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# Information and Communication Technologies

18th EUNICE/IFIP WG 6.2, 6.6.  
International Conference, EUNICE 2012  
Budapest, Hungary, August 29-31, 2012  
Proceedings

Volume Editors

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# Preface

It was a great pleasure for me and a great honor for the Department of Telecommunications and Media Informatics of the Budapest University of Technology and Economics to host the 18th EUNICE Conference on Information and Communication Technologies in our capital, Budapest. The aim of the annual EUNICE conferences is to provide a forum that brings together young scientists and researchers from academia, industry, and government organizations to meet and to discuss their recent achievements. The single-track conference structure of EUNICE and the participants from the EUNICE-Forum's member organizations demonstrably ensure stimulating discussions after the talks and during the poster sessions. For a couple of years now EUNICE conferences have found their ways to attract quality papers, and hence to publish their proceedings in Springer's LNCS series. The goal of the 18th EUNICE Conference, besides maintaining quality, was to extend submissions and to organize tutorials.

At the very beginning the EUNICE-Forum was launched as a network for European universities and companies "to improve in a permanent manner the quality and relevance of their teaching and research in the field of information and communication technologies"<sup>1</sup>. For many of the early years, the EUNICE-Forum organized summer schools and workshops, which during the years transformed into a well-recognized conference series. Now, however, according to the decision of the EUNICE General Assembly, one of our goals for 2012 was to re-animate EUNICE's tutorials for the education of young researchers. Therefore, in the 18th EUNICE Conference, we introduce three tutorials with speakers from industry and academia besides the technical program: (a) on the evolution of mobile network architectures, (b) on OpenFlow standards and the Mininet environment, and (c) on modeling techniques for the performance analysis of telecommunication networks.

Regarding the submissions and the technical program, EUNICE 2012 received 48 submitted papers. All of these papers were evaluated by at least three reviewers from the Technical Program Committee and/or external reviewers. According to the evaluations the top 50%, i.e., 23 papers, were selected for oral presentations. In addition 15 papers were selected for poster presentations. All of these papers appear in this proceedings volume.

On behalf of the Hungarian organizers and the Department of Telecommunications and Media Informatics of the Budapest University of Technology and Economics, I would like to express my grateful thanks to all persons having actively participated in the organization of the 18th EUNICE Conference, in particular to the Chairs and members of the Technical Program Committee. I

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<sup>1</sup> From Eunice Network Member's Charter at <http://www.eunice-forum.org/>

am grateful to IFIP WG 6.2 and WG 6.6 for their technical co-sponsorship, and to our sponsors, Ericsson Hungary Ltd. and BME-Infokom Innovator Ltd. I am equally grateful to all of the authors for having prepared high-quality papers, and to the reviewers for making it possible to choose the best contributions. Last, but not least, I would like to thank the speakers and presenters of the tutorials and demonstrations for accepting our invitations.

June 2012

Robert Szabo

# Organization

EUNICE 2012 was organized by the Department of Telecommunications and Media Informatics (TMIT) of the Budapest University of Technology and Economics (BME).

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## Invited Talk

- *Milestone Inventions and Lessons in IT from the Past 100 Years*  
László Kutor (Óbuda University)

## Tutorials

- *The Evolution of Mobile Network Architectures*  
György Miklós (Ericsson)
- *OpenFlow:*
  - *Sharing Networking Research Results with OpenFlow and Mininet in a few Easy Steps*  
Felicián Németh (BME)
  - *Overview of OpenFlow Standardization and Introduction to the Recent Protocol Features*  
Zoltán Lajos Kis (Ericsson)
- *Recent Markovian Modeling Techniques for the Performance Analysis of Telecommunication Networks*  
Gábor Horváth (BME and MTA TKI)

