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GENERAL CHAIR MESSAGE



Dear participants of the SoftCOM 2015 conference, it is my pleasure to welcome you in the capacity of a general chair. I am excited 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 society where every person and every industry is empowered to reach their full potential. 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. While the past decades of progress have shown great promise, this has only laid the foundation for what is set to come. We are now at an inflection point where the next wave of innovation in the form of mobile, broadband and cloud will be the catalyst for an entirely new economic model.

This new age will deliver growth and prosperity based on greater social cohesion and environmental sustainability. The resulting Networked Society holds the potential to truly shape the future and leave a positive legacy for generations to come.

The 23rd International Conference on Software, Telecommunications and Computer Networks (SoftCOM 2015), co-sponsored by the IEEE Communications Society, will be held in the beautiful city of Split and in the extraordinary tourist oasis Bol on the island of Brač, both located on the magnificent Croatian Adriatic coast. It will be my pleasure to meet you at the conference.

Welcome!

Siniša Krajnović, PhD

Vice President, Ericsson AB

TEHNIICAL PROGRAM CHAIRS MESSAGE

The 23rd Conference on Software, Telecommunications and Computer Networks (SoftCOM 2015) will be held in attractive ambience of the Elaphusa hotel, Bol (Island of Brac), September 16 to 18.

Researchers and experts from industry, research institutes and universities from 30 countries all around the world have submitted in total 152 papers for presentation at SoftCOM 2015. 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. 49% of submitted papers have been recommended for presentation within the technical program.

The technical conference program features eight general conference sessions, two symposia, and three special sessions. The Symposium on Environmental Electromagnetic Compatibility has been organized by researchers from University of Split. The Symposium on Green Networking has been organized in collaboration with the researchers from the Politecnico di Milano. The special sessions are dedicated to hot topics including: RFID Technologies and the Internet of Things, Smart Environment technology, and QoS in Wired and Wireless Networks.

In conjunction with the SoftCOM 2015 conference a professional Workshop on Software Engineering in Practice has been organized by the research group from Ericsson Nikola Tesla Company.

Besides that a Business Forum will be organized featuring invited talks, workshops and round tables with participation of managers, experts, and institutions' 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 Communication Society (ComSoc), Technical Committee of Communication Software for the support.

Program Committee Co-chairs

Nikola Rozic, Dinko Begusic

TECHNICAL PROGRAM COMMITTEE

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

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

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Vesna Roje, University of Split, Croatia

Mladen Russo, University of Split, Croatia

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Krzysztof Wesolowski, University of Poznan, Poland

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SoftCOM 2015 General Secretary

Petar Solic, University of Split, softcom@fesb.hr

UNIVERSITY OF SPLIT

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

**COMMUNICATIONS AND INFORMATION
SOCIETY, CROATIA (CCIS)**

Under the auspices of:

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SoftCOM 2015 PROGRAM OUTLINE

Wednesday, September 16, 2015 (location: Hotel Elaphusa)

09:00 Registration Open

10:00 – 10:30 Coffee break

10:30 – 13:00 Technical program, Professional program

Lunch time

15:00 – 16:30 Technical program, Professional program

16:30 – 17:00 Coffee break

17:00 – 18:30 Professional program

Thursday, September 17, 2015 (location: Hotel Elaphusa)

08:30 Registration Open

09:00 – 10:30 Technical program, Professional program, Business forum

10:30 – 11:00 Coffee break

11:30 - 13.00 Opening Ceremony, Keynote speech

Conference luncheon

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

19:00 – 20:00 Social Event

Friday, September 18, 2015 (location: Hotel Elaphusa)

08:30 Registration Open

08:30 – 10:00 Technical program

08:30 – 11:00 Professional program

11:30 – 18:00 Transfer to Split and Lunch

18:00 – 19:30 Guided Tour in Split

19:30 – 21:00 Evening in Diocletian Palace

Csaba Antal, PhD*Leader of the Technology group in Ericsson Hungary***Transformation to software only business in telecommunications**

This invited talk highlights challenges in software technologies triggered by recent trends in the telecommunications industry. Firstly, the adaptation of agile software development methodology replaced the traditional waterfall model, to fulfill business needs like efficiency, short time-to-market and frequent customer interactions. Secondly, there is a shift from developing dedicated software on a dedicated hardware to developing Virtualized Network Functions and deploy them in the cloud. All these changes triggered new challenges in software development, while the requirements of building complex networks remained unchanged: real-time, highly distributed, reliable communications infrastructure. The specific areas addressed by this presentation are software architecture, software reliability and development environments for large scale software in the perspective of the aspects above.



Csaba Antal received his M.Sc.E.E. and Ph.D. from Budapest University of Technology and Economics in 1994 and 2000, respectively. He was a visiting scientist at Telia Research in Sweden in 1997. He joined Ericsson Research and Development Hungary as a research fellow in 1999, doing research in IP and transport networks. Between 2003 and 2007, he led the transport, platform and networking groups in Ericsson Research Hungary. In 2008, he started to act as leader of technical managers in the development of wire line products, Telecom Server Platform, common components, IMS applications and user data management products. In 2011, he became the leader of the Technology group in Ericsson Hungary. He built a strategic system management active in various technology areas, including software technology, cloud infrastructure,

data management and end-to-end network performance. He has also been instrumental in strengthening innovation and university collaboration in Ericsson R&D Hungary.

TEHNICAL PROGRAM: GENERAL CONFERENCE

Wednesday, September 16

Wednesday, September 16, 10:30-13:00
(KORČULA)

S1: TELECOMUNICATION SERVICES AND QoS

Chair: Luigi Patrono, University of Salento, Italy

QoS Evaluation for different WLAN standards

Dardan Maraj (University of Sheffield, Greece); Ruzhdi Sefa (University of Prishtina, Kosovo); Arianit Maraj (Post and Telecom of Kosova, Kosova)

Performance Evaluation of QoS-CAODV, CAODV Routing Protocol in Cognitive Radio Ad-hoc Network

Mallat Yosra and Ayadi Mohamed (SUPCOM TUNIS, Tunisia); Aymen Ayari (SUPCOM of Tunisia & Telecommunication, Tunisia); Sami Tabaane (Sup Telecom, Tunisia)

A Modular Sampling Framework for Flexible Traffic Analysis

Joao Marco C. Silva, Paulo Carvalho and Solange Rito Lima (Centro Algoritmi, Universidade do Minho, Portugal)

Optimal Chunk Scheduling Algorithm Based On Taboo Search For Adaptive Live Video Streaming In CDN-P2P

Melika Meskovic (BH Telecom, Joint Stock Company, Tuzla, Bosnia and Herzegovina); Mladen Kos (University of Zagreb, Croatia); Amir Meskovic (Source Code Ltd., Bosnia and Herzegovina)

