Marija Furdek and Lena Wosinska (KTH Royal Institute of Technology, Sweden); Carlos Renato Francês (Universidade Federal do Para, Brazil); Joao Crisostomo Weyl Costa (UFPA, Brazil)

- **Disaster-Resilient Control Plane Design and Mapping in Software-Defined Networks**, Saadet Savas (University of California- Davis, USA); Massimo Tornatore (Politecnico di Milano & University of California, Davis, Italy); M. Farhan Habib (University of California, Davis, USA); Pulak Chowdhury (University of California, Davis & Ennetix Inc., USA); Biswanath Mukherjee (University of California, Davis, USA)

- **Probabilistic Region Failure-Aware Data Center Network Placement**, Lisheng Ma (Future University Hakodate, Japan); Xiaohong Jiang (Future University-Hakodate, Japan); Achille Pattavina (Politecnico di Milano, Italy); Norio Shiratori (Tohoku University, Japan)
- **A Heuristic Algorithm for Network-Wide Local Unambiguous Node Failure Localization**, László Gyimóthi and János Tapolcai (Budapest University of Technology and Economics, Hungary)

- **On the Dimensioning of Survivable Optical Metro/Core Networks with Dual-Homed Access**, Jose-Luis Izquierdo-Zaragoza (Universidad Politécnica de Cartagena, Spain); Marija Furdek (KTH Royal Institute of Technology, Sweden); Avishek Nag (Trinity College Dublin, Ireland); Paolo Monti and Lena Wosinska (KTH Royal Institute of Technology, Sweden); Pablo Pavon-Marino (Technical University of Cartagena, Spain)

- **Fault-tolerant Cell Dispatching for Onboard Space-Memory-Memory Clos-Network Packet Switches**, Kai Liu, Jian Yan and Jianhua Lu (Tsinghua University, P.R. China)

13:00 - 14:00 Lunch Break (provided)

14:00 - 15:15 Panel: SDN/NFV for 5G and Future Internet
Chair: Kohei Shiomoto (NTT, Japan)
Panelists:
- Andras Csaszar (Ericsson, Hungary)
- Mitchell Gusat (IBM Zurich, Switzerland)
- Hiroaki Harai (NICT, Japan)
- Eiji Oki (UEC, Japan)
- Dimitri Papadimitriou (Alcatel-Lucent, Belgium)
- Pjer Vuckovic (Telenor, Serbia)

15:15 - 15:30 Two-Minute Announcement of Demonstrations
Chair: Balázs Sonkoly (Budapest University of Technology and Economics, Hungary)

- **The System for Large Networks Emulation with OSPF/BGP Routers Based on LXC**, Marek Michalski (Poznan University of Technology & Chair of Communication and Computer Networks, Poland); Kamil Cieślak and Maciej Polak (Poznan University of Technology, Poland)

- **Looking for correlation between SPAM and visits on your websites**, Marek Michalski (Poznan University of Technology & Chair of Communication and Computer Networks, Poland)

- **MagicBox: An Intelligent Caching-Enabled Mobile Router/Server**, Yaning Liu and Zhe Li (JCP-Connect, France); Jean-Charles Point (JCP-Connect S.A.S, France)

- **ERFS: The Fastest x86 OpenFlow Dataplane in the World**, Gergely Pongrácz (Ericsson Research, Hungary)

- **Net2Plan: An Open-Source Multilayer Network Planning Tool and In-Operation Simulator**, Jose-Luis Izquierdo-Zaragoza (Universidad Politécnica de Cartagena, Spain); Pablo Pavon-Marino (Technical University of Cartagena, Spain)
- 100 Gbit/s network monitoring with on-the-fly reconfigurable rules for multi-encapsulated packets, Tamás Tóthfalusi and László Kovács (AIIA International Inc., Hungary); Péter Orosz and Pál Varga (Budapest University of Technology and Economics, Hungary)

- Network initiated Wi-Fi - LTE handovers with Multipath TCP, Ákos Ladányi (Budapest University of Technology and Economics, Hungary); Péter Olaszi (AIIA International, Inc., Hungary); Pál Varga and Tibor Cinkler (Budapest University of Technology and Economics, Hungary)

