

# SoftCOM 2014 - CONTENTS

GENERAL CHAIR MESSAGE	2
TECHNICAL PROGRAM CHAIRS MESSAGE	2
<i>SoftCOM 2014</i> COMMITTEES	3
<i>SoftCOM 2014</i> PROGRAM OUTLINE	4
KEYNOTE/INVITED SPEAKERS	5
TECHNICAL PROGRAM	7
GENERAL CONFERENCE	7
S1: NETWORK VIRTUALIZATION AND CLOUD TEHNOLOGIES	7
P1: POSTER SESSION	7
S2: SIGNAL PROCESING AND CODING I	7
S3: NETWORK OPERATIONS AND PROTOCOLS	7
S4: MOBILE AND WIRELESS COMMUNICATIONS	7
S5: TELECOMUNICATION SERVICES AND QOS	8
S6: COMMUNICATIONS SOFTWARE I	8
S7: COMMUNICATIONS SOFTWARE II	8
S8: SIGNAL PROCESSING AND CODING II	8
SYMPOSIUM ON ENVIRONMENTAL ELECTORMAGNETIC COMPATIBILITY	9
SPECIAL SESSIONS	10
SS1: SPECIAL SESSION ON GREEN NETWORKING	10
SS2: SPECIAL SESSION ON QOS IN WIRED AND WIRELESS NETWORKS	10
SS3: SPECIAL SESSION ON RFID TECHNOLOGIES & THE INTERNET OF THINGS	10
SS4: SPECIAL SESSION ON AD-HOC AND SENSOR NETWORKS	10
WORKSHOP ON REGULATORY CHALLENGES IN THE ELECTRONICS COMMUNICATIONS MARKET	11
TIMETABLE A: TECHNICAL PROGRAM	12
TIMETABLE B: TUTORIALS, WORKSHOPS, BUSINESS FORUM	13
WORKSHOP ON INTEROPERABILITY AND OPEN-SOURCE SOLUTIONS FOR THE INTERNET OF THINGS	14
PROFESSIONAL PROGRAM: WORKSHOP ON ICT	15
TUTORIALS	16
BUSINESS FORUM	20
WORKSHOP ON SOFTWARE ENGINEERING IN PRACTICE	20
WORKSHOP ON INNOVATION IN ICT	21
ERICSSON NIKOLA TESLA SUMMER CAMP 2014 WORKSHOP	22
HOTEL RADISSON BLU RESORT: FLOOR PLAN	23
GENERAL INFORMATION	24

## GENERAL CHAIR MESSAGE



*Dear participants of the SoftCOM 2014 conference, it is my pleasure to welcome you in the capacity of a general chair. I am very glad to have an opportunity to take part in the organization of an international conference that gathers researchers and professionals from academia and industry to share experiences and new ideas in such a dynamic area as Information and Communication Technology.*

*We are together building a Networked Society where every person and every industry is empowered to reach their full potential. In the Networked Society anything that can benefit from a connection will be connected, enabling people to collaborate, innovate, learn, participate in ways we never thought possible, and opening ground for new discoveries.*

*A world that is connected in real time will place many new requirements on us while opening up opportunities beyond our imagination. It is about new ways for us to collaborate, share and get informed. It's about innovative ways of doing business and shaping the future together, as well as about a renewed approach to global challenges such as education, healthcare, climate change and our use of natural resources.*

*The 22nd International Conference on Software, Telecommunications and Computer Networks (SoftCOM 2014), co-sponsored by the IEEE Communications Society, will be held in the beautiful city of Split, located on the Croatian Adriatic coast. It will be my pleasure to meet you at the conference in the pleasant Mediterranean ambience*

*Welcome!*

*Siniša Krajnović, PhD  
Vice President, Ericsson AB*

## TEHNICAL PROGRAM CHAIRS MESSAGE

*The 22nd Conference on Software, Telecommunications and Computer Networks (SoftCOM 2014) will be held in attractive ambience of the Radisson Blu Resort hotel, Split, September 17 to 19.*

*Researchers and experts from industry, research institutes and universities from 30 countries all around the world have submitted in total 159 papers for presentation at SoftCOM 2014. Submitted papers have been reviewed by more than 200 scientists from universities, institutes and ICT companies. All accepted papers have been carefully selected based on their contribution, relevance, conceptual clearness and overall quality. 47% of submitted papers have been recommended for presentation within the technical program.*

*The technical conference program features nine general conference sessions, one symposium, one workshop and four special sessions. The Symposium on Environmental Electromagnetic Compatibility has been organized by researchers from University of Split. The special sessions are dedicated to hot topics including: RFID Technologies and the Internet of Things, Ad Hoc and Sensor Networks, Green Networking, and QoS in Wired and Wireless Networks. The 4th Workshop on Regulatory Challenges in the Electronics Communications Market is organized in collaboration with Croatian Regulatory Authority for Network Industries and the Faculty of electrical engineering and computing in Zagreb.*

*In conjunction with the SoftCOM 2014 conference the Workshop on Interoperability and Open-Source Solutions for the Internet of Things has been organized by the research group from the OpenIoT project with support from the European Commission under the 7th framework programme.*

*Besides that a Business Forum will be organized featuring invited talks, Industry panel and workshops with participation of managers, experts, and institution representatives.*

*On behalf of the Program committee we would like to thank and credit the authors for their excellent contributions. Particular thanks to the reviewers for their great job as well as to the IEEE Communications Society (ComSoc) Technical Committee of Communication Software for the support.*

*Program Committee Co-chairs  
Nikola Rozic, Dinko Begusic*

# SoftCOM 2014 COMMITTEES

## TECHNICAL PROGRAM COMMITTEE

**Dinko Begusic**, University of Split, Croatia (Co - Chair)

**Nikola Rozic**, University of Split, Croatia (Co - Chair)

**Sergio Benedetto**, Politecnico di Torino, Italy

**Tony Bogovic**, Telecordia Technologies, USA

**Antun Caric**, HAKOM, Croatia

**Shi Cheng**, West Virginia University, US

**Franco Chiaraluce**, *Polytechnic University of Marche, Italy*

**Mario De Blasi**, University of Lecce, Italy

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**Roch Glitho**, Ericsson Research, Canada

**Darko Huljević**, Ericsson Nikola Tesla, Croatia

**Gorazd Kandus**, Jozef Stefan Institute, Slovenia

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**Pascal Lorenz**, Univ. de Haute Alsace, France

**Josip Lorincz**, University of Split, Croatia

**Ignac Lovrek**, University of Zagreb, Croatia

**Gottfried Luderer**, Arizona State University, USA

**Andrej Ljolje**, AT&T, USA

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**Dean Marusic**, Ericsson - Nikola Tesla, Croatia

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**Naohisa Ohta**, Sony Corporation, Japan

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**Luigi Patrono**, University of Salento, Italy

**Nikola Pavesic**, University of Ljubljana, Slovenia

**Dragan Poljak**, University of Split, Croatia

**Jari Porras**, Lappeenranta University of Technology, Finland

**Josko Radic**, University of Split, Croatia

**Joel Rodrigues**, University of Beira Interior, Portugal

**Vesna Roje**, University of Split, Croatia

**Mladen Russo**, University of Split, Croatia

**Matko Saric**, University of Split, Croatia

**Branko Soucek**, Iris, Italy

**Maja Stella**, University of Split, Croatia

**Krzysztof Wesolowski**, University of Poznan, Poland

**Heather Yu**, Telecordia Technologies, USA

**Sofiane Hamrioui**, University Mouloud Mammeri, Tizi Ouzou, Algeria

*SoftCOM 2014* General Secretary

**Petar Šolić**, University of Split, [softcom@fesb.hr](mailto:softcom@fesb.hr)

## UNIVERSITY OF SPLIT

**FACULTY OF ELECTRICAL ENGINEERING,  
MECHANICAL ENGINEERING AND NAVAL  
ARCHITECTURE - FESB SPLIT**

**COMMUNICATIONS AND INFORMATION  
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# *SoftCOM 2014 PROGRAM OUTLINE*

## **Wednesday, September 17, 2014** (location: **Hotel Radisson Blu**)

08.00 - 12.30 Registration

09.00 - 10.30 Technical program, Professional program, Business forum

10.30 - 11.30 Coffee break

11.30 - 13.00 Opening Ceremony, Keynote speech

### **Conference luncheon**

14.30 - 18.30 Registration

15.00 - 15.30 Invited talk

15.30 - 17.00 Technical program, Professional program, Business forum

17.00 - 17.30 Coffee break

17.30 - 20.00 Guided Tour in Split

20.00 - 21.30 Welcome Party in Diocletian Palace

## **Thursday, September 18, 2014** (location: **Hotel Radisson Blu**)

08.00 - 11.00 Registration

09.00 - 10.30 Technical program, Professional program, Business forum

10.30 - 11.00 Coffee break

11.00 - 12:30 Technical program, Professional program, Business forum

12.30 - 13:00 Invited talk session

### **Lunch time**

15.00 - 17.30 Registration

15.00 - 16.30 Technical program, Professional program, Business forum

16.30 - 17.00 Coffee break

17.00 - 18.30 Technical program, Professional program, Business forum

## **Friday, September 19, 2014** (location: **Hotel Radisson Blu**)

8.00 - 10:30 Registration

9:00 - 10:30 Technical program, Professional program, Business forum

10.30 - 11.00 Coffee break

11.00 - 18.30 Conference Trip and Lunch

**Sandor Albrecht, PhD***Director, IP and Transport Ericsson Research***High performance and programmable packet processing and the role of hardware acceleration**

Today, rigid network control limits the flexibility of service creation. The infrastructure required to transport data from a storage center to an end user is presently fragmented and inflexible. Reconfiguring any part of the network often requires programming physical hardware on location, making upgrades costly and time consuming. A response to this problem is the emergence of Software Defined Networking (SDN), which, in simple terms, shifts control of a network from hardware to software. This virtualization allows for more flexible reprogramming of network elements, increasing speed and the potential for innovation. This invited talk addresses challenges and presents initial results related to the trade-off of dataplane programmability vs. high performance. Initial results are presented on how use-case influences the performance of various dataplane chips, then early results are presented on what a software based packet forwarding engine could be capable of on generic purpose hardware together with a bottleneck analysis.

**Sandor Albrecht** received his M.Sc.E.E. and Ph.D. from Budapest University of Technology and Economics in 1993 and 2004, respectively. He also received a M.A.Sc. from the University of British Columbia, Vancouver, BC, Canada in 1998 and a MBA from Central European University Business School, Budapest, Hungary in 2009. Between 1993 and 1998, he participated in several digital signal processing and radar imaging related research and development project as a researcher and software developer in Hungary and Canada. He joined Ericsson Research and Development in Hungary in 1999, where he worked as a manager leading software development projects and departments. He was responsible for four different product development areas, such as SmartEdge (Multi-Service Edge Router), Mobile Media Gateway, IMS Gateway and Telephony Softswitch Gateway Controller. He moved to Stockholm in 2010 and joined the IP and Broadband Design Unit. His main responsibility was to define and manage the Ericsson wide technology strategy for IP and packet transport evolution. Since March 2013, he is the Director of IP and Transport at Ericsson Research. His research area covers optical HW research, optical networking, small cell transport, SDN, network abstraction and service programmability, high performance and programmable data plane and information centric networking.