Wednesday, September 16, 10:30-13:00 (VIS)

S2: LEARNING/EDUCATION METHODOLOGY

Chair: Ivan Slapnicar, University of Split, Croatia

Predicting student's learning outcome from Learning Management system logs

Daniel Vasić (University of Mostar & Faculty of Science Math and Education, Bosnia and Herzegovina); Ljiljana Šerić (University of Split - Faculty of El. Eng., Mech. Eng. and Naval Arch., Croatia); Mirela Kundid (University of Mostar & Faculty of Machine Engineering and Computing, Bosnia and Herzegovina); Ana Pinjuh (Faculty of Mechanical Engineering and Computing, Bosnia and Herzegovina)

Behavioral pattern mining in web based educational system

Diana Halita, Sanda Dragos and Christian Sacarea (Babes-Bolyai University, Romania)

Implementation of method for generating concept map from unstructured text in the Croatian language

Krunoslav Žubrinčić, Ines Obradović and Tomo Sjekavica (University of Dubrovnik, Croatia)

SCORM-MPEG: an Ontological of Interoperable Metadata for Multimedia and e-Learning

Marcelo Correia Santos (UNICAMP São Paulo State Campinas University & SENAC São Paulo University, Brazil); Yuzo Iano (UNICAMP, Brazil)

Wednesday, September 16, 15:00-16:30 (VIS)

S3: COMMUNICATIONS SOFTWARE

Chair: Maja Stella, University of Split, Croatia

Estimating Software Development Effort Using Bayesian Networks

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

Automated web application functional size estimation based on a conceptual model

Denis Čeke (University of Tuzla, Bosnia and Herzegovina); Boris Milašinović (Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia)

A Configurable system for the definition and automatic calculation of a high number of derived discrete measures

Stefania Nanni (Lepida SpA, Italy); Gianluca Mazzini (LepidaSpA & UniFe, Italy)

Knowledge Visualization for Supporting Communication in Cardiovascular Risk Assessment Hypotheses

Dan Andrei Sitar Taut and Christian Sacarea (Babes-Bolyai University of Cluj-Napoca, Romania); Adela Viviana Sitar Taut (Iuliu Hatieganu University of Medicine and Pharmacy, Romania)

Architectures for an Efficient SMS Gateway Service

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

Architecture Improvements for an Efficient Emergency Network

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

Thursday, September 17

Thursday, September 17, 09:00-10:30 (KORCULA)

S4: MOBILE AND WIRELESS COMMUNICATIONS I

Chair: Toni Perković, University of Split, Croatia

Improved Physical Layer for Energy-Efficient M2M Communications over Cellular Networks

Ming Liu (Beijing Jiaotong University & Beijing Key Lab of Transportation Data Analysis and Mining, P.R. China); Matthieu Crussiere (IETR - Electronics and Telecommunications Research Institute of Rennes (IETR) & INSA - National Institute of Applied Sciences, France); Jean-Francois Helard (IETR, France)

Wireless Communication to monitor Rotating Electrical Machines

Sonia Ben Brahim (University of Carthage, Tunisia); Ridha Bouallegue (Innov'COM, Sup'Com., Tunisia); Jacques David and Tan-Hoa Vuong (LAPLACE, France)

Dynamic CoMP configuration for OFDMA networks under different user traffic scenarios

Yapeng Wang (MPI-QMUL Information System Research Centre, Macao); Xu Yang (Macao Polytechnic Institute, Macao); Liang Yang (Beijing University of Posts and Telecommunications, P.R. China)

A Protocol Extension for Selective Reprogramming of WSNs

Emanuel Lima, Paulo Carvalho and Oscar Gama (Centro Algoritmi, Universidade do Minho, Portugal)

Service Mediation in multihop Bluetooth Low Energy networks based on NDN approach

Andrsa Balogh (Budapest University of Technology and Economics, Hungary); Sandor Imre (Technical University of Budapest, Hungary); Karoly Lendvai and Sandor Szabo (Budapest University of Technology and Economics, Hungary)

Thursday, September 17, 15:00-16:30 (KORCULA)

S5: CLOUD COMPUTING

Chair: Claudia Canali, University of Modena and Reggio Emilia, Italy

Automatic parameter tuning for Class-Based VM Placement in Cloud infrastructures

Claudia Canali and Riccardo Lancellotti (University of Modena and Reggio Emilia, Italy)

Towards a SDN-based Architecture for Analyzing Network Traffic in Cloud Computing Infrastructures

Enrique Chirivella-Perez and Juan Gutierrez-Aguado (Universitat de Valencia, Spain); Jose Alcaraz-Calero (University of the West of Scotland, United Kingdom); Jose M. Claver (Universitat de Valencia, Spain)

Analyzing Incoming Workload in Cloud Business Services

Nikola Tankovic (Superius d.o.o., Croatia); Nikola Bogunovic (University of Zagreb, Croatia); Tihana Galinac Grbac (University of Rijeka & Faculty of Engineering, Croatia); Mario Zagar (University of Zagreb, Croatia)

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

S6: NETWORK OPERATION AND MANAGEMENT

Chair: Julije Ožegović, University of Split, Croatia

Assessment of Packet Latency on the 4G LTE S1-U Interface: Impact on End-User Throughput

Andrei Rusan and Radu A. Vasii (Politehnica University of Timisoara, Romania)

Heterogeneous Wi-Fi and VLC (RF-Optical) Wireless Access Architecture

Faruk Duvnjak (FESB - Split, Croatia); Julije Ozegovic and Ante Kristic (University of Split, Croatia)

Network performance monitoring within MPLS traffic engineering enabled networks

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

Centralized Management of Multiple WiFi Connectivity Services (Part I)

Elisa Benetti (LepidaSpA, Italy); Enrica Salbaroli and Mirko Pastorelli (Lepida SpA, Italy); Gianluca Mazzini (University of Ferrara and LepidaSpA, Italy)

Centralized Management of Multiple WiFi Connectivity Services (Part II)

Elisa Benetti (LepidaSpA, Italy); Enrica Salbaroli and Mirko Pastorelli (Lepida SpA, Italy); Gianluca Mazzini (University of Ferrara and LepidaSpA, Italy)

Friday, September 18

Friday, September 18, 08:30-10:00 (HVAR)

S7: SIGNAL PROCESSING AND CODING

Chair: Giovanni Cancellieri, Università Politecnica delle Marche, Italy

Low-rate LDPC Convolutional Codes with Short Constraint Length

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

Adaptive Modulation and Coding Scheme for MB-OFDM UWB Systems

Houda Chihi (Innov'Com, Tunisia), Raul De Lacerda (DRE/EMG/RSS, SUPELEC; France) and Ridha Bouallegue (Innov'Com, Tunisia)