## Demonstrations

- *Integrated OpenFlow Virtualization Framework with Flexible Data, Control and Management Functions*  
Balázs Sonkoly, András Gulyás (BME), János Czentye (BME), Krisztián Kurucz (BME), Gábor Vaszkun (BME), András Kern (Ericsson), Dávid Jocha (Ericsson) and Attila Takács (Ericsson)
- *Experimental Forwarding Mechanisms in OpenFlow by Bloom Filters, Greedy Routing and Network Coding*  
Felician Németh (BME), Balázs Sonkoly (BME) and András Gulyás (BME)
- *Floating BRAS: Example of How SDN Enables Virtualized Service Nodes Over Access/Aggregation Network*  
Attila Takács (Ericsson), András Kern (Ericsson) and Dávid Jocha (Ericsson)
- *Virtual Collaboration Arena (VirCA)*  
Péter Galambos (SZTAKI) and Péter Baranyi (BME)



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- International Federation for Information Processing (IFIP):
  - WG 6.2: Network and Internetwork Architectures and
  - WG 6.6: Management of Networks and Distributed Systems.



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- Department of Telecommunications and Media Informatics of the Budapest University of Technology and Economics (<http://www.tmit.bme.hu>)



# Table of Contents

## Radio Communications

A Testbed Analysis of the Effects of IEEE 802.11s Power Save on Mesh Link Performance .....	1
<i>Marco Porsch and Thomas Bauschert</i>	
Path Selection and Adaptive Selection of Smart Antenna Transmission Schemes in Multi-hop Wireless Networks .....	12
<i>Muhammad Irfan Rafique and Thomas Bauschert</i>	
Receiver-Initiated vs. Short-Preamble Burst MAC Approaches for Multi-channel Wireless Sensor Networks .....	23
<i>Cristina Cano, Boris Bellalta, and Miquel Oliver</i>	
White Spaces in UHF Band: Catalonia Case Study and Impact of the Digital Dividend .....	33
<i>Albert Domingo, Boris Bellalta, and Miquel Oliver</i>	

## Security

A Framework for Security Context Migration in a Firewall Secured Virtual Machine Environment .....	41
<i>Zahra Tavakoli, Sebastian Meier, and Alexander Vensmer</i>	
Enhancing Collaborative Intrusion Detection Methods Using a Kademlia Overlay Network .....	52
<i>Zoltán Czirkos and Gábor Hosszú</i>	
Flow-Based Security Issue Detection in Building Automation and Control Networks .....	64
<i>Pavel Čeleda, Radek Krejčí, and Vojtěch Krmíček</i>	
Hash-Based Mutual Authentication Protocol for Low-Cost RFID Systems .....	76
<i>Győző Gódor and Sándor Imre</i>	
The Impact of IPv6 on Penetration Testing .....	88
<i>Christiaan Ottow, Frank van Vliet, Pieter-Tjerk de Boer, and Aiko Pras</i>	

## Management

Linking Telecom Service High-Level Abstract Models to Simulators Based on Model Transformations: The IMS Case Study . . . . .	100
<i>Iyas Alloush, Vanea Chiprianov, Yvon Kermarrec, and Siegfried Rouvrais</i>	
Network Migration Optimization Using Genetic Algorithms . . . . .	112
<i>Stefan Türk, Ying Liu, Rico Radeke, and Ralf Lehnert</i>	
OWL-Based Node Capability Parameter Configuration . . . . .	124
<i>Patcharee Thongtra, Finn Arve Aagesen, and Kornschnok Dittawit</i>	
Techno-Economic Comparison of Next-Generation Access Networks for the French Market . . . . .	136
<i>Konrad Walczyk and Annie Gravey</i>	
The Design of a Single Funding Point Charging Architecture . . . . .	148
<i>Christos Tsiaras, Martin Waldburger, Guilherme Sperb Machado, Andrei Vancea, and Burkhard Stiller</i>	