**Franco Chiaraluca, PhD***Department of Information Engineering Polytechnic University of Marche, Ancona, Italy***Error correcting codes in telecommand and telemetry for European Space Agency missions: an overview and new perspectives**

Error correcting codes have always played a prominent role in the definition of secure and reliable space missions. Both telecommand (TC) and telemetry (TM) have benefitted by the introduction of suitable co/decoding schemes, ranging from classic BCH, Reed-Solomon and convolutional codes to more recent state-of-the-art codes based on soft-decision and iterative decoding. As a matter of fact, space TM was one of the first scenarios to propose implementation of the concept of turbo coding that, since twenty years, has traced a new paradigm in the field of error correction. At present the scene is dominated by low-density parity-check (LDPC) codes and these are being progressively included in the design of future missions, in either deep space or near Earth scenarios, for the advantage they offer in terms of increased data rate and reduced signal-to-noise ratios. The European Space Agency (ESA) is very active in the field and continuously gives relevant contributions to the standardization activities within the Consultative Committee for Space Data Systems (CCSDS). The talk will provide an overview of the error correcting codes included in the current TC and TM recommendations and will discuss the new solutions recently proposed in view of most demanding missions, also able to operate in hostile environments like, for example, in the presence of jamming.

**Franco Chiaraluca** is an Associate Professor at the Department of Information Engineering of the Polytechnic University of Marche, Ancona, Italy, where he is in charge of several courses in the area of Telecommunications. Since 2007 to 2008 he was the vice-director of the Department of Electronics, Artificial Intelligence and Telecommunications of the same university. Since 2008 he is a member of the Committee of the PhD school in "Engineering Science" and coordinator of some PhD Courses. His research interests are focused on error correcting codes, physical layer security and cryptography. He is co-author of more than 250 scientific papers, 2 books and co-inventor of 2 patents on code-based cryptography. Since many years, he cooperates with the European Space Agency (ESA) on research activities concerning error correcting codes for space applications. He also contributes, on behalf of ESA, to the standardization issues promoted by the Consultative Committee for Space Data Systems (CCSDS).

**Luigi Rizzo, PhD***Università di Pisa, Italy***High speed software networking and virtual machines**

This talk will give a survey of solutions -- and especially, discuss the underlying design principles -- that we developed in recent years to achieve extremely high packet processing rates in commodity operating systems, for both bare metal and virtual machines. Our NETMAP framework, opensource and BSD licensed, supports multiple operating systems and network devices (NICs) without relying on any special hardware feature. By leveraging batching, architectural simplifications and cost amortisation, NETMAP and its companion software switch VALE can process minimum-size frames from user space at over 45 Mpps on both NICs (up to 40 Gbit/s) and virtual ports. A libpcap library provides binary compatibility with existing software. Virtual machine support based on netmap has been added to multiple hypervisors (Qemu, Xen, bhyve) providing guests with packet rates comparable to those available on bare metal.

*Luigi Rizzo is a Professor of Computer Engineering at the Università di Pisa, Italy, doing research on computer networks and operating systems. He has done some highly cited work on multicast congestion control, FEC-based reliable multicast, network emulation, packet scheduling, fast network I/O, virtualization. Much of his work has been implemented and deployed in popular operating systems and applications, and widely used by the research community. His contributions include the popular dummynet network emulator; one of the first publicly available erasure code for reliable multicast; the QFQ packet scheduler; and the netmap framework. Luigi has been a visitor at several industrial and research institutions, including ICSI (UC Berkeley), Intel Research Cambridge (UK), Intel Research Berkeley, and Google Mountain View. He has been General Chair for SIGCOMM 2006, TPC Co-Chair for SIGCOMM 2009 and CoNEXT 2014, and TPC member/reviewer for many networking conferences and journals.*

# TEHNIICAL PROGRAM: GENERAL CONFERENCE

**Wednesday, September 17, 9:00-10:30,**  
(KORČULA)

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## **S1: NETWORK VIRTUALIZATION AND CLOUD TECHNOLOGIES**

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*Chair: Mario Čagalj, University of Split, Croatia*

### **Workload displacement and mobility in an omnipresent cloud topology**

William Tärneberg, Tärneberg (Lund University, Sweden) and Maria Kihl (Lund University, Sweden)

### **Extending Network-virtualization Platforms by using a Specialized Packet Header and Node Plug-ins**

Yasusi Kanada (Hitachi, Ltd., Japan)

### **Fuzzy Modeling to Predict Performance of Collocated Virtual Machines in Private clouds**

Roobeh Matloobi (The University of Sydney, Australia), Javid Taheri (The University of Sydney, Australia) and Albert Zomaya (The University of Sydney, Australia)

**Wednesday, September 17, 15:30-17:30, (UPPER FLOOR LOBBY)**

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## **P1: POSTER SESSION**

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### **Transmission Characteristic of Electromagnetic Wave from the Earth into the Air**

Sangmu Lee (Electronics and Telecommunications Research Institute, Korea), Dongho Kim (Sejong University, Korea) and Pyung-Dong Cho (ETRI, Korea)

### **Demo: Dependable and Scalable Multi-Radio Networked Embedded System**

Hussein Khaleel (Istituto Superiore Mario Boella (ISMB), Italy), Prabhakaran Kasinathan (Istituto Superiore Mario Boella (ISMB), Italy) and Claudio Pastrone (Istituto Superiore Mario Boella, Italy)

### **Urban Crowd Sensing Demonstrator: Sense the Zagreb Air**

Aleksandar Antonic (University of Zagreb, Croatia), Vedran Bilas (University of Zagreb, Croatia), Martina Marjanovic (University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia), Maja Matijasevic (University of Zagreb, Croatia), Dinko Oletic (University of Zagreb & Faculty of Electrical Engineering and Computing, Croatia), Marko Pavelic (University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia), Ivana Podnar Zarko (University of Zagreb, Croatia), Kresimir Pripuzic (University of Zagreb, Croatia) and Lea Skorin-Kapov (University of Zagreb, Croatia)

### **Software Defect Prediction with Bug-Code Analyzer - a Data Collection Tool Demo**

Goran Mause (University of Rijeka & Faculty of Engineering, Croatia), Tihana Galinac Grbac (University of Rijeka & Faculty of Engineering, Croatia) and Bojana Dalbelo Bašić (University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia)

**Thursday, September 18, 9:00-10:30, (BRAČ)**

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## **S2: SIGNAL PROCESSING AND CODING I**

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*Chair: Franco Chiaraluze, Polytechnic University of Marche, Ancona, Italy*

### **On the Comparative Performance Analysis of GFDM and SC-FDMA Systems Under Multiple CFO Synchronization Using Null Sub-carriers**

Mustafa Anil Reşat (Gazi University, Turkey) and Ozgur Ertug (Gazi University, Turkey)

### **Sparse Generator Matrices for Some Families of Quasi-Cyclic Low-Density Parity-Check Codes**

Marco Baldi (Università Politecnica delle Marche, Italy), Giovanni Cancellieri (Università Politecnica delle Marche, Italy) and Franco Chiaraluze (Università Politecnica delle Marche, Italy)

### **Blind Channel Estimation and Interference Management in MIMO/OFDM Uplink Communication**

Rabah Maoudj (CNAM, France), Iness Ahriz (CNAM, France) and Michel Terré (CNAM, France)

### **Performance of Macrodiversity System with Two EGC Diversity Receivers in the Presence of Shadowed Multipath Fading**

Dragana Krstić (Faculty of Electronic Engineering, University of Niš, Serbia), Dragan Radenkovic (Faculty of Electronic Engineering, University of Niš, Serbia), Ilija Temelkovski (Faculty of Electronic Engineering, University of Niš, Serbia), Srboljub Zdravkovic Zdravkovic (Faculty of Electronic Engineering, University of Niš, Croatia) and Srdjan Maricic (FPIM Union University Belgrade, Serbia)

### **Throughput Gain by Hybrid TDM/FDM & Spatial Reuse of Resources Among Nodes and Links for Inband Relaying**

Miguel Eguizabal-Alonso (University of Zaragoza, Spain) and Angela Hernández-Solana (University of Zaragoza, Spain)

**Thursday, September 18, 9:00-10:30, (HVAR)**

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## **S3: NETWORK OPERATIONS AND PROTOCOLS**

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*Chair: Luca Veltri, University of Parma, Italy*

### **Analytic Model for Cross-Layer Dependencies in VDSL2 access networks**

Jens A. Andersson (Lund University, Sweden), Stefan Höst (Lund University, Sweden), Daniel Cederholm (Ericsson, Sweden) and Maria Kihl (Lund University, Sweden)

### **Class based tunnel exclusion router architecture**

Ines Ramadza (University of Split, Croatia), Julije Ozegovic (University of Split, Croatia) and Vesna Pekic (University of Split, Croatia)

### **Trust-based Routing for Kademia in a Sybil Scenario**

Riccardo Pecori (University of Parma, Italy) and Luca Veltri (University of Parma, Italy)

### **Application and Evaluation of Distributed WAN Optimization Technique in Heterogeneous Networks**

Yosuke Takano (Fujitsu Laboratories Ltd., Japan), Naoki Oguchi (Fujitsu Laboratories Ltd., Japan), Hiroshi Tomonaga (Fujitsu Laboratories Ltd., Japan) and Shunji Abe (National Institute of Informatics, Japan)

### **Who is whois? An Analysis of Results Consistence**

Aruna Prem Bianzino (Lepida SpA, Italy), Davide Pezzuolo (Università di Ferrara, Italy) and Gianluca Mazzini (Università di Ferrara, Italy)

### **Mathematical model of Constrained Priority Countdown Freezing Protocol**

Ante Kristic (University of Split, Croatia), Julije Ozegovic (University of Split, Croatia) and Ivan Kedzo (University of Split, Croatia)

**Thursday, September 18, 11:00-12:30, (BRAČ)**

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## **S4: MOBILE AND WIRELESS COMMUNICATIONS**

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*Chair: Nuno Vasco Lopes, University of Minho, Portugal*



### **Intelligent Handover for Vehicular Networks**

Andre Almeida (University of Minho, Portugal), Nuno Vasco Lopes (University of Minho, Portugal) and Alexandre Santos (University of Minho & Centro Algoritmi, Portugal)