PN code acquisition technique with an adaptive dwell time in DS-SS system

Hyobeen Park and Seongjoo Lee (Sejong University, Korea)

Renyi Entropy Based Failure Detection of Medical Electrodes

Ivan Marasovic (University, Croatia); Nicoletta Saulig (University of Rijeka, Croatia); Zeljka Milanovic (Faculty of Engineering, University of Rijeka, Croatia)

Constant Modulus Algorithm based on Fourth Order Moments Initialization

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

Friday, September 18, 08:30-10:00 (KORCULA)

S8: MOBILE AND WIRELESS COMMUNICATIONS II

Chair: Mario Čagalj, University of Split, Croatia

Software Parallel Implementation of a DS-CDMA Multiuser Detector

Luis C Goncalves (University of Aveiro, Portugal); Rui Martins (IEETA, Portugal); Antonio B Ferrari (University of Aveiro, Portugal)

Design of a multi-channel and reconfigurable RF sampling GNSS Receiver

Rim Barrak (SUPCom, Tunisia); Jihen Thabet (High School of Communications Tunis, Tunisia); Adel Ghazel (SUPCOM, Tunisia)

Qualifying CP Length for LTE FDD Downlink Channel with Small Delay Dispersion

Adriana Lipovac (University of Dubrovnik, Croatia)

Robust Distributed Beamforming Design in Amplify-and-Forward Relay Systems with Multiple User Pairs

Pei-Wen Hsieh (National ChiaoTung University, Taiwan); Ying-Tsung Lin and Sau-Gee Chen (National Chiao Tung University, Taiwan)

Novel technique of combination TDS and FDS to increase performance of UWB MBOFDM system for NLOS Channels with Large Delay CM3 and CM4

Naziha Nouri (Innov'COM Lab, Sup'Com, Tunisia) and Ridha Bouallegue (Innov'COM Lab, Sup'Com, Tunisia)

Optimization of Energy Efficiency in Radio Communication Networks using Adaptive Multicarrier Techniques

Bartosz Bossy and Hanna Bogucka (Poznan University of Technology, Poland)

TECHNICAL PROGRAM: SYMPOSIUMS, SPECIAL SESSIONS

Wednesday, September 16

Wednesday, September 16, 10:30-13:00 (HVAR)

SYM1/I: Symposium on Green Networking I

Symposium organizers: Antonio Capone, Politecnico di Milano, Josip Lorincz, University of Split, Croatia
Symposium chair: Josip Lorincz, University of Split, Croatia

Energy-Efficient Networks under Coordinated and Uncoordinated Sleeping Approaches

Juvencio Manjate (Royal Institute of Technology, Sweden); Markus Hidell (KTH Royal Institute of Technology, Sweden); Peter Sjödin (KTH, Sweden)

Energy-Fair Routing in Multi-Domain Green Networks

Tuğbagül Altan Akin and Didem Gözüpek (Gebze Technical University, Turkey)

Low Power Methodology for an ASIC design flow based on High-Level Synthesis

Fahad Bin Muslim, Affaq Qamar and Luciano Lavagno (Politecnico di Torino, Italy)

Energy-Aware Multi-layer Flexible Optical Network Operation

Vasileios Gkamas and Kostantinos Christodoulopoulos (University of Patras, Greece); Emmanouel Varvarigos (University of Patras & Computer Technology Institute, Greece)

Wednesday, September 16, 15:00-16:30 (KORCULA)

SS1: Special Session on RFID Technologies & the Internet of Things

Special Session organizer: Luigi Patrono, University of Salento, Italy
Special Session chair: Luigi Patrono, University of Salento, Italy

A Combined Batteryless Radio and WiFi Indoor Positioning System

Riad Kanan (Abu Dhabi University, United Arab Emirates); Obaidallah Elhassan (Abu Dhabi University, United Arab Emirates)

RFID-based Efficient Method for Parking Slot Car Detection

Petar Solic (University of Split & FESB, Croatia); Ivan Marasovic (University of Split & FESB, Croatia); Maria Laura Stefanizzi, Luigi Patrono and Luca Mainetti (University of Salento, Italy)

Asymptotic Analysis of Schoute's Estimate for Dynamic Frame Aloha

Luca Barletta (Technische Universität München, Germany); Flaminio Borgonovo and Ilario Filippini (Politecnico di Milano, Italy)

Design and Development of Compact UHF RFID Reader using SD interface

Seong Soo Park (SK Telecom, Korea); Jae Hwang Yu (SK Telecom, Korea)

A novel Rule-based Semantic Architecture for IoT Building Automation Systems

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

Unmanned Aircraft Vehicle Assisted WSN-based Border Surveillance

Sarra Berrahal (Communication Networks and Security Research Lab., University of Carthage, Tunisia); Jong-Hoon Kim (Discovery lab, Florida International University, USA); Slim Rekhis (University of Carthage & Communication Networks and Security Research Lab., Tunisia); Nouredine Boudriga (Communication Networks and Security Research Lab., University of Carthage, Tunisia); Deon Wilkins and Jaime Acevedo (Discovery lab, Florida International University, USA)

Wednesday, September 16, 15:00-16:30 (HVAR)

SYM1/II: Symposium on Green Networking II

Symposium organizers: Antonio Capone, Politecnico di Milano, Josip Lorincz, University of Split, Croatia
Symposium chair: Josip Lorincz, University of Split, Croatia

File Size-based Small Cell Connection in Phantom Cell Concept Energy Savings Schemes

Emmanuel TERNON and Patrick Agyapong (DOCOMO Euro-Labs, Germany); Armin Dekorsy (University of Bremen, Germany)

Effective Management of Green Cloud Data Centers Using Energy Storage Technologies

Amine Barkat and Antonio Capone (Politecnico di Milano, Italy)

Transient Departure Process in M/G/1/K-type Queue with Threshold Server's Waking Up

Wojciech M. Kempa and Dariusz Kurzyk (Silesian University of Technology, Poland)

Cross-over-net: An Energy-Aware Coordination Algorithm for WANETs based on Software-Defined Networking

Joaquin Aparicio (University of Deusto, Spain); Jon Legarda (Deusto Institute of Technology, Spain); Janire Larranaga (University of Deusto & Deustotech - Deusto Institute of Technology, Spain); Juan Jose Echevarria (University of Deusto, Spain)

Modeling Fuzzy Rules for Managing Power Consumption of Ethernet Switch

Alifia Fithritama (University of Lorraine, France); Eric Rondeau and Vincent Bombardier (CRAN, France); Jean-Philippe Georges (University Henri Poincaré, Nancy 1, France)

Thursday, September 17

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

SS2: Special Session on QoS in Wired and Wireless Networks

Special Session organizer: Pascal Lorenz, University of Haute Alsace, France
Special Session chair: Pascal Lorenz, University of Haute Alsace, France