15:30 - 16:15 Demonstrations with Coffee Break

16:15 - 18:00 Fixed Mobile Convergence: Paving the road towards 5G
Chair: Annie Gravey (Telecom Bretagne, France)

- On Connection Control and Traffic Optimisation in FMC Networks, Younes Khadraoui and Xavier Lagrange (Institut Mines Telecom / Telecom Bretagne & IRISA, France); Stefan Höst (Lund University, Sweden); Thomas Monath (Deutsche Telekom AG, Germany)

- MPTCP Solution for Seamless Local SIPTO Mobility, Souheir Eido, Pratibha Mitharwal and Annie Gravey (Institut Mines Telecom - Telecom Bretagne, France); Christophe Lohr (Telecom Bretagne, France)

- Control Theory Based Interface Selection Mechanism in Fixed-Mobile Converged Network, Yue LI (University of Rennes 1 & Orange Labs, France); Yassine Hadjadj-Aoul (University of Rennes 1, France); Philippe Bertin (Orange Labs, France); Gerardo Rubino (INRIA, France)

- A Modern Approach to Fixed Mobile Convergence on the Universal Access Gateway, Anthony Magee (ADVA Optical Networking, United Kingdom)

- Power saving tradeoffs in a multi-operator scenario, Ákos Ladányi, Tibor Cinkler and Attila Mitenkov (Budapest University of Technology and Economics, Hungary); Dirk Breuer (Deutsche Telekom T-Labs, Germany)

18:30 - 20:30 Budapest Sightseeing
09:00 - 10:45 S5. Measurement, TCP, and Scheduling
Chair: Hiroaki Harai (National Institute of Information and Communications Technology, Japan)

- SONAR: A Scalable Stream-oriented System for Real-time Network Traffic Measurements, Jun Liu, Dr., Yutan Du and Jie Yang (Beijing University of Posts and Telecommunications, P.R. China); Nirwan Ansari (NJIT, USA)

- Investigating Structure of Modern Web Traffic, Noriaki Kamiyama (Osaka University & NTT Network Technology Laboratories, Japan); Yunsuke Nakano and Kobei Shiomoto (NTT, Japan); Go Hasegawa, Masayuki Murata and Hideo Miyahara (Osaka University, Japan)

- On Packet Scheduling of MPTCP for Collaborative Bandwidth Sharing, Kun-chan Lan (National Cheng Kung University, Taiwan)

- Global Synchronization Protection for Bandwidth Sharing TCP Flows in High-Speed Links, Wolfram Lautenschlaeger (Alcatel-Lucent, Germany); Andrea Francini (Bell Labs, Alcatel-Lucent, USA)

- LAWIN: a Latency-Aware InterNet Architecture for Latency Support on Best-Effort Networks, Katsushi Kobayashi (University of Tokyo, Japan)

10:45 - 11:15 Coffee Break

11:15 - 13:00 S6. Switches and Virtualization
Chair: Kobei Shiomoto (NTT, Japan)

- [INVITED] Universal Node: Towards a High-Performance NFV Environment, Gergely Pongrácz (Ericsson Research, Hungary)

- Stateful OpenFlow: Hardware Proof of Concept, Salvatore Pontarelli (CNIT/Universita di Roma Tor Vergata, Italy); Marco Bonola and Giuseppe Bianchi (University of Rome "Tor Vergata", Italy); Antonio Capone (Politecnico di Milano, Italy); Carmelo Cascone (Politecnico di Milano & Ecole Polytechnique de Montreal, Italy)

- An Efficient Method to Manage Flow Lookup Tables Under Registration Frequency Constraints, Satoshi Nishiyama (NTT, Japan); Takeshi Osaka (Nippon Telegraph and Telephone corp. & Network Service Systems Lab., Japan); Ichiro Kudo (NTT, Japan)

- Arbitrary Packet Matching in OpenFlow, Simon Jonet, Richard Cziva and Dimitrios P Pezaros (University of Glasgow, United Kingdom)