### **Joint Packet Retransmission and Spectrum Sensing for Cognitive Radio Networks**

Fotis Foukalas (Qatar University, Qatar) and George T. Karetzos (Technology Education Institute of Thessaly, Greece)

### **PHY/MAC Signalling Protocols for Resilient Cognitive Radio Networks**

Martin Peres (University of Bordeaux, LaBRI, France), Mohamed Aymen Chalouf (IRISA Lab - University of Rennes 1, France) and Francine Krief (University of Bordeaux, France)

### **Prototype for Customized Multicast Services in Software Defined Networks**

Shengquan Liao (College of Computer Science and Technology, Zhejiang University, P.R. China), Xiaoyan Hong (University of Alabama, USA), Chunming Wu (College of Computer Science, Zhejiang University, P.R. China), Wang Bin (Zhejiang University, P.R. China) and Ming Jiang (Hangzhou Dianzi University, P.R. China)

### **Performance Evaluation of Frequency and Symbol Timing Offset Estimation Methods for DAB/DAB+ Receivers under Multipath Fading Channels**

Sebastian Baumgartner (Chemnitz University of Technology, Germany), Youssef El Hajj Shehadeh (TU Chemnitz, Germany) and Gangolf Hirtz (Chemnitz University, Germany)

**Thursday, September 18, 15:00-16:30, (BRAČ)**

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## **S5: TELECOMUNICATION SERVICES AND QoS**

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*Chair Zoran Blažević, University of Split, Croatia*

### **Adaptive behaviour of some simple algorithms in LTE-Wifi Heterogeneous Networks**

Tamas Patocskai (Budapest University of Technology and Economics, Hungary) and Peter Fazekas (Budapest University of Technology and Economics, Hungary)

### **The effect of a new hybrid decision handover algorithm on QoS in two-tier LTE-A network**

Ádám Knapp (Budapest University of Technology and Economics, Hungary) and Győző Gódor (Budapest University of Technology and Economics, Hungary)

### **Adaptive Channel Quality Feedback for LTE**

The Nam Pham (RWTH Aachen University, Germany), Xiang Xu (RWTH Aachen University, Germany) and Rudolf Mathar (RWTH Aachen University, Germany)

### **Performance Analysis of Local Caching Replacement Policies for Internet Video Streaming Services**

Jie Li (Acreo Swedish ICT AB, Sweden), Jinlong Wu (Royal Institute of Technology (KTH), P.R. China), György Dán (KTH Royal Institute of Technology, Sweden), Åke Arvidsson (Ericsson, Sweden) and Maria Kihl (Lund University, Sweden)

### **Techno-economic comparison of FTTC/VDSL and hybrid optical/wireless networks**

Damir Breskovic (FESB, University of Split & T-Hrvatski Telekom, Croatia)

**Thursday, September 18, 15:00-16:30, (HVAR)**

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## **S6: COMMUNICATIONS SOFTWARE I**

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*Chair: Zoran Skočir, University of Zagreb, Croatia*

### **Modeling Expert Effort Estimation of Software Projects**

Hrvoje Karna (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture in Split & Siemens, Croatia) and Sven Gotovac (University of Split & FESB, Croatia)

### **Implementing an ATL Model Checker tool using Relational Algebra concepts**

Florin Stoica (Lucian Blaga University of Sibiu, Romania) and Laura Stoica (Lucian Blaga University of Sibiu, Romania)

### **Relation Generality - a metric for executable class model quality**

Nenad Ukić (Ericsson Nikola Tesla d.d. (ETK), Croatia), Ljiljana Šerić (University of Split, Croatia) and Josip Maras (University of Split & Mälardalen University, Sweden, Croatia)

**Thursday, September 18, 17:00-18:30, (HVAR)**

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## **S7: COMMUNICATIONS SOFTWARE II**

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*Chair: Zoran Skočić, University of Zagreb, Croatia*

### **A network testbed for commercial telecommunications product testing**

Denis Salopek (University of Zagreb, Croatia), Valter Vasić (University of Zagreb, Croatia), Marko Zec (University of Zagreb, Croatia), Miljenko Mikuc (Zagreb, Croatia), Mladen Vašarević (Ericsson Nikola Tesla, Zagreb, Croatia) and Vladimir Končar (Ericsson Nikola Tesla, Zagreb, Croatia)

### **Using the interaction on social networks to predict real life friendship**

Maja Majić (Sveučilište u Zagrebu, Croatia), Jurica Skorin (Sveučilište u Zagrebu, Croatia), Luka Humski (University of Zagreb, Croatia) and Zoran Skocir (University of Zagreb, Croatia)

### **Calculating User's Social Influence through the SmartSocial Platform**

Vanja Smilovic (Ericsson Nikola Tesla, Croatia), Darko Striga (University of Zagreb, Croatia), Dora Mamic (University of Zagreb Faculty of Electrical Engineering and Computing, Croatia) and Vedran Podobnik (University of Zagreb, Croatia)

### **A Proposal and Performance Evaluation of Efficient Architectures for Emergency Geo-localization Services**

Chiara Taddia (Lepida SpA & University of Ferrara, Italy) and Gianluca Mazzini (University of Ferrara and LepidaSpA, Italy)

**Friday, September 19, 09:00-10:30, (HVAR)**

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## **S8: SIGNAL PROCESSING AND CODING II**

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*Chair Francesca Vatta, University of Trieste, Italy*

### **Double-talk detector based on speech feature extraction for acoustic echo cancellation**

Mahfoud Hamidia (University of Science and Technology Bab Ezzouar & USTHB, Algeria) and Abderrahmane Amrouche (USTHB, Algeria)

### **User-Dependent Gesture Recognition on Android Handheld Devices**

Tea Marasović (FESB, Split, Croatia) and Vladan Papic (University of Split, Croatia)

### **Efficient Simulation of Quantum-based Searching**

Tamas Varga (University of West Hungary, Hungary) and Laszlo Bacsardi (Budapest University of Technology and Economics, Hungary)

### **Energy-Efficient Clock Synchronization using Wake-up Receivers**

Johannes Blanckenstein (Airbus Group Innovations, Germany) and Holger Karl (University of Paderborn, Germany)

### **Implementation of a burst error and burst erasure channel emulator using an FPGA architecture**

Massimo Rigo (University of Trieste, Italy), Caterina Travan (University of Trieste, Italy), Francesca Vatta (University of Trieste, Italy) and Fulvio Babich (University of Trieste, Italy)



**Wednesday, September 17, 09:00-10:30, (HVAR)**

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## **SYM1/I: Symposium on Environmental Electromagnetic Compatibility I**

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*Symposium co-chairs: Dragan Poljak, Vesna Roje*

### **A function for approximating electrostatic discharge currents**

Vesna Javor (University of Nis, Faculty of Electronic Engineering, Serbia)

### **Transient statistics from the lightning strike current flowing along grounding electrode**

Sebastien Lalléchére (Blaise Pascal University, France), Silvestar Sesnic (University of Split, Croatia), Pierre Bonnet (Blaise Pascal University, France), Khalil El Khamlichi Drissi (Universite Blaise Pascal & LASMEA Laboratory, France) and Dragan Poljak (University of Split, Croatia)

### **Integral Equation Based Dosimetry Model of the Human Brain: Frequency Dependence of the Results**

Mario Cvetković (University of Split, Croatia) and Dragan Poljak (University of Split, Croatia)

### **Interaction Between Humans and Wireless Power Transfer Systems**

Maja Škiljo (University of Split, Croatia) and Zoran Blažević (University of Split, Croatia)

**Wednesday, September 17, 15:30-17:00, (HVAR)**

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## **SYM1/II: Symposium on Environmental Electromagnetic Compatibility II**

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*Symposium co-chairs: Dragan Poljak, Vesna Roje*

### **Rectangular patch antenna: design, wideband properties and loss tangent influence**

Damir Senic (Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, Croatia), Zlatko Živković (Mechanical Engineering and Naval Architecture, Croatia), Marko Simic (FESB, Split, Croatia) and Antonio Sarolic (Mechanical Engineering and Naval Architecture, Croatia)

### **A Review of Some Analytical Solutions to the Grad-Shafranov Equation**

Silvestar Sesnic (University of Split, Croatia), Dragan Poljak (University of Split, Croatia) and Ena Slišković (FESB, University of Split, Croatia)

### **A Note on FEM Modeling of Some Magnetohydrodynamics Phenomena for Application in Fusion Related Research**

Dragan Poljak (University of Split, Croatia) and Vicko Doric (University of Split, FESB, Croatia)

### **Numerical Optimization of Electrically Focal Transcranial Magnetic Stimulation Coils**

Igor Perković (FESB, University of Split, Croatia), Konstantin Porzig (Ilmenau University of Technology, Germany), Dragan Poljak (University of Split, FESB, Croatia) and Hartmut Brauer (Ilmenau University of Technology, Germany)

**Thursday, September 18, 11:00-12:30, (HVAR)**

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## **SYM1/III: Symposium on Environmental Electromagnetic Compatibility III**

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*Symposium co-chairs: Dragan Poljak, Vesna Roje*

### **Circular Polarizer by Multi-Form Helices**

Nantakan Wongkasem, Wongkasem (Khon Kaen University, Thailand)

### **An UWB Microstrip Antenna with Dual Band-Stop Performance Using a Meander-Line Resonator**

Nasser Ojaroudi (Young Researchers and Elite Club, Ardabil Branch, Islamic Azad University, Ardabil, Iran)

### **Measurements of Human Body Shadowing in a DFL Solution**

Németh Zoltán (Budapest University of Technology and Economics, Hungary), Sándor Imre (Technical University of Budapest, Hungary), Dávid Varga (Budapest University of Technology and Economics, Hungary) and Győző Gódor (Budapest University of Technology and Economics, Hungary)

### **3D Localization method for RFID Tags by using Mobile Readers and Virtual Reference tags**

Elma Zanj (Polytechnic University of Tirana & Polytechnic University of Tirana, Albania), Genta Ranxha (Polytechnic University of Tirana, Albania), Ajeta Kaso (Polytechnic University of Tirana, Albania) and Blerina Zanj (Agricultural University of Tirana, Albania, Albania)

**Wednesday, September 17, 09:00-10:30, (BRAC)**

**SS1: Special Session on Green Networking**

*Special session chairs: Josip Lorincz, University of Split, Croatia*

**Web Page Download Scheduling Policies for Green Web Crawling**

Vassiliki Hatzi (CERTH and University of Thessaly, Greece), Berkant Barla Cambazoglu (Yahoo! Research, Spain) and Iordanis Koutsopoulos (Athens University of Economics and Business and CERTH & CERTH, Greece)

**An SDN-based Energy-Aware Routing Model for Intra-Domain Networks**

Mahmud Rasih Celenlioglu (Gebze Institute of Technology, Turkey), Haci Ali Mantar (Gebze Institute of Technology, Turkey) and Süleyman Burak Göger (Gebze Institute of Technology - Naval Science and Engineering Institute & Gebze Institute of Technology, Turkey)