On the Performance Evaluation of Bayesian Network Classifiers in Modulation Identification for Cooperative MIMO Systems

Wassim BEN CHIKHA (Tunisia Polytechnic School, Tunisia);
Attia Rabah (Ecole nationale d'ingenieur de Tunis, Tunisia)

A Novel Mobility-based COMP Handover Algorithm for LTE-A / 5G HetNets

Maissa Boujelben (Higher School of Communication of Tunis, Tunisia); Sonia Ben Rejeb (ISI, Tunisia); Sami Tabbane (Sup Telecom, Tunisia)

Fault-tolerant minimal retransmission mechanism with network coding

Samih Abdul-Nabi (Lebanese International University, Lebanon); Philippe Mary (INSA Rennes, IETR UMR CNRS, France); Jean-Francois Helard (IETR, France); Ayman Khalil (Institute of Electronics and Telecommunications of Rennes - IETR & INSA, France)

Fuzzy MADM Based Vertical Handover Algorithm for Enhancing Network Performances

Aymen Ben Zineb (Higher School of Communication Sup'Com Tunisia, Tunisia); Mohamed Ayadi (Sup'Com Tunisia, Tunisia); Sami Tabbane (Sup Telecom, Tunisia)

Measurement of DVB-S and DVB-S2 parameters

Kresimir Malaric (University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia); Ivan Suc (Faculty of Electrical Engineering and Computing, Croatia); Iva Bacic (Rochester Institute of Technology Croatia, Croatia)

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

SYM2/I: Symposium on Environmental Electromagnetic Compatibility I

Symposium organizers: Dragan Poljak, Vesna Roje, University of Split, Croatia
Symposium co-chairs: Dragan Poljak, Vesna Roje, University of Split, Croatia

Some Remarks Related to First 150 Years of Maxwell's Equations

Dragan Poljak (University of Split, Croatia); Bachir Nekhoul (University of Jijel, Algeria); Khalil El Khamichi Drissi (Universite Blaise Pascal & LASMEA Laboratory, France)

Representing measured lightning discharge currents by the multi-peaked function

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

Crosstalk Reduction Using Nonuniform Transmission Lines

Mnaouer Kachout, Jamel Bel Hadj Tahar and Fethi Choubani (Sup'Com, Tunisia)

Influence of the Soil Ionization on the Transient Current Induced along the Horizontal Grounding Electrode

Silvestar Sesnic and Dragan Poljak (University of Split, Croatia); Goran Knezic (FESB, University of Split, Croatia)

Thursday, September 17, 15:00-16:30 (VIS)

SS3: Special Session on Smart Environment Technologies

Special Session organizers: Mladen Russo, Maja Stella, University of Split, Croatia
Special Session co-chairs: Mladen Russo, Maja Stella, University of Split, Croatia

Intelligent Type 2 Fuzzy-based Mobile Application for indoor Geolocalization

Noura Baccar (University of Tunis Elmanar & Cynapsys, Tunisia); Ridha R. Bouallegue, B. (Ecole Supérieure des Communications de Tunis, Tunisia)

Relevant CIR Parameters selection for Fingerprinting Based Location Algorithm

Raida Zouari (ENIT, Tunisia); Iness Ahriz (CNAM, France); Rafik Zayani (Innov'COM Lab, Sup'Com, Tunisia); Ali Dziri (CNAM Paris, France); Ridha Bouallegue (Innov'COM @ Sup'Com, Tunisia)

Greedy localization approach in wireless sensors network

Iness Ahriz and Didier Le Ruyet (CNAM, France)

A Dual-Channel Beamformer Based on Time-delay Compensation Estimator and Shifted PCA for Speech Enhancement

Zhang Jie (Shenzhen Graduate School, Peking University, P.R. China)

An Approach to Wireless Sensor Network Design in Home Environment using ZigBee Protocol

Suad Kasapovic and Elvis Doric (University of Tuzla, Bosnia and Herzegovina); Lejla Banjanovic-Mehmedovic (University of Tuzla & Faculty of Electrical Engineering, Bosnia and Herzegovina)

Thursday, September 17, 15:00-16:30 (HVAR)

SYM2/II: Symposium on Environmental Electromagnetic Compatibility II

Symposium organizers: Dragan Poljak, Vesna Roje, University of Split, Croatia
Symposium co-chairs: Dragan Poljak, Vesna Roje, University of Split, Croatia

Evolution of a Double-Exponential Pulse Signal in a Rectangular Cavity Filled with Plasma

Fatih Erden (Turkish Naval Academy, Turkey)

Analysis of Multiple-Folded Spherical Helical Antenna using the Galerkin-Bubnov scheme of the Boundary Element Method

Anna Susnjara (University of Split, Croatia); Vicko Doric and Dragan Poljak (University of Split, FESB, Croatia); Maja Skiljo and Zoran Blazevic (University of Split, Croatia)

Electric Models for Calculation of Crosstalk: Analysis & Performance Evaluation

Mnaouer Kachout, Bel Hadj Tahar Jamel and Choubani Fethi (Innov'Com, Sup'Com, Tunisia)

Ultra-wideband Parabolic Bicone Antenna for Ground Penetrating Radar

Maja Skiljo, Zoran Blazevic and Dragan Poljak (University of Split, Croatia)

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

SYM2/III: Symposium on Environmental Electromagnetic Compatibility III

Symposium organizers: Dragan Poljak, Vesna Roje, University of Split, Croatia
Symposium co-chairs: Dragan Poljak, Vesna Roje, University of Split, Croatia

Antenna Model for Passive Myelinated Nerve Fiber

Ivana Zulim (University of Split, Croatia); Vicko Doric (University of Split, FESB, Croatia); Dragan Poljak (University

of Split, Croatia); Khalil El Khamlichi Drissi (Universite Blaise Pascal & LASMEA Laboratory, France)

Effects of Electromagnetic Polarization in Homogeneous Electromagnetic-Thermal Dosimetry Model of Human Brain

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

2.4 GHz Micro-strip Patch Antenna Array with Suppressed Sidelobes

Haris Hadzic (University of Split, Croatia); Wally Verzotti (PCE-Split, Croatia); Zoran Blazevic and Maja Skiljo (University of Split, Croatia)