- Performance Optimization of Load Imbalanced Workloads in Large Scale Dragonfly Systems, Bogdan Prisacari (IBM Research - Zurich & ETH Zurich, Switzerland); German Rodriguez and Cyrail Minkenberg (IBM Research - Zurich, Switzerland); Marina Garcia, Enrique Vallejo and Ramon Beivide (University of Cantabria, Spain)
13:00 - 14:00 Lunch Break (provided)

14:00 - 16:05 S7. Optical Metro/Core

Chair: Szilard Zsigmond (Alcatel-Lucent, USA)

- [INVITED] Burst Optical Signal Transmission on Optical Packet and Circuit Integrated Network, Hideaki Furukawa (NICT, Japan)
- The Strict-Sense Nonblocking Elastic Optical Switch, Wojciech Kabacinski (Poznan University of Technology, Poland); Marek Michalski (Poznan University of Technology & Chair of Communication and Computer Networks, Poland); Mustafa Abdulsahib (Poznan University Of Technology, Poland)
- Optimizing Link Spectrum Occupancy in Elastic Optical Networks, Jaume Comellas, Marc Ruiz and Gabriel Junyent (Universitat Politècnica de Catalunya, Spain)
- P-Cycle Design Without Candidate Cycle Enumeration in Mixed-Line-Rate Optical Networks, Min JU (Shanghai Jiao Tong University & University of Avignon and Pays de Vaucluse, P.R. China); Fen Zhou (University of Avignon, France); Zuqing Zhu (University of Science and Technology of China, P.R. China); Shilin Xiao (Shanghai Jiao Tong University, P.R. China)
- Optimal Regenerator Placement for Path Protection in Impairment-Aware WDM Networks, Ripudamanlall Ramlall, Quazi R Rahman, Subir Bandyopadhyay and Yash Anje (University of Windsor, Canada)
- The Perfect Match: Optical Bypass and SDN Partitioning, Marcel Caria (Technische Universität Braunschweig, Germany); Admela Jukan (Technische Universität Carolo-Wilhelmina zu Braunschweig, Germany)

16:05 - 16:35 Coffee Break


Chair: Martin Maier (Institut National de la Recherche Scientifique (INRS), Canada)

- [INVITED] Topology Analysis of Multi-Hop Wireless Networks, Andras Farago (The University of Texas at Dallas, USA)
- Combinatorial Error Detection in Linear Encoders, Éva Hosszu (MTA-BME Future Internet Research Group, High Speed Networks Laboratory, Budapest University of Techn, Hungary); Christina Fragouli (UCLA, USA); János Tapolcai (MTA-BME Future Internet Research Group, High Speed Networks Laboratory, Budapest University of Techn, Hungary)
- ICN Based Shared Caching in Future Converged Fixed and Mobile Network, Zhe Li (JCP-Connect, France); Jean-Charles Point (JCP-Consult, France); Selami Çiftçi and Onur Eker (Argela Technologies, Turkey); Ginlia Mauri, Marco Savi and Giacomo Verticale (Politecnico di Milano, Italy)
- Blind Void Filling in LR-EPONs: How Efficient It Can Be? Amr Elrasad and Basem Shihada (KAUST, Saudi Arabia)

19:00 - 22:00 Conference Dinner
Saturday, July 4

09:00 - 12:30 Tutorial 2
(Parallel; 10:30-11:00 Coffee Break)

- **Switching and Routing for Spatially and Spectrally Flexible Elastic Optical Networking**, I Tomkos (AIT Greece, Greece)

- **Fixed-mobile Convergence: Infrastructure, Functionality, Services -- The Combo Perspective**, Péter Olaszi (AITIA International, Inc., Hungary); Dirk Breuer (Deutsche Telekom Laboratories, Germany); Tibor Cinkler (Budapest University of Technology and Economics, Hungary); Stéphane Gosselin (Orange Labs, France); Annie Gravey (Institut Mines Telecom - Telecom Bretagne, France); Ali Hamidian (Ericsson, Sweden); Stefan Höst (Lund University, Sweden); Tabar Mamouni (Orange Labs, France); Stephan Pachnicke (ADVA Optical Networking SE, Germany); Jose Alfonso Torrijos (Telefónica I+D, Spain)