**An Energy Consumption Model for 802.11ac Access Points**

Mehmet Demir (Istanbul Technical University, Turkey), Gunes Karabulut Kurt (Istanbul Technical University, Turkey) and Mehmet Karaca (AirTies Wireless Networks, Turkey)

**The Impact of Sleep Modes on the Lifetime of Cellular Networks**

Luca Chiaraviglio (University of Rome Sapienza, Italy) and Josip Lorincz (University of Split, Croatia)

**Wednesday, September 17, 15:30-17:00, (BRAC)**

**SS2: Special Session on QoS in Wired and Wireless Networks**

*Special session chair: Pascal Lorenz, University of Haute Alsace, France*

**An Optimization Calculation Method: the Positioning of Passenger's Mobility based on Augmented Reality (invited paper)**

Hanen Kabaou (University of Haute Alsace, France), Pascal Lorenz (University of Haute Alsace, France) and Sami Tabbane (Sup Telecom, Tunisia)

**Performance of Circuit Switched Fall Back & Single Radio Voice Call Continuity from TD-LTE to UMTS**

Leo Bhebhe (Nokia Solutions and Networks & University of Aalto, Finland) and Marko Heiskanen (Nokia Networks, Finland)

**A new approach to WWW service quality evaluation**

Janusz Henryk Klink (Wroclaw University of Technology, Poland)

**Subjective quality measurements of SMS**

Janusz Henryk Klink (Wroclaw University of Technology, Poland) and Pawel Bardowski (Wroclaw University of Technology, Poland)

**Thursday, September 18, 17:00-18:30, (BRAC)**

**SS3: Special session on RFID technologies & the Internet of things**

*Special session chair: Luigi Patrono, University of Salento, Italy*

**Combining RFID-Based Physical Access Control Systems with Digital Signature Systems to Increase Their Security**

Andrey Larchikov (ANCUD, LLC, Russia), Sergey P. Panasenko (ANCUD, LLC, Russia), Alexander V. Pimenov (ANCUD, LLC, Russia) and Peter Timofeev (ANCUD, LLC, Russia)

**Integration of RFID and WSN Technologies in a Smart Parking System**

Luca Mainetti (University of Salento, Italy), Luca Palano (University of Salento, Italy), Luigi Patrono (University of Salento, Italy), Maria Laura Stefanizzi (University of Salento, Italy) and Roberto Vergallo (University of Salento, Italy)

**A Survey on Indoor Positioning Systems**

Luca Mainetti (University of Salento, Italy), Luigi Patrono (University of Salento, Italy) and Ilaria Sergi (University of Salento, Italy)

**An Android Multi-protocol Application for Heterogeneous Building Automation Systems**

Luca Mainetti (University of Salento, Italy), Vincenzo Mighali (University of Salento, Italy) and Luigi Patrono (University of Salento, Italy)

**RFID Encryption Scheme Featuring Pseudorandom Numbers and Butterfly Seed Generation**

Raghav V Sampangi (Dalhousie University, Canada) and Srinivas Sampalli (Dalhousie University, Canada)

**Lightweight Multicast Forwarding for Service Discovery in Low-power IoT Networks**

Mattia Antonini (University of Parma, Italy), Simone Cirani (University of Parma, Italy), Gianluigi Ferrari (University of Parma, Italy), Paolo Medagliani (Thales Communications and Security, France), Marco Picone (University of Parma, Italy) and Luca Veltri (University of Parma, Italy)

**Friday, September 19, 9:00-10.30, (BRAC)**

**SS4: Special Session on Ad-Hoc and Sensor Networks**

*Special session chair: Luigi Patrono, University of Salento, Italy*

**Improved Algorithm for Mobile Large Scale Sensor Networks Based on LEACH Protocol**

Imen Souid (University of Carthage, Tunisia), Haithem Ben Chikha (University of Carthage & Tunisia Polytechnic School, Tunisia), Malika El Monser (University of Carthage, Tunisia) and Attia Rabah (Ecole nationale d'ingénieur de Tunis, Tunisia)

**Multi-hop Dynamic Clustering LEACH Protocol for Large Scale Networks**

Imen Souid (University of Carthage, Tunisia), Haithem Ben Chikha (University of Carthage & Tunisia Polytechnic School, Tunisia), Malika El Monser (University of Carthage, Tunisia), Sondes Gasmi (University of Carthage, Tunisia) and Attia Rabah (Ecole nationale d'ingénieur de Tunis, Tunisia)

**Multi-Channel Support for Preamble Sampling MAC Protocols in Sensor Networks**

Marcin Brzozowski (IHP, Germany) and Peter Langendoerfer (IHP Microelectronics, Germany)

**Network coding approach for vehicle-to-vehicle communication: Principles, Protocols and Benefits**

Imen Achour (University of Carthage, Tunisia), Tarek Bejaoui (University of Paris-Sud 11, France) and Sami Tabbane (Sup Telecom, Tunisia)

**A Novel Realistic Irregular Radio Model to Enhance Coverage Evaluation in Wireless Sensor Networks**

Imen Arfaoui (Communication Networks and Security Research Lab (CNAS). SUP'COM, Tunisia), Ramzi Bellazreg (Communication Networks and Security Research Lab. SUP'COM, Tunisia) and Nouredine Boudriga (Communication Networks and Security Research Lab., University of Carthage, Tunisia)

# WORKSHOP ON REGULATORY CHALLENGES IN THE ELECTRONICS COMMUNICATIONS MARKET

Thursday, September 18, 17:00-18:30, (VIS)

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## WRC/I: The 4th Workshop on Regulatory Challenges in the Electronics Communications Market

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*Chair: Mario Weber, HACOM, Croatia*

### Capacity analysis of RT-based VDSL2 copper access networks

Vedran Mikac (Ericsson Nikola Tesla d. d. Zagreb, Croatia), Zeljko Ilic (University of Zagreb, Croatia), Tomaž Beriša (Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia), Alen Bazant (University of Zagreb, Croatia), Mladen Kos (Zagreb, Croatia), Goran Jurin (Croatian Post and Electronic Communications Agency, Croatia) and Velimir Svedek (HAKOM - Croatian Post and Electronic Communications Agency, Croatia)

### Business Models and Cost Optimization of Wireless Rural Broadband Access Implementation

Visnja Krizanovic (J. J. Strossmayer University of Osijek, Croatia), Drago Zagar (J.J. Strossmayer University of Osijek, Croatia), Snjezana Rimac-Drlje (University of Osijek, Croatia) and Tomislav Svedek (University of Osijek, Croatia)

### Broadband mapping - Croatian experience

Mladen Sikirica (HAKOM, Croatia) and Danko Čurepić (HAKOM, Croatia)

### Data Rate Fluctuations from User Perspective in 4G Mobile Networks

Pavle Skocir (University of Zagreb, Croatia), Damjan Katusic (University of Zagreb, Croatia), Ivan Novotni (University of Zagreb, Croatia), Iva Bojic (University of Zagreb, Croatia) and Gordan Jezic (University of Zagreb, Croatia)

Friday, September 19, 09:00-10:30, (KORČULA)

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## WRC/II: The 4th Workshop on Regulatory Challenges in the Electronics Communications Market

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*Chair: Gordan Ježić, University of Zagreb, Croatia*

### Future Network and Future Internet: A Survey of Regulatory Perspective

Ignac Lovrek (University of Zagreb, Croatia), Antun Caric (University of Zagreb, Croatia) and Dražen Lučić (Croatian Regulatory Authority for Network Industries - HAKOM, Croatia)

### Cloud computing data protection aspects under Croatian and European Union law

Nina Gumzej (University of Zagreb Faculty of Law, Croatia) and Dražen Dragičević (University of Zagreb Faculty of Law, Croatia)

### Accounting information systems of telecommunication operators in Croatia

Ivana Dražić Lutitsky (University of Zagreb & Faculty of Economics and Business, Croatia) and Marina Ivic (Associate of Department for Telecommunication, Croatia)

### Simulating DVB-T to DVB-T2 Migration Opportunities in Croatian TV Broadcasting

Emil Dumic (FER, Croatia), Sonja Grgic (University of Zagreb, Croatia) and Domagoj Frank (University North, Croatia)

### User Privacy Risk Calculator

Marin Vukovic (University of Zagreb, Croatia), Damjan Katusic (University of Zagreb, Croatia), Pavle Skocir (University of Zagreb, Croatia), Dragan Jevtic (University of Zagreb, Croatia), Luka Delonga (Croatian Regulatory Authority for Network Industries, Croatia) and Daniela Trutin (Croatian Regulatory Authority for Network Industries, Croatia)

# TIMETABLE A: TECHNICAL PROGRAM

Hotel Radisson Blu Resort, Split, Wednesday, September 17			
Time/Hall	BRAČ	HVAR	KORČULA
09:00 - 10:30	SS1: Special Session on Green Networking	SYM1/I: Symposium on Environmental Electromagnetic Compatibility I	S1: Network Virtualization and Cloud Technologies
10:30 - 11:30	Coffee Break		
<b>OPENING CEREMONY</b>			
11:30 - 13:00	<b>Keynote speech (GRAND BALLROOM):</b> <i>Sandor Albrecht, High performance and programmable packet processing and the role of hardware acceleration</i>		
13:00 - 15:00	<b>Conference Luncheon</b>		
15:00 - 15:30	<b>Invited talk (BRAČ):</b> <b>Franco Chiaraluce</b> , Error correcting codes in telecommand and telemetry for European Space Agency missions: an overview and new perspectives		
15:30 - 17:00	SS2: Special Session on QoS in Wired and Wireless Networks	SYM1/II: Symposium on Environmental Electromagnetic Compatibility II	Poster sessions I/II (UPPER FLOOR LOBBY)
17:00 - 17:30	Coffee Break		
18:00 - 19:30	<b>Guided Tour in Split</b>		
20:00 - 21:30	<b>Welcome Party in Diocletian Palace</b>		

Hotel Radisson Blu Resort, Split, Thursday, September 18			
Time/Hall	BRAČ	HVAR	KORČULA
09:00 - 10:30	S2: Signal Processing and Coding I	S3: Network Operations and Protocols	WIoT /I: Workshop on Interoperability and Open-Source Solutions for the Internet of Things I
10:30 - 11:00	Coffee Break		
11:00 - 12:30	S4: Mobile and Wireless Communications	SYM 1/III: Symposium on Environmental Electromagnetic Compatibility III	WIoT /II: Workshop on Interoperability and Open-Source Solutions for the Internet of Things II
12:30 - 13:00	<b>Invited talk (KORČULA):</b> <b>Luigi Rizzo</b> , High speed software networking and virtual machines		
13:00 - 15:00	<b>Lunch</b>		
15:00 - 16:30	S5: Telecommunication Services and QOS	S6: Communications Software I	WIoT /III: Workshop on Interoperability and Open-Source Solutions for the Internet of Things III
16:30 - 17:00	Coffee Break		
17:00 - 18:30	SS3: Special session on RFID technologies & the Internet of things	S7: Communications Software II	WIoT /IV: Workshop on Interoperability and Open-Source Solutions for the Internet of Things IV