TIMETABLE A: TECHNICAL PROGRAM

| Hotel Elaphusa, Bol, Wednesday, September 16 | | | |
|--|---|--|------------------------------------|
| Time/Hall | HVAR | KORČULA | VIS |
| 09:00 | REGISTRATION* | | |
| 10:00 - 10:30 | Coffee Break | | |
| 10:30 - 13:00 | SYM1/I: Symposium on Green Networking I | S1: Telecommunication Services and QoS | S2: Learning/Education Methodology |
| 13:00 - 15:00 | Lunch | | |
| 15:00 - 16:30 | SYM1/II: Symposium on Green Networking II | SS1: Special session on RFID technologies & the Internet of things | S3: Communications Software |
| 16:30 - 17:00 | Coffee Break | | |

| Hotel Elaphusa, Bol, Thursday, September 17 | | | |
|---|---|--|--|
| Time/Hall | HVAR | KORČULA | VIS |
| 09:00 - 10:30 | SYM2/I: Symposium on Environmental Electromagnetic Compatibility I | S4: Mobile and Wireless Communications I | SS2: Special Session on QoS in Wired and Wireless Networks |
| 10:30 - 11:00 | Coffee Break | | |
| 11:30 - 13:00 | OPENING CEREMONY | | |
| | Keynote speech(BRAČ): Csaba Antal, Transformation to software only business in telecommunication | | |
| 13:00 - 15:00 | Conference Luncheon | | |
| 15:00 - 16:30 | SYM2/II: Symposium on Environmental Electromagnetic Compatibility II | S5: Cloud Computing | SS3: Special Session on Smart Environment Technologies |
| 16:30 - 17:00 | Coffee Break | | |
| 17:00 - 18:30 | SYM2/III: Symposium on Environmental Electromagnetic Compatibility III | S6: Network Operation and Management | WI: Workshop on Innovation in ICT |
| 19:00 - 20:00 | Social Event | | |

| Hotel Elaphusa, Bol, Friday, September 18 | | | |
|---|----------------------------------|---|-----|
| Time/Hall | HVAR | KORČULA | VIS |
| 08:30 - 10:00 | S7: Signal Processing and Coding | S8: Mobile and Wireless Communications II | |
| 10:00-11:00 | Coffee Break | | |
| 11:30 - 18:00 | Transfer to Split and Lunch | | |
| 18:00 - 19:30 | Guided Tour in Split | | |
| 19:30 - 21:00 | Evening in Diocletian Palace | | |

* Registration: Wednesday (09:00 – 18:30), Thursday (08:30 – 18:00), Friday (08:30 – 10:00)

TIMETABLE B: TUTORIALS, WORKSHOPS, BUSINESS FORUM

Hotel Elaphusa, Bol, Wednesday, September 16

| Time/Hall | BRAČ | ŠOLTA |
|---------------|---|--|
| 09:00 | REGISTRATION* | |
| 10:00 - 10:30 | Coffee Break | |
| 10:30 - 13:00 | WICT/I: Workshop on Information and Communication Technologies I | Tutorial T2 (M. Helard, M.Crussiere, J.C.Prevotet, Y.Kokar) <i>Application of Time Reversal Principles to Wireless Communications: from Single-User SISO to Multiple-User Large Scale MIMO Scenarios</i> |
| 13:00 - 15:00 | Lunch | |
| 15:00 - 16:30 | WICT/II: Workshop on Information and Communication Technologies II | Tutorial T1 (I. Slapnicar) <i>Julia – Programming Language for the 21st Century</i> |
| 16:30 - 17:00 | Coffee Break | |
| 17:00 - 18:30 | WICT/III: Workshop on Information and Communication Technologies III | Tutorial T3 (D.Poljak) <i>Methods of Computational Electromagnetics with Applications in Electromagnetic Compatibility, Bioelectromagnetics and Magnetohydrodynamics (STARTS AT: 18:00)</i> |

Hotel Elaphusa, Bol, Thursday, September 17

| Time/Hall | BRAČ | ŠOLTA |
|---------------|--|--|
| 09:00 - 10:30 | P1W: Poster Session (Hall in front of Brač, 9:00-11:00) | Presentation: <i>Single RAN Advanced – Zero Emission,</i> Darko Giljević, Nokia, Croatia |
| 10:30 - 11:00 | Coffee Break | |
| 11:30 - 13:00 | OPENING CEREMONY | |
| | Keynote speech (BRAČ): Csaba Antal , <i>Transformation to software only business in telecommunication</i> | |
| 13:00 - 15:00 | Conference Luncheon | |
| 15:00 - 16:30 | WSEP: Fourth Workshop on Software Engineering in Practice | Round Table on Education in ICT |
| 16:30 - 17:00 | Coffee Break | |
| 17:00 - 18:30 | WESC: Ericsson Nikola Tesla Summer Camp 2015 Workshop | Round Table: <i>Broadband Internet Access on Islands</i> |
| 19:00 - 20:00 | Social Event | |

Hotel Elaphusa, Bol, Friday, September 18

| Time/Hall | BRAČ | ŠOLTA |
|---------------|--|---|
| 08:30 - 11:00 | Tutorial T5 (P. Lorenz) <i>Architectures of Next Generation Wireless Networks</i> | Tutorial T4 (D. Thomas) Experimental Measurements of Stochastic Field Propagation |
| 11:30 - 16:30 | Transfer to Split and Lunch | |
| 17:00 - 19:00 | Guided Tour in Split | |
| 19:00 - 21:00 | Evening in Diocletian Palace | |

* Registration: Wednesday (09:00 – 18:30), Thursday (08:30 – 18:00), Friday (08:30 – 10:00)

PROFESSIONAL PROGRAM: WORKSHOP ON ICT

Wednesday, September 16

Wednesday, September 16, 10:30-13:00 (BRAC)

WICT/I: Workshop on Information and Communication Technologies I

Chair: Matko Saric, University of Split, Croatia

Improving public transport services using mobile communication technologies

Zoran Civadelic, Mico Dujak and Kresimir Vidovic (Ericsson Nikola Tesla, Croatia); Pamela Miletic (University of Zagreb, Croatia)

Optimization Models for Hybrid Optical-Wireless Networks

Damir Breskovic (FESB, University of Split & Ericsson Nikola Tesla Servisi, Croatia)

Simulation of Blackhole and Greyhole Attacks in MANETs using NS3

Rania Said and Hisham Othman (German University in Cairo, Egypt)

Impact analysis of self-similarity phenomena on QoS in telecommunication network

Marija Cagalj (Croatian Telecom, Croatia)

Wednesday, September 16, 15:00-16:30 (BRAC)

WICT/II: Workshop on Information and Communication Technologies II

Chair: Milutin Kapov, University of Split, Croatia

Computerized Support for Construction of Error Control Run Length Limited Block Codes

Nikola Lescinska and Peter Farkas (Slovak University of Technology, Slovakia); Eugen Ruzicky (Pan-European University, Slovakia)

Level Crossing Rate of Wireless Relay System with Three Sections Output Signal Envelope in the Presence of Multipath $k-\mu$ Fading