## Protocols and Performance

A Two Layer Guaranteed and Sustained Rate Based Scheduler for IEEE 802.16-2009 Based WiMAX Networks . . . . .	161
<i>Volker Richter, Rico Radeke, and Ralf Lehnert</i>	
Implementation and Evaluation of Coupled Congestion Control for Multipath TCP . . . . .	173
<i>Régel González Usach and Mirja Kühlewind</i>	
Improving Fairness for Adaptive HTTP Video Streaming . . . . .	183
<i>Bjørn J. Villa, Poul E. Heegaard, and Anders Insteffjord</i>	
Prototype of High Performance Scalable Advertising Server with Local Memory Storage and Centralised Processing . . . . .	194
<i>Jakub Marszałkowski</i>	
Responsible Source Multicasting . . . . .	204
<i>Mihály Orosz and Gábor Hosszú</i>	

## Algorithms, Models and Simulations

A Model for System Resources in Flexible Time-Triggered Middleware Architectures . . . . .	215
<i>Adrian Noguero, Isidro Calvo, Luis Almeida, and Unai Gangoiti</i>	

Modeling and Analysis of the Survivability of an Infrastructure-Based Wireless Network . . . . .	227
<i>Lang Xie, Poul E. Heegaard, and Yuming Jiang</i>	
Private Quantum Coding for Quantum Relay Networks . . . . .	239
<i>Laszlo Gyongyosi and Sándor Imre</i>	
Target Surrounding Solution for Swarm Robots . . . . .	251
<i>László Blázovics, Tamás Lukovszki, and Bertalan Forstner</i>	

## Poster Papers

A Split Connection TCP Proxy in LTE Networks . . . . .	263
<i>Viktor Farkas, Balázs Héder, and Szabolcs Nováczki</i>	
Adaptive Routing in Wireless Sensor Networks for Fire Fighting . . . . .	275
<i>Chunlei An, Yunqi Luo, and Andreas Timm-Giel</i>	
Automatic Handover Decision in Content Centric Networking . . . . .	286
<i>Yunqi Luo, Chunlei An, Jonas Eymann, and Andreas Timm-Giel</i>	
Autonomous Sensor Network Architecture Model . . . . .	298
<i>András Tóth and Ferenc Vajda</i>	
Efficient Multihop Broadcast with Distributed Protocol Evolution . . . . .	309
<i>Bernát Wiandt, Vilmos Simon, and Endre Sándor Varga</i>	
Finding Typical Internet User Behaviors . . . . .	321
<i>Péter Megyesi and Sándor Molnár</i>	
Interoperability Description of Web Services Based Application Servers . . . . .	328
<i>Paweł L. Kaczmarek</i>	
Investigation of Quality of Experience for 3D Video in Wireless Network Environment . . . . .	340
<i>Ivett Kulik and Tuan Anh Trinh</i>	
Investigation of WLAN Access Point Placement for Indoor Positioning . . . . .	350
<i>Árpád Huszák, Győző Gódor, and Károly Farkas</i>	
Improving the Efficiency of HTTP Caching by Hash Based Resource Identifiers . . . . .	362
<i>Chris Drechsler and Thomas Bauschert</i>	
Nonmonotonicity in Trust Management . . . . .	372
<i>Wojciech Pikułski</i>	

Radio Propagation Modeling on 433 MHz . . . . .	384
<i>Ákos Milánkovich, Károly Lendvai, Sándor Imre, and Sándor Szabó</i>	
Semantic Intelligent Space for Ambient Assisted Living . . . . .	396
<i>István Marcell Fülöp, Péter Galambos, and Péter Baranyi</i>	
Simulating Network Coding for Accelerating Tit-for-Tat in Peer-to-Peer Content Sharing . . . . .	408
<i>Ákos Ludányi, Tamás Lukovszki, and Péter Ekler</i>	
The Costs of Web Advertisements While Mobile Browsing . . . . .	412
<i>Jeffrey van den Brande and Aiko Pras</i>	
<b>Author Index . . . . .</b>	<b>423</b>