Hotel Radisson Blu Resort, Split, Friday, September 19			
Time/Hall	BRAČ	HVAR	KORČULA
09:00 - 10:30	SS4: Special Session on Ad-Hoc and Sensor Networks	S8: Signal Processing and Coding II	WRC/II: The 4th Workshop on Regulatory Challenges in the Electronics Communications Market II
10:30 - 11:00	Coffee Break		
11:00 - 18:30	<b>Conference Trip and Lunch</b>		

\* Registration: Wednesday (08:00 – 12:30), (14:30 – 18:30), Thursday (08:00 – 11:00), (15:00 – 17:30), Friday (08:00 – 10:30)

# TIMETABLE B: TUTORIALS, WORKSHOPS, BUSINESS FORUM

Hotel Radisson Blu Resort, Split, Wednesday, September 17			
Time/Hall	VIS		ŠOLTA
09:00 - 10:30	WICT/I: Workshop on Information and Communication Technologies I		Tutorial T1 (P. Lorenz) <i>IP-Oriented QoS and QoE in the Next Generation Networks: application to wireless networks</i> Tutorial
10:30 - 11:30	Coffee Break		
11:30 - 13:00	<b>OPENING CEREMONY</b>		
	<b>Keynote speech (GRAND BALLROOM):</b> <b>Sandor Albrecht</b> , <i>High performance and programmable packet processing and the role of hardware acceleration</i>		
13:00 - 15:00	<b>Conference Luncheon</b>		
15:00 - 15:30	<b>Invited talk (BRAČ):</b> <b>Franco Chiaraluce</b> , <i>Error correcting codes in telecommand and telemetry for European Space Agency missions: an overview and new perspectives</i>		
15:30 - 16:00	WSEP: Third Workshop on Software Engineering in Practice	WICT/II: Workshop on Information and Communication Technologies II	Presentation: Technology Vision 2020... and beyond (Darko Giljević, Nokia Networks Hrvatska) (KORČULA)
16:00 - 17:00			
17:00 - 17:30	Coffee Break		
18:00 - 19:30	<b>Guided Tour in Split</b>		
20:00 - 21:30	<b>Welcome Party in Diocletian Palace</b>		

Hotel Radisson Blu Resort, Split, Thursday, September 18			
Time/Hall	VIS		ŠOLTA
09:00 - 10:30	WI /I: Workshop on Innovation in ICT I		Tutorial T2 (D. Poljak) <i>Advanced Computational Techniques in Electromagnetic Compatibility, Bioelectromagnetics and Magnetohydrodynamics</i>
10:30 - 11:00	Coffee Break		
11:00 - 12:30	WI /II: Workshop on Innovation in ICT II		Tutorial T3 (University of Zagreb network experimentation group) <i>Tutorial: High-speed Network Emulation Using Open Source Tools</i>
12:30 - 13:00	<b>Invited talk (KORČULA):</b> <b>Luigi Rizzo</b> , <i>High speed software networking and virtual machines</i>		
13:00 - 15:00	<b>Lunch</b>		
15:00 - 16:30	WICT/III: Workshop on Information and Communication Technologies III		Tutorial T4 (T. Tadić) <i>The European Roadmap to Fusion Electricity</i>
16:30 - 17:00	Coffee Break		
17:00 - 18:30	WRC/I: The 4th Workshop on Regulatory Challenges in the Electronics Communications Market I	Tutorial T5 (S. Lallechere, P. Bonnet) <i>Uncertainty Quantification for Computational and Experimental EMC</i>	

Hotel Radisson Blu Resort, Split, Friday, September 19			
Time/Hall	VIS		ŠOLTA
09:00 - 10:30	WESC: Ericsson Nikola Tesla Summer Camp 2014 Workshop		T6 (F. Erden) <i>Studying Oscillations Caused by a Current Surge via Evolutionary Approach to Electromagnetics</i>
10:30 - 11:00	Coffee Break		
11:00 - 18:30	<b>Conference Trip and Lunch</b>		

\* Registration: Wednesday (08:00 – 12:30), (14:30 – 18:30), Thursday (08:00 – 11:00), (15:00 – 17:30), Friday (08:00 – 10:30)

# WORKSHOP ON INTEROPERABILITY AND OPEN-SOURCE SOLUTIONS FOR THE INTERNET OF THINGS

**Thursday, September 18, 09:00-10:30 (KORČULA)**

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## **WIoT /I: Workshop on Interoperability and Open-Source Solutions for the Internet of Things**

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*Chair: Martin Serrano, National University of Ireland, Galway, Ireland*

### **A Visual Paradigm for IoT Solutions Development**

Nikos Kefalakis (Athens Information Technology, Greece), John Soldatos (Athens Information Technology, Greece), Achilleas Anagnostopoulos (Sensap SA, Greece) and Panagiotis Dimitropoulos (Sensap SA, Greece)

### **The OpenIoT Approach to Sensor Mobility with Quality-Driven Data Acquisition Management**

Ivana Podnar Žarko (University of Zagreb, Croatia), Aleksandar Antonić (University of Zagreb, Croatia), Martina Marjanović (University of Zagreb, Croatia), Krešimir Pripužić (University of Zagreb, Croatia) and Lea Skorin-Kapov (University of Zagreb, Croatia)

### **Mapping the OGC SensorThings API onto the OpenIoT middleware**

Hylke van der Schaaf (Fraunhofer IOSB, Germany) and Reinhard Herzog (Fraunhofer IOSB, Germany)

**Thursday, September 18, 11:00-12:50 (KORČULA)**

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## **WIoT /II: Workshop on Interoperability and Open-Source Solutions for the Internet of Things**

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*Chair: Ivana Podnar Žarko, University of Zagreb, Croatia*

### **Keynote Talk: Open Source Strategies for Driving the IoT**

Bill Weinberg, Senior Director, Open Source Strategy Consulting at Black Duck Software, USA

### **Autonomic frameworks deployment using configuration and service delivery models for the Internet of Things**

Saniat Mahmudur (National University of Ireland Galway, Ireland), Hoan Nguyen Mau Quoc (National University of Ireland Galway, Ireland), Huy Le Van (National University of Ireland Galway, Ireland), Danh LePhuoc (National University of Ireland Galway, Ireland), Martin Serrano (National University of Ireland Galway, Ireland) and Manfred Hauswirth (National University of Ireland Galway, Ireland)

### **An Open-Source Cloud Architecture for Big Stream IoT Applications**

Laura Belli (University of Parma, Italy), Simone Cirani (University of Parma, Italy), Luca Davoli (University of Parma, Italy), Lorenzo Melegari (University of Parma, Italy), Marius Montón (UAB, Spain) and Marco Picone (University of Parma, Italy)

### **mjCoAP: An Open-Source Lightweight Java CoAP Library for Internet of Things Applications**

Simone Cirani (University of Parma, Italy), Marco Picone (University of Parma, Italy) and Luca Veltri (University of Parma, Italy)

### **Interoperability between Machine-to-Machine Communication System and IP Multimedia Subsystem**

Vanessa Čačković (Ericsson Nikola Tesla, Croatia), Mario Kušek (University of Zagreb, Croatia) and Iva Bojić (University of Zagreb, Croatia)

**Thursday, September 18, 15:00-16:30 (KORČULA)**

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## **WIoT /III: Workshop on Interoperability and Open-Source Solutions for the Internet of Things**

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*Chair: Lea Skorin-Kapov, University of Zagreb, Croatia*

### **Keynote Talk: Business Ecosystems for the IoT**

Markus Weinberger, Director of Bosh IoT Lab, Bosch Software Innovations GmbH, Germany

### **Improving Productivity of Agriculture with OpenIoT Platform**

Prem Prakash Jayaraman (CSIRO, Australia), Doug Palmer (CSIRO, Australia), Arkady Zaslavsky (CSIRO, Australia), Ali Salehi (CSIRO, Australia) and Dimitrios Georgakopoulos (RMIT University, Australia)

### **Autonomic aspects of IoT based systems. A logistics domain scheduling example**

Septimiu Nechifor (Siemens SRL, Romania), Dan Puiu (Siemens, Romania), Bogdan Târnuacă (Siemens Corporate Technology Romania, Romania) and Florin Moldoveanu (Transilvania University of Brasov, Romania)

### **Reporting Smart City Road Problems Using OpenIoT Framework**

Alexey Medvedev (ITMO University, Russia), Arkady Zaslavsky (CSIRO, Australia), Sergey Khoruzhnikov (ITMO University, Russia) and Vladimir Grudin (National Research University ITMO, Russia)

**Thursday, September 18, 17:00-18:30 (KORČULA)**

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## **WIoT /IV: Workshop on Interoperability and Open-Source Solutions for the Internet of Things**

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*Chair: Martin Serrano, National University of Ireland, Galway, Ireland*

### **OpenIoT Integrated Demo: A very first step on learning the OpenIoT technology**

OpenIoT Consortium

### **OpenIoT VDK-Distribution**

OpenIoT Consortium

### **Selected OpenIoT Demos (CrowdSensing, Phenonet, Smart Campus, SilverAngel)**

OpenIoT Consortium

# PROFESSIONAL PROGRAM: WORKSHOP ON ICT

**Wednesday, September 17, 09:00-10:30, (VIS)**

## **WICT/I: Workshop on Information and Communication Technologies**

*Chair: Milutin Kapov, University of Split, Croatia*

### **Primjena cloud rješenja u Veleučilištu Šibenik**

Ivan Livaja (Veleučiliste u Sibeniku, Croatia), Alen Granc (Veleučiliste u Sibeniku, Croatia), Frane Urem (College of Sibenik, Croatia), Igor Zaja (Hrvatski Telekom, Croatia)

### **Decentralized Management of Electronic Health Records**

Andrew Andreev (BINETIX LLC, Bulgaria)

### **Health Check in MSS and TSS nodes**

Ivana Kresic (Ericsson Nikola Tesla, Croatia); Petar Vukman (Ericsson Nikola Tesla, Croatia); Andrijana Primorac (Ericsson Nikola Tesla, Croatia),

### **Mobile Broadband Internet Access**

Faruk Duvnjak (University of Split)

### **VoLTE Emergency Call Service**

Ivan Visković (Hrvatski Telekom, Croatia); Ivan Krevatin (Hrvatski Telekom, Croatia)

### **Open Source Video Analysis for a Centralized Video Management Service**

Chiara Taddia (Lepida SpA & University of Ferrara, Italy)  
Gianluca Mazzini (University of Ferrara and LepidaSpA, Italy)