Danijela Aleksic (College of Applied Technical Sciences, Nis, Serbia); Dragana Krstic, Goran Petkovic and Ivica Marjanovic (Faculty of Electronic Engineering, University of Nis, Serbia); Mihajlo Stefanovic (University of Nis, Serbia)

Improved Simulation Model for Mobile-to-Mobile Rayleigh Fading Channels Based on Random Walk Process

Souhail Haggui (GRES'COM-Lab & Higher School of Communication of Tunis (Sup'com) Carthage University, Tunis-Tunisia, Tunisia); Fatma Rouissi (Ecole Supérieure des communications de Tunis, Tunisia); Yosra Mlayeh (Ecole Supérieure des Communications de Tunis, SUPCOM, Tunisia); Fethi Tlili (Ecole Supérieure de Communications de Tunis, Tunisia)

Implementation of an integrated mixed signal controller for active phased array radar systems

Ante Gotovac (Rudjera Boskovic bb, Croatia); Linda Vickovic (University of Split, Croatia); Sven Gotovac (University of Split & FESB, Croatia)

Wednesday, September 16, 17:00-18:30 (BRAC)

WICT/III: Workshop on Information and Communication Technologies III

Chair: Milutin Kapov, University of Split, Croatia

Load-Balancing in Centralized Traffic Routing (Invited paper)

Srecko Krile (University of Dubrovnik, Croatia)

CCOD-RP: Routing Protocol for Cognitive Radio Ad Hoc Networks

Mallat Yosra and Ayadi Mohamed (SUPCOM TUNIS, Tunisia)

A Downlink Scheduling Algorithm Based on Cooperative Game Theory in LTE Networks

Samia Dardouri (ENIT, Tunisia); Anne Wei (Conservatoire National des Arts et Metiers, France); Ridha R. Bouallegue, B. (Ecole Supérieure des Communications de Tunis, Tunisia)

AnalyzER: Tailoring an Inter-Domain Traffic Monitoring Tool

Andrea Odorizzi (Lepida Spa, Italy); Elisa Benetti (LepidaSpA, Italy); Gianluca Mazzini (LepidaSpA, Italy); Aruna Prem Bianzino (Grupo Innovati, Spain); Stefano Guerrini (University of Ferrara, Italy)

AnalyzER: Monitoring Inter-Domain Traffic and Pushing Inter-Domain Policies

Elisa Benetti (LepidaSpA, Italy); Aruna Prem Bianzino (Grupo Innovati, Spain); Andrea Odorizzi (Lepida Spa, Italy); Gianluca Mazzini (LepidaSpA & UniFe, Italy); Stefano Guerrini (University of Ferrara, Italy)

Performance of VoLTE call with precondition and without precondition

Chunlin Yang (Microsoft Corp, USA)

Thursday, September 17

Thursday, September 17, 09:00-11:00 (HALL IN FRONT OF BRAC)

P1W: Poster Session

Chair: Toni Perković, University of Split, Croatia

LEO Mobile

Biljana Stojaković (University of Applied Sciences, Zagreb); Mario Pavic (University of Applied Sciences, Zagreb); Mario Juric (University of Applied Sciences, Zagreb)

FOURTH 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 2015 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 ongoing trends in software industry and main discrepancy between theory and practice will be discussed. The focus is on the software for the “everything connected” era. What can software engineering do to enable this happened and working?

Nenad Ukić, Robert Inkret, Marijan Zemljic: Towards executable UML modelling: benefits and challenges

The presentation will give overview of current state-of-the-art in executable UML design modelling. Special focus will be given on Ericsson activities in this area and challenges that we are faced with. Some of the questions that we will try to answer are: What are the benefits of executable modelling? Which executable UML methodologies exist and what are their comparative advantages? How mature executable modelling technologies and tools are?

Ivan Skuliber: Software engineering techniques and tools – What worked for us in a few ICT projects in Ericsson Nikola Tesla

There is a lot of discussion and effort on moving from the old ways to the new „agile“ ways of software engineering. But many ICT projects still fail regardless of software engineering process used. So, what worked for us in successful software delivery in practice?

Ivana Stupar, Goran Kopčak: Improving the Scalability of Cloud-based Solutions: The Software Engineering Approach

The increasing usage of cloud computing paradigms based on the possibilities of reducing operative cost of the service, and offering the extensive computing resources used for ensuring service scalability. However, the migration to the cloud environment itself does not solve all service performance and scalability issues, and troubleshooting in complex cloud environments is usually not an easy task. This presentation brings an overview of the software engineering approach dealing with the cloud service scalability issues used throughout the method and tools developed by the EU FP7 project CloudScale.

Round table: Open discussion between Academia and Industry

The main question under topic is: what is needed to have good engineers for software development? Are we ready for coming software dominated era or we need fast and systematic change?

Participants: Industry and Academia representative + present auditorium

Moderator: Darko Huljenic

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

ROUND TABLE ON INNOVATION IN ICT

This round table will host some of Croatia's entrepreneurs with different backgrounds and previous experiences. We will discuss topics like the "Cold start" problem, relations to the government, relations to the university, human resources, software outsourcing etc. Audience will be able to step into the discussion, ask questions or provide comments of their own.

Open discussion guests will also talk about their good and bad moves, provide advices based on their experience for the attendees and possibly hear about your ideas.

Panelists:



Morten Smalby, Sol Itum – entrepreneur originating from Denmark with previous experiences from Germany. Now he is living in Croatia for almost 10 years, and will talk about building travel / tourism products.

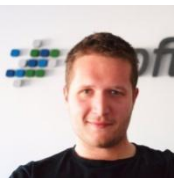


Mateo Perak, Profico – a local entrepreneur currently leading a software outsourcing agency in Split. Mateo will discuss the local entrepreneurship problems and benefits, financing and human resources.



Dario Boras, Amplifico – just recently went from finishing the college to starting his own company dealing in Internet of Things and smart sensors. Dario will talk about the Cold start problem, getting information and the role of experience.

Moderator:



Ante Dagelić, FESB – currently assistant teacher at FESB working on PhD in software security and software architecture design. Ante is also an entrepreneur having experience in product design and development and will moderate the discussion.

Ivan Slapničar, PhD*University of Split, FESB, Split, Croatia***Julia – Programming Language for the 21st Century**

Abstract: Julia is a high-level, high-performance dynamic programming language for technical computing, with syntax that is familiar to users of other technical computing environments. It provides a sophisticated compiler, distributed parallel execution, numerical accuracy, and an extensive mathematical function library. Julia's Base library, largely written in Julia itself, also integrates mature, best-of-breed open source C and Fortran libraries for linear algebra, random number generation, signal processing, and string processing. In addition, the Julia developer community is contributing a number of external packages through Julia's built-in package manager at a rapid pace. Julia, a collaboration between the IPython and Julia communities, provides a powerful browser-based graphical notebook interface to Julia. Julia programs are organized around multiple dispatch; by defining functions and overloading them for different combinations of argument types, which can also be user-defined." (from <http://julialang.org>)

In this tutorial we will cover basics of Julia principles and usage, and answer the two crucial questions: What is Julia good for? And What is Julia not good for (yet)?



