

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 Politécnic 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 Minkenbergh (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 Shihada (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**, *Elabe Soltanagbaei 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 Bloq (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

Thursday, July 2

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 (ALAXALA 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 (AITLA 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: Kobei 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 SAS, 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 (*AITLA 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 Olszgi (*AITLA 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**, Soubeir 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 Mitsenkov (*Budapest University of Technology and Economics, Hungary*); Dirk Breuer (*Deutsche Telekom T-Labs, Germany*)

18:30 - 20:30 Budapest Sightseeing

Friday, July 3

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); Nirvan Ansari (NJIT, USA)*
- **Investigating Structure of Modern Web Traffic**, *Noriaki Kamiyama (Osaka University & NTT Network Technology Laboratories, Japan); Yuusuke 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**, *Savatore 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 Jouet, 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 Cyriel 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 Abdulsabib (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 Aneja (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

16:35 - 18:20 S8. Mobile and Access

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); Giulia 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 Olszji (AITLA 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 (Telefonica I+D, Spain)*