### **RFID UHF Temperature Sensor Tags Initialization and Application**

Matea Božić-Kudrić (University of Split, Croatia), Petar Šolić (University of Split, Croatia), Nikola Rožić (University of Split, Croatia)

**Wednesday, September 17, 15:30-17:00, (ŠOLTA)**

## **WICT/II: Workshop on Information and Communication Technologies**

*Chair: Maja Škiljo, University of Split, Croatia*

### **Experimental Study of Hard Data Fusion Rules for Cooperative Spectrum Sensing in Cognitive Radio Networks**

Demian Lekomtcev (Brno University of Technology, Czech Republic) Roman Marsalek (Brno University of Technology, Czech Republic)

### **Spectrum Sensing for Spatially Correlated Massive MIMO Channels with Imperfect CSI**

Imen Souid (University of Carthage, Tunisia), Haithem Ben Chikha (University of Carthage & Tunisia Polytechnic School, Tunisia); Attia Rabah (Ecole nationale d'ingénieur de Tunis, Tunisia)

### **Data model of completion of work for fiber-optic telecommunications networks**

Stefania Nanni (Lepida SpA, Italy), Andrea Lugli (Lepida SpA, Italy); Gianluca Mazzini (University of Ferrara and LepidaSpA, Italy)

### **Clock Synchronization between Wireless Low Power Devices**

Fernando Nascimento (Universidade Presbiteriana Mackenzie,

Brazil); Paulo Lopes (Universidade Presbiteriana Mackenzie, Brazil)

### **Minimization of Ship Radar Cross Section**

Petra Rasic (University of Split); Maja Škiljo (University of Split); Zoran Blažević (University of Split)

### **Cross-layer design of cognitive networks**

Ivana Ramljak (University of Mostar, Bosnia and Hercegovina)

**Wednesday, September 17, 09:00-10:30, (UPPER FLOOR LOBBY)**

## **P1W: THE PROFESSIONAL PROGRAM – POSTER SESSION**

### **Choosing Color Space for Recognition of Same-Color Patterns in Video**

Jiří Cabal (University of Hradec Kralove, Faculty of Informatics and Management, Czech Republic)

### **IDA-Cage: a demonstration of an RFID-based System for Animal Behavior Analysis**

Ilaria Sergi (University of Salento, Italy), Andrea Secco (University of Salento, Italy), Luigi Patrono (University of Salento, Italy) and Luca Mainetti (University of Salento, Italy)

**Thursday, September 18, 15:00-16:30, (VIS)**

## **WICT/III: Workshop on Information and Communication Tehnologies**

*Chair: Matko Šarić, University of Split, Croatia*

### **Security in a Smart Lighting System: a Survey 15.0**

Luca Mainetti (University of Salento, Italy), Luigi Patrono (University of Salento, Italy); Maria Laura Stefanizzi (University of Salento, Italy)

### **Design of Data Centers for Public**

Elisa Benetti (LepidaSpA, Italy), Stefano Bonino (LepidaSpA, Italy), Andrea Odorizzi (University of Ferrara, Italy); Gianluca Mazzini (University of Ferrara and LepidaSpA, Italy)

### **WifER: Mobile Wireless Access on Regional Trains**

Aruna Prem Bianzino (Lepida SpA, Italy), Elisa Benetti (LepidaSpA, Italy), Stefano Bonino (LepidaSpA, Italy); Gianluca Mazzini (University of Ferrara and LepidaSpA, Italy)

### **Security Aspects of the RPL Protocol Implementation into IPv6-based Wireless Sensor Networks**

Kresimir Grgic (J. J. Strossmayer University of Osijek, Croatia), Visnja Krizanovic (J. J. Strossmayer University of Osijek, Croatia); Vanja Mandric (J. J. Strossmayer University of Osijek, Croatia)

### **Semi-automation of AXE Platform Software Upgrade**

Kristina Prce (Ericsson Nikola Tesla, Croatia); Ivan Kalaica (Ericsson Nikola Tesla, Croatia); Alen Čaljuškić (Ericsson Nikola Tesla, Croatia)

### **Image Object Recognition Using Color and Spectrum Comparison**

Marina Prvan (University of Split, Croatia), Matko Saric (University of Split, Croatia); Nikola Rozic (University of Split, Croatia)



**Pascal Lorenz, PhD***University of Haute Alsace, France***IP-Oriented QoS and QoE in the Next Generation Networks: application to wireless networks**

**Abstract:** Emerging Internet Quality of Service (QoS) mechanisms are expected to enable wide spread use of real time services such as VoIP and videoconferencing. The "best effort" Internet delivery cannot be used for the new multimedia applications. New technologies and new standards are necessary to offer Quality of Service (QoS) for these multimedia applications. Therefore new communication architectures integrate mechanisms allowing guaranteed QoS services as well as high rate communications. The service level agreement with a mobile Internet user is hard to satisfy, since there may not be enough resources available in some parts of the network the mobile user is moving into. The emerging Internet QoS architectures, differentiated services and integrated services, do not consider user mobility. QoS mechanisms enforce a differentiated sharing of bandwidth among services and users. Thus, there must be mechanisms available to identify traffic flows with different QoS parameters, and to make it possible to charge the users based on requested quality. The integration of fixed and mobile wireless access into IP networks presents a cost effective and efficient way to provide seamless end-to-end connectivity and ubiquitous access in a market where the demand for mobile Internet services has grown rapidly and predicted to generate billions of dollars in revenue. This tutorial covers the issues of QoS provisioning in heterogeneous networks and Internet access over future wireless networks as well as ATM, MPLS, DiffServ, IntServ frameworks. It discusses the characteristics of the Internet, mobility and QoS provisioning in wireless and mobile IP networks. This tutorial also covers routing, security, baseline architecture of the inter-networking protocols and end to end traffic management issues.



**Biography:** Pascal Lorenz ([lorenz@ieee.org](mailto:lorenz@ieee.org)) received his M.Sc. (1990) and Ph.D. (1994) from the University of Nancy, France. Between 1990 and 1995 he was a research engineer at WorldFIP Europe and at Alcatel-Alsthom. He is a professor at the University of Haute-Alsace, France, since 1995. His research interests include QoS, wireless networks and high-speed networks. He is the author/co-author of 3 books, 3 patents and 200 international publications in refereed journals and conferences. He was Technical Editor of the IEEE Communications Magazine Editorial Board (2000-2006), Chair of Vertical Issues in Communication Systems Technical Committee Cluster (2008-2009), Chair of the Communications Systems Integration and Modeling Technical Committee (2003-2009) and Chair of the Communications Software Technical Committee (2008-2010). He has served as Co-Program Chair of IEEE WCNC'2012, ICC'2004 and ICC'2017, tutorial chair of VTC'2013 Spring and WCNC'2010, track chair of PIMRC'2012, symposium Co-Chair at Globecom 2011-2007, ICC 2010-2008 and ICC'2014. He has served as Co-Guest Editor for special issues of IEEE Communications Magazine, Networks Magazine, Wireless Communications Magazine, Telecommunications Systems and LNCS. He is senior member of the IEEE, IARIA fellow and member of many international program committees. He has organized many conferences, chaired several technical sessions and gave tutorials at major international conferences. He was IEEE ComSoc Distinguished Lecturer Tour during 2013-2014.

**Dragan Poljak, PhD***University of Split, FESB Split, Croatia***Advanced Computational Techniques in Electromagnetic Compatibility, Bioelectromagnetics and Magnetohydrodynamics**

**Abstract:** The presentation starts with some general aspects of modeling in electromagnetics and EMC. The introductory part deals with some commonly used analytical and numerical methods. First, a crash-course on the theory of wire antennas and related numerical methods for the solution integral relationships in both frequency and time domain will be given. Applications pertaining related to dipoles, Yagi-Uda arrays and logarithmic-periodic dipole antennas (LPDA) will be discussed accompanied with some illustrative computational examples. Furthermore, full wave (antenna) models for various thin wire structures, from rather simple to realistic complex geometries, will be presented. This will be followed by the analysis of overhead and buried lines, respectively, which will be carried out using both rigorous full wave models and approximate transmission line (TL) approach. Particular attention will be focused to the analysis of PLC (Power Line Communications) configurations and modeling of lightning channel. The transient analysis of realistic grounding systems with particular emphasis to wind turbines will be undertaken, as well. Then presentation will also deal with human exposure to non-ionizing electromagnetic fields. Low frequency, frequency and transient exposures will be outlined. The presentation will end up with some topics in magnetohydrodynamics related to the modeling of fusion related phenomena.



**Biography:** Dragan Poljak was born on 10 October 1965. He received his BSc in 1990, his MSc in 1994 and PhD in electrical engineering in 1996 from the University of Split, Croatia. He is the Full Professor at Department of Electronics, Faculty of electrical engineering, mechanical engineering and naval architecture at the University of Split, and he is also Adjunct Professor at Wessex Institute of Technology. His research interests include frequency and time domain computational methods in electromagnetics, particularly in the numerical modelling of wire antenna structures, and numerical modelling applied to environmental aspects of electromagnetic fields. To date Professor Poljak has published nearly 200 journal and conference papers in the area of computational electromagnetics, seven authored books and one edited book, by WIT Press, Southampton-Boston., and one book by Wiley, New Jersey. Professor Poljak is a member of IEEE, a member of the Editorial Board of the journal *Engineering Analysis with Boundary Elements*, and co-chairman of many WIT International Conferences. He is also editor of the WIT Press Series *Advances in Electrical Engineering and Electromagnetics*. In June 2004, professor Poljak was awarded by the National Prize for Science. In 2013 he was awarded by the Nikola Tesla Prize for achievements in Technical Sciences. In 2011 professor Poljak became a member of WIT Bord of Directors and the Vice-dean for research at the Faculty of electrical engineering, mechanical engineering and naval architecture. In June 2013 professor Poljak became a member of the board of the Croatian Science Foundation.

University of Zagreb network experimentation group

## High-speed Network Emulation Using Open Source Tools

**Abstract:** Abstract: recent advances in network virtualization technologies in general-purpose operating systems now permit complex networks of arbitrary topologies ranging to hundreds of virtual nodes to be constructed and efficiently emulated on a single commodity workstation. In this tutorial we will show how open-source tools such as Quagga, XORP, Wireshark etc. can be used to achieve that goal, and how a network emulation environment called IMUNES can be used to simplify and expedite specification and instantiation of network experiments



**Biography:** Miljenko Mikuc received his PhD in Electrical Engineering from University of Zagreb, Croatia, in 1997. He is currently Associate Professor at the Faculty of Electrical Engineering and Computing, Department of Telecommunications within the same university. His research interests include digital logic design, network protocols, network simulation and security. He is a member of IEEE.