Biography: Ivan Slapničar was born on 13 July 1961. He received his BSc in 1984, his MSc in 1988 in Mathematics from the University of Zagreb, Croatia, and PhD (dr. rer. nat.) in Mathematics in 1992 from the Fernuniversität Hagen, Germany, with summa cum laude. He is Professor and Head of the Chair for Mathematics at the Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture at the University of Split. His research interests include linear algebra, numerical linear algebra and applications. Professor Slapničar was Visiting Professor at the Utah State University in 2001/02, Visiting Researcher at TU Berlin with the FP7 People "Marie Curie" Intra-European Fellowship in 2009/10, and Fulbright-Schuman International Educator/Lecturer at MIT in 2014, where he worked closely with the Julia group. To date Professor Slapničar has published more than 20 journal papers in the area of operator theory, linear algebra, numerical linear algebra and applications and was PI in several national scientific grants.

Maryline Helard, PhD**Matthieu Crussiere, PhD****Jean-Christophe Prevotet, PhD***INSA de Rennes, IETR and IRT B--COM Labs
Rennes, France***Yvan Kokar, Ing***INSA de Rennes, IETR Lab
Rennes, France***Application of Time Reversal Principles to Wireless Communications: from Single-User SISO to Multiple-User Large Scale MIMO Scenarios**

Abstract: Within the wide landscape of signal processing techniques for wireless communications, Time Reversal (TR) is today considered as one of the very promising strategies for green communications and multi-user multiplexing in particular thanks to its good spatial and temporal focusing properties. Firstly introduced for ultrasound and underwater acoustic waves, TR has more recently been applied to electromagnetic waves in the context of wireless communications. TR turns out to be a simple and efficient pre-filtering technique suitable for low power transmissions, multiple user discrimination and also leads to low-complexity receivers. In this tutorial, we intend to provide a comprehensive and in-depth overview on the TR paradigm, from theoretical aspects to practical issues. We will first give the necessary background to understand the physical nature of the TR concept, based on wave propagation and Maxwell theory, and will then give and discuss the analytical and simulation tools that have to be used from a digital communication and signal processing point of view in order to quantify the performance of TR, both in terms of system capacity and bit error rate. On this basis, a critical analysis of the state of the art of TR for wireless communications will be exposed, from UWB (Ultra Wideband) systems to multi-antenna narrow band systems. We will address various system architectures from a low to a large number of transmit antennas and for single-user and multiple-user transmission scenarios. Throughout this tutorial, we will be giving the latest insights on TR, highlighting the interrelations or the possible hybridizations with other very popular schemes such as multicarrier modulations, multiple antenna systems, beamforming or spatial multiplexing, and massive or large scale antenna systems. We will provide all the material to better understand the potential of TR in the perspective of the design of future wireless communication networks. The session will

end with the presentation of a proof of concept study, exhibiting the technical challenges for the implementation of TR-based schemes in real systems.



Biography: Maryline H  lard received the PhD degrees from INSA (National Institute of Applied Sciences) of Rennes and the Habilitation degree from Rennes 1 University in 1984 and 2004 respectively. In 1985, she joined France Telecom Research Laboratory as a research engineer and in 1991 she started carrying out physical layer studies in the field of digital television and wireless communications. In 2007, she joined INSA as a Professor and is currently the co-director of the Communication Department at IETR (Electronics and Telecommunications Institute of Rennes). In 2013, she became a research fellow at IRT (Institut de Recherche Technologique) Bcom. She holds 25 patents and has published more than 30 journal papers and 100 peer-reviewed conference papers. Her current research interests are in the areas of digital communications such as equalization, synchronization, iterative processing, OFDM, MC-CDMA, channel estimation, and MIMO techniques applied to wireless communications as well as ADSL and optical systems. She was involved in several French and European collaborative research projects and participated for the European commission to the selection of research projects. She works as reviewer and chair for numerous international conferences. She has been general Chair of the IEEE-sponsored IWCLD 2011 and in the steering committee of IWCLD 2013. She has been a guest editor for IEEE Vehicular Technology Magazine in 2014.



Biography: Matthieu Cruss  re received the Ph.D. degree in electrical engineering from the National Institute of Applied Sciences (INSA), Rennes, France, in 2005. He then joined the Department of Telecommunications and Electronic Engineering at INSA as an Associate Professor and was involved in the Digital Communication Department of the Electronics and Telecommunications Institute of Rennes (IETR), France. In 2013, he became a research fellow at the Institute of Research and Technology (IRT) B-COM in Rennes. His main research interests lie in digital communications and signal processing techniques. His first works were focused on the optimization of high-bit rate power-line communications using hybrid multicarrier and spread-spectrum waveforms. These last years, his research activities have been dedicated to adaptive resource allocation, cross-layer mechanism and system design in the context of multicarrier and multiple antenna systems. He is author or co-author of more than 80 technical papers in international conferences and journals. He was involved in several European and French national research projects in the field of power-line communications, broadcasting systems, ultra wideband and mobile radio communications. He has been involved in the technical program committee of different IEEE conferences, including ICT, PIMRC and VTC. He was TPC chair and co-organizer of the 3rd IWCLD workshop, co-sponsored by IEEE.



Biography: Jean-Christophe Pr  votet obtained his Phd in 2003 from the Pierre et Marie Curie University. He is currently an associate professor at IETR/INSA de Rennes. His major interests are embedded and reconfigurable systems and real time systems in general. In particular, his applicative subjects deal with communication systems and the way to optimize their architecture onto real platform. He is also deeply involved in the real time management of these communication platforms under the supervision of an embedded operating system.



Biography: Yvan Kokar received the Master's degree in Engineering from the Montpellier university graduate engineering school, Montpellier, France, in 2004. In 2006, he joined the Electronics and Telecommunications Institute of Rennes (IETR) Laboratory, INSA, as a Research Engineer. His research interests lie at the intersection of communication theory, wireless networks and their implementation through hardware and software defined. He was involved in several partnership projects with industry and academia. Recently, he was in charge of the prototype development in the framework of the French research project ANR-TRIMARAN dealing with TR techniques combined with OFDM.