**Biography:** Marko Zec received his BSc degree from the University of Zagreb where he's now a PhD candidate working on efficient software router datapaths. He's research interests include operating systems, computer networks and programmable logic. He contributed to related open-source projects such as FreeBSD, XORP, Click and IMUNES, with funding from ICSI / UC Berkeley, NLNet Foundation, FreeBSD Foundation, Boeing Defense, Space & Security, and Ericsson Nikola Tesla.



**Biography:** Valter Vasić received his M.Sc. in Computer Science in 2010 from the Faculty of Electrical Engineering and Computing, University of Zagreb. He is currently employed as a research assistant at the same faculty within the scientific research project funded by Ericsson Nikola Tesla. His research interests include security, network simulation and virtualization. He is a member of IEEE.



**Biography:** Denis Salopek received his Master's degree in telecommunication and informatics from Faculty of Electrical Engineering and Computing, University of Zagreb in 2013. He is currently employed at the same faculty within the E-IMUNES project funded by Ericsson Nikola Tesla. He is a member of IEEE.

**Tonči Tadić, PhD***Ruđer Bošković Institute Zagreb, Croatia***The European Roadmap to Fusion Electricity**

**Abstract:** Fusion electricity can start market penetration around 2050. This requires an ambitious, yet realistic roadmap towards the demonstration of electricity production by 2050 (F. Romanelli, P. Barabaschi, D. Borba, G. Federici, L. Horton, R. Neu, D. Stork, H. Zohm A roadmap to the realization of Fusion Energy (2012)). This talk describes the main technical challenges on the path to fusion energy. For all of the challenges candidate solutions have been developed and the goal of the programme is now to demonstrate that they will also work at the scale of a reactor. The roadmap has been developed within a goal-oriented approach articulated in eight different Missions. For each Mission the critical aspects for reactor application, the risks and risk mitigation strategies, the level of readiness now and after ITER and the gaps in the programme have been examined with involvement of experts from the ITER International Organization, Fusion for Energy, EFDA Close Support Unites and EFDA Associates. High-level work packages for the roadmap implementation have been prepared and the resources evaluated. ITER is the key facility in the roadmap and its success represents the most important overarching objectives of the EU programme. A demonstration fusion power plant (DEMO), producing net electricity for the grid at the level of a few hundreds MW is foreseen to start operation in the early 2040s. Following ITER, it will be the single step to a commercial fusion power plant. The talk will also address the needs in the area of education and training and basic research.



**Biography:** *Tonči Tadić was born on 10 March 1962. He received his BSc in 1987, his MSc in 1992 and PhD in Physics in 1995 from the Ruđer Bošković Institute and University of Zagreb, Croatia. He is research associate at Ruđer Bošković Institute. His research interests include interactions of accelerated ions with materials, ion beam analyses and ion beam modification of materials. To date Tonči Tadić has published 31 journal papers in these areas of research. Tonči Tadić was Member of Parliament of Croatia (Hrvatski Sabor) 2000-2008. He is coordinator of Croatian nuclear fusion research programme and member of General Assembly of the EUROFUSION Consortium, member of European „Fusion for Energy“ Governing Board (F4E GB) and member of Euratom Programme Committee Fusion. In July 2013 Tonči Tadić was appointed by for a member of Euratom Scientific and Technical Committee (STC). In 1997-1998 he was guest-researcher at ONRI-AIST, Ikeda, Osaka, Japan as STA post-doctoral fellow. Tonči Tadić is recipient of Japanese Order of the Rising Sun.*

**Sébastien Lalléchère, PhD****Pierre Bonnet, PhD**

*Clermont University, Blaise Pascal University, BP 10448, F-63000 CLERMONT-FERRAND  
CNRS, UMR 6602, Pascal Institute, F-63177 AUBIERE*

**Uncertainty Quantification for Computational and Experimental EMC**

**Abstract:** In the electromagnetic compatibility (EMC) literature, designing electronic large systems is mostly based upon “worst” cases approaches while security margins exist to ensure the system safety. In accordance with standards, this mainly sets two problems: the need for precise and efficient tools to quantify more realistic EMC margins, jointly with trustworthy reliability levels. Basically, some environmental parameters (geometry, material, sources) are not deterministically known and some random variations lead to uncertainties. The purpose of EMC is to study the unintentional/intentional generation; propagation and reception of electromagnetic (EM) energy with reference to related undesired effects (EM interference, EMI). In this context, the development of a simple and clear methodology to integrate randomness into EMC modeling is crucial since the EMC of complex systems within critical devices cannot rely on the sole use of deterministic approaches. Quantifying the effects of uncertainties on the overall system behavior becomes nowadays of great importance in regards to EMC standards and this field of research has gained a growing interest over the past few years. Non-exhaustive state-of-the-art EMC stochastic issues contain different philosophies to integrate this problem for instance involving printed circuit boards (PCBs), cable coupling and effects of uncertain High Intensity Radiated Fields (HIRFs). EMC group from Pascal Institute (PI), Blaise Pascal University (BPU), was a pioneer in the integration of uncertainties for EMC applications. The gradual insertion of the proposed stochastic techniques for different issues from antennas characterization, EM diffraction, bio-electromagnetic purposes and EMC measurements will broadly validate these methods in computational and experimental electromagnetics. Parallel to proposed stochastic methods, we will explore the use of relevant sensitivity analysis tools to precisely assess the sensitivity of the different random parameters.



**Biography:** Sébastien Lalléchère received PhD degree in electromagnetism from Blaise Pascal University (BPU), Clermont-Ferrand, France in 2006. Since 2007, he is an Associate Professor at BPU and Pascal Institute, France. His research interests cover the fields of electromagnetic compatibility with a focus on complex & reverberating environments, computational electromagnetics and numerical modeling for stochastic & reliability issues in electrical engineering. He is actively involved in different research projects in antennas, RF and EMC, co-supervised 2 PhD students and was author or co-author of more than 60 papers in international conferences and journals.



**Biography:** Pierre Bonnet received the Ph.D. degree in electromagnetism from the University Blaise Pascal, Clermont in 1998. From 1999 to 2008 he was an assistant Professor with the Department of Physics and with the Institut Pascal at the University Blaise Pascal. He is currently a Professor in this University. His research interests are in the area of numerical electromagnetic with an emphasis on electromagnetic compatibility (EMC)/electromagnetic interference (EMI) problems, time reversal, source identification and stochastic approaches.

TUTORIAL T6

Friday, September 19  
09:00-10:30 (ŠOLTA)

**Fatih Erden, PhD**

*Turkish Naval Academy, Electrical and Electronics Engineering Department Istanbul, Turkey*

### Studying Oscillations Caused by a Current Surge via Evolutionary Approach to Electromagnetics

**Abstract:** This study is related with the problem of protection of electronics systems from the current and voltage surges. Various natural phenomena like lightning, electrostatic discharge, breakdown effects in appliances, switching, can be the reason for such surges. The surges, inevitably accompanied by onset of electromagnetic waveforms, are able to entail dangerous failure of microwave appliances, navigation and defense systems, communication networks, modern medical equipments, computers, and so on. Furthermore, nowadays it is also possible to develop effective ultra-wide band pulse generators in a very small volume which can be used as a tool for electromagnetic terrorism. The classical time-harmonic field approach meet essential difficulties in solving these problems. In this tutorial lecture, a layout of the evolutionary approach to electromagnetics (EAE), an alternative to the classical time-harmonic theory, will be presented. New problems it can cover, which are inaccessible to the time-harmonic analysis will be discussed. The layout is organized as follows. First, formulation of the problem is given, where the initial conditions for the fields and the causality principle are involved as well. A general scheme of the method and modal basis problem for a cylindrical cavity are presented. This will be followed by definition of the modal field expansions with the time-dependent amplitudes. Exact solutions for the modal amplitudes will be presented in the form of the convolution integrals where a given signal function can be a variant. Then presentation will deal with some extensions of the EAE for the Lorentz and Debye dispersive media. Furthermore, graphical results from several implementations of the EAE for the cavity problems illustrating the time dependence of the irrotational and solenoidal modes will be exhibited.



**Biography:** Fatih Erden received his B.Sc. degree in Electrical and Electronics Engineering from the Turkish Naval Academy, Istanbul, in 2000. After graduating from the Turkish Naval Academy, he served on several Turkish Navy warships for 4 years as a Navy Officer until he received his M.Sc. degree in Electronics Engineering from the Gebze Institute of Technology, Turkey, in 2004. After getting his M.Sc. degree, Erden served on the Turkish Navy Guided Missile Test Station, in Istanbul, as a Test Officer, until he received his PhD degree from the same Institute in 2009. Erden has been serving as an Assistant Professor in the Turkish Naval Academy since August 2010, with the rank of Navy Lieutenant Commander. From 2011 to 2012, he was on leave from Turkish Naval Academy to work as a Postdoctoral Research Associate at the Computational Electromagnetics Laboratory of University of Illinois at Urbana-Champaign, Electrical and Computer Engineering department. Recently, he has been collaborating with Professor Oleg A. Tretyakov from the Gebze Institute of Technology as a Post-Doctoral Researcher. His research interests include time-domain solution of electromagnetic fields with the Evolutionary Approach to Electromagnetics (EAE), and scattering problems. Erden is a member of IEEE.



# BUSINESS FORUM

Wednesday, September 17, 15:30 – 17:00 (VIS)

## THIRD WORKSHOP ON SOFTWARE ENGINEERING IN PRACTICE

The software is everywhere around us. The significant growth of ICT products and solutions depends on the quality of the used software. The software is essential enabler of future usage and growth of networked society surrounded with 50 billion of connected devices. Are we ready for such mass software production and keeping the software product life cycle continuous? Are the current researches and used software engineering practice correlated and ready to take responsibility for such broad and demanding software usage with quality and security demands? What are the software products in the “cloud” era, and are we ready to switch from software products to the model of software as a service? What challenges in software engineering are the most critical?

Let's take opportunity to discuss these software engineering challenges and exchange experience between researchers and practitioners. Prepare your view and share it with others. Be on the workshop during the SoftCOM 2014 conference.



### **Darko Huljenic, PhD**

**Adjunct associate professor, Manager for technology & science activities, Ericsson Nikola Tesla**

*Dr. Darko Huljenic received his Ph.D. degrees from the University of Zagreb, Croatia, in 2001. He has been with Ericsson Nikola Tesla since 1984. His current position is Manager for Technology & Science relations. He established the research department at ENT and expanded its cooperation with the major Croatian Universities as well as some international research institutions. His main interests are open network architecture, software development methodologies and service oriented architecture. Dr. Huljenic holds a position of associate professor at the University of Zagreb, in the Faculty of Electrical Engineering and Computing, Telecommunications Department.*

Content of the workshop:

Introduction: **Darko Huljenic**

*Short overview of some ongoing trends in software industry and main discrepancy between theory and practice will be discussed.*

Nenad Ukić, Robet Inkret, Marijan Zemljic: **xtUML in action: advantages and challenges**

*The presentation will give overview of experience in development of components for xtUML and results of application in the commercial project. For long time companies are waiting for tool that will enable smart software production but we still have some challenges.*

Ivana Stupar, Goran Kopcak: **Software engineering applied to cloud computing environments - improving scalability of the cloud-based solutions**

*One of the benefits for cloud paradigm application in the business environment is enabling fast service development and almost infinitive amount of resources. The presentation will deal with software engineering goals to enable system scalability on the right way.*

Darko Štriga, Vanja Smailovic, Vedran Podobnik: **Development of applications based on social networks**

*Social networks and their potential change our life. How to coop with this new paradigm of connected people and enable fast new applications development?*

Marin Orlic, Nenad Katanic: **Towards semi-automated software development: the S-CASE approach**

*The main benefit of service oriented architecture is plethora of ready services and way of their communication. Is it possible to make very fast orchestration and prototype the new application on semi-automatic way for new cloud based service?*

Thursday, September 18, 9:00 – 12:30 (VIS)

## WORKSHOP ON INNOVATION IN ICT

**European Union Instrument for Pre-Accession Assistance (IPA) - SIIFII  
„Technology Transfer infrastructure in the Croatian Adriatic region“**

Organizers:

**Technology Transfer Office of the University of Split**

**Faculty of electrical engineering, mechanical engineering and naval architecture**

**Leandra Vranješ Markić**, TTO University of Split

**Nikola Balić**, TTO University of Split

**Dinko Begušić**, University of Split

The Workshop on Innovation in ICT is aimed to gather researchers, professionals, students and representatives of institutions taking part in the process of innovation in the area of Information and Communication technologies to share experiences, opinions and ideas. Participants are invited to discuss the efficiency and development of the innovation system and infrastructure.

"Technology transfer infrastructure in the Croatian Adriatic region (TTAdria)" project lead by University of Split provides researchers and entrepreneurs with opportunities to communicate on future joint projects and development of new products and technologies. "Enterprise Europe Network" project promotes innovation as a foundation for future cooperation with international partners.

**9:00**

### **Welcome speech**

prof. Dinko Begušić, PhD. Faculty of electrical engineering, mechanical engineering and naval construction (FEMN), UniSt  
Nikola Balić, TTAdria Project Manager, Tehnology Transfer Office (TTO), Unist

**9:30**

### **Entrepreneurship 3.0 – taking innovations from the outside**

Luka Sučić, hub:raum Krakov the incubator of Deutsche Telekom

**9:50**

### **Innovation & Entrepreneurship in the EIT ICT Labs Program**

Paolo Magni, Business Developer EIT ICT LABS Trento Node

**10:10**

### **Innovation thru ICT**

Marko Bervanakis, Ericsson Nikola Tesla

**10:30 Coffee break**

**11:00**

### **Open disruptive innovation in ICT**

Nikola Balić, TTO, UniSt

**11:20**

### **Lean Innovation**

Živko Krstić, Poslovna inteligencija

**11:40**

### **Innovation Programs by HAMAG – BICRO**

Renato Vrebac, Croatian Agency for SMEs and Investment (HAMAG-BICRO)

**12:00**

Conclusions and discussion

## ERICSSON NIKOLA TESLA SUMMER CAMP 2014 WORKSHOP

### WESC: ERICSSON NIKOLA TESLA SUMMER CAMP 2013 WORKSHOP

Ericsson Nikola Tesla Summer Camp is a summer workshop for senior students from Croatian and universities from the region. The first Summer Camp was organized back in 2001 and since then more than 500 students participated. Students work five weeks on real problems in real industrial environment with mentors both from the company and universities. This year 82 students from Croatia (universities of Zagreb, Split, Osijek, Rijeka), Bosnia & Herzegovina (universities of Sarajevo, Tuzla and Mostar) and Hungary (Budapest University of Technology and Economics) participated.



**MODERATOR: SAŠA DEŠIĆ, PhD, Research and Innovation Manager,  
ERICSSON NIKOLA TESLA, ZAGREB**

*Dr. Saša Dešić received his PhD degree from the University of Zagreb, Croatia in 2004. He has been working as a teaching assistant in the Faculty of electrical engineering and computing and as a research engineer in Ericsson Nikola Tesla. Currently he is the head of the Research and Innovation unit in Ericsson R&D Centre in Croatia. His primary fields of interest include e-Health applications and software engineering practices. He holds a position of assistant professor at the University of Zagreb, in the Faculty of Electrical Engineering and Computing, Telecommunications Department. Dr. Dešić is main coordinator of Summer Camp.*

#### **Data migration tool**

Mentor(s): Ivo Topić

Team members: Danijela Mikuličić, Mario Čuljak

#### **Visualization tool for verification and troubleshooting of SIP related issues**

Mentor(s): Marija Juras

Team members: Nediljko Krstić, Petar Validžić

#### **Feature flow visualization tool**

Mentor(s): Goran Škugor, Jasna Lacmanović Čavka

Team members: Goran Bogovac, Tony Kusić

#### **Simulcast/Multistream webRTC Client**

Mentor(s): George Kakhadze, Björn Norhammar

Team members: Ante Babić, Blaž Marinović

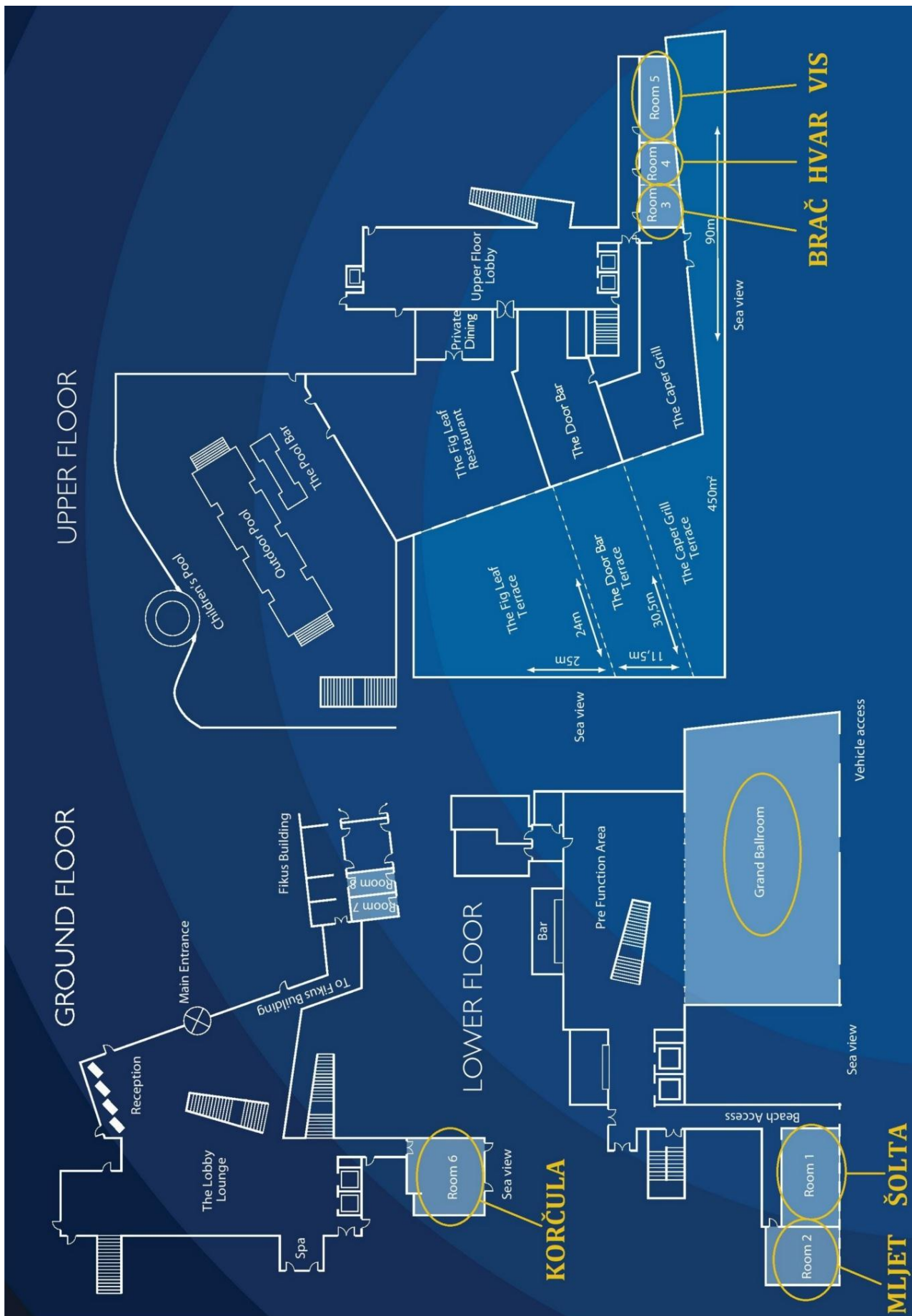
#### **Rapid Development: from natural language to class model**

Mentor(s): Marin Orlić, Nenad Ukić, Vedran Galetić

Team members: Nikola Badrov, Nataša Doko, Mirna Domančić, Ivan Mihanović, Josipa Nasutović



# HOTEL RADISSON BLU RESORT: FLOOR PLAN



# GENERAL INFORMATION



## SPLIT

### VENUE

The 22nd International Conference on Software, Telecommunications and Computer Networks (SoftCOM 2014) will be held in Split.

Split is the largest city on the Croatian coast of the Adriatic Sea with a population of 180.000. The visit of Split can offer the travellers an extraordinary city tour without any need to take buses to reach the centre. Even today as you pass along the south promenade of the Palace, you can feel Diocle's spirit. You can also feel the light breeze blowing from the sea as it seems to be playing through the openings of the Cryptoporticus, welcoming to this town, travellers for whom as Diocles said, there will always be a bed, food, drink, music and the presence of God.

### TRAVELING TO SPLIT

Split can be reached by air: directly from Amsterdam, Brussels, Frankfurt, London, Lyon, Manchester, Munich, Paris, Vienna and via Zagreb from all world airports. For more information please visit Airport Split-Kastela.

by ship: Split harbor is daily connected with Ancona. Ship connections are also available with Venice, Pescara and Bari.

### WEATHER

In September the weather in Split is very nice, with an average temperature of about 20 degrees Celsius and the sea temperature is agreeable for swimming.

### PROCEEDINGS

All participants will receive the Final Program and USB Proceedings when registering at the conference desk.

### LANGUAGE

The Conference language is English.

### REGISTRATION

Wednesday, September 18: 08:00-12:30, 14:30-18:30

Thursday, September 19: 08:00-11:00, 15:00-17:30

Friday, September 20, 08:00-11:30

### SECRETARY

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