Dragan Poljak, PhD*University of Split, FESB Split, Croatia***Methods of Computational Electromagnetics with Applications in Electromagnetic Compatibility, Bioelectromagnetics and Magnetohydrodynamics**

Abstract: The presentation starts with some general aspects of numerical 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 solving the integral equations in both frequency and time domain will be discussed. Applications pertaining to dipoles, Yagi-Uda arrays and logarithmic-periodic dipole antennas (LPDA) will be given and followed 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 studies of realistic antenna systems for air traffic control and ground penetrating radar (GPR) applications, overhead and buried transmission 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 related to possible adverse health effects will be outlined. Also, some biomedical application of electromagnetic fields, with particular emphasis on transcranial magnetic stimulation (TMS), will be covered. Furthermore some stochastic analysis methods applied to area of GPR and human exposure to electromagnetic fields will be presented. 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 Board 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.

Dave Thomas, PhD*University of Nottingham, The George Green Institute for Electromagnetics Research Nottingham, UK***Experimental Measurements of Stochastic Field Propagation**

Abstract: Near field measurement and modelling techniques for electronic equipment have been developed for many years. The complexity of modern electronics now requires a statistical approach. Efficient modelling tools for describing noisy electromagnetic fields in complex environments is paramount for tackling the development of the next generation of integrated circuits and chip architectures. C2C communication and wireless links between printed circuit boards operating as Multiple Input Multiple Output (MIMO) devices will become dominant features overcoming the information bottleneck due to wired connections. Designing the architecture of these wireless C2C networks will challenge standard engineering design tools. Device modelling and chip optimization procedures need to be fundamentally based on the underlying physics for determining the electromagnetic fields, the noise models and complex interference pattern. In addition, the input signals of modern communication systems are modulated, coded, noisy and eventually disturbed by other signals and thus extremely complex. To simulate the reaction of complex wireless C2C elements, new electromagnetic field simulation techniques are needed to describe a realistic system response for the development of future communication circuits, chips and systems. This presentation will review recent advances both in near field scanning of stochastic electromagnetic fields the characterisation of which will make possible to deliver the breakthroughs necessary to enable this future emerging technologies. New insight in wave modelling in complex environments based on dynamical systems theory and random matrix theory make it possible to envisage wireless communication on a chip level. This opens completely new pathways for chip design, for carrier frequency ranges as well as for energy efficiency and miniaturisation, which will shape the electronic consumer market in the 21st century and worldwide.



Biography: Dave Thomas is a Professor of Electromagnetics Applications and Director of The George Green Institute for Electromagnetics Research, The University of Nottingham UK. His research interests are in electromagnetic compatibility, electromagnetic simulation, power system transients and power system protection with a particular interest in stochastic fields and uncertainty in electromagnetics. He is a member of CIGRE and convenor for Joint Working Group C4.31 "EMC between communication circuits and power systems". He is also Chair for the IEEE EMC Technical committee T7 on Low Frequency EMC, Chair of COST Action IC 1407 "Advanced Characterisation and Classification of Radiated Emissions in Densely Integrated Technologies (ACCREDIT)" and a member of the EMC Europe International Steering Committee.

Pascal Lorenz, PhD*Clermont University of Haute Alsace, France***Architectures of Next Generation 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. 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) 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 2007-2011, ICC 2008-2010, ICC'2014 and 2016. 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 associate Editor for International Journal of Communication Systems (IJCS-Wiley), Journal on Security and Communication Networks (SCN-Wiley) and International Journal of Business Data Communications and Networking, Journal of Network and Computer Applications (JNCA-Elsevier). 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.

BUSINESS FORUM

Thursday, September 17, 09:00 – 10:30 (SOLTA)

PRESENTATION

Darko Giljević

Nokia, Croatia

Single RAN Advanced – Zero Emission

Nokia vision is 'expand the human possibilities of connected world' in a responsible way means as an example that we design our products more energy efficient than earlier models and that we use in our own operations renewable energy source where available, e.g. in Finland 100% of electricity we use in our premises are from renewable energy sources.

Nokia Networks has enhanced its Single Radio Access Network (SRAN) Advanced portfolio to enable operators to modernize their base station sites to achieve up to a 70% reduction in site energy consumption and CO2 emissions. The portfolio also allows for the first time a broader use of renewable energy sources like solar, wind and fuel cells, making them viable for powering base station sites.

Meanwhile, the cost of solar energy systems has fallen by more than 90% during last ten years.

Together, these developments mean that, for the first time, it is affordable for operators to build base station sites with zero CO2 emissions for all electricity grid situations, from good grid to no grid.



Darko Giljević graduated at Faculty for Electrotechnical engineering and Computing in Zagreb in 1998. He started business career at Pliva pharmaceutical company as an engineer for computer networks. Shifting to Siemens in 2000. as a project leader in mobile networks R&D. Since 2005. he is working with Customer operations for telekom operators. With joining Nokia and Siemens into new company NSN in 2008. working as Account Manager with responsibility for local and telekom clients in the region.

WESC: ERICSSON NIKOLA TESLA SUMMER CAMP 2015 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 600 students participated. Students work five weeks on real problems in real industrial environment with mentors both from the company and universities. This year 62 students from Croatia (universities of Zagreb, Split, Osijek, Rijeka) and Bosnia & Herzegovina (universities of Sarajevo and Tuzla) 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.

Automated CUDB (Centralized User Database) upgrade in virtual environment

Students: Ante Rota, Zvonimir Peran

Mentors: Sanja Huljić, Vice Radman

Automatic MDE Packager

Students: Ana Mamić, Fani Bajić, Jakov Kristian Krstulović

Mentors: Nikša Marinković, Ivan Grljušić

Automation of health check process for Integrated Site (IS) node

Students: Lovre Šušnjara, Ivan Runjić, Ante Rade

Mentors: Ivan Topić, Zoran Livajić, Ivan Kalaica

Finding relevant colleagues on given topic

Students: Josip Vuković, Ante Rozić, Luka Dragun

Mentor: Remi Tassing (Ericsson Sweden)

Network Sensitivity Analysis Tool

Students: Katarina Radoš, Matea Tomeljak

Mentors: Daksh Sadarangani (Ericsson Australia)

OpenLDAP on OpenStack

Students: Rendić Nikola, Senta Duje

Mentors: Nataša Doko, Vicko Vitasović

ROUND TABLE

Broadband Internet access as a basis for succesful inclusion of adriatic islands in digital markets of Republic of Croatia and European Union

The concept of ubiquitous broadband is not only the imperative of the economic development and inevitable factor of provision of more efficient systems (health, education, science, culture, tourism, ...). Broadband Internet access increases the quality of life for population and makes the economy more dynamic by increasing the employment, overall economic growth and the development of the society, especially in the informatically intensive sectors.

The question is: what are the obstacles to easier and faster inclusion of Adriatic islands to digital markets of Croatia and European Union?

The round table is organized within the project „Looking to the future 2020“ which brings together the Croatian regulatory agency for network technology (HAKOM) and the faculties of the universities of Split, Zagreb and Osijek, as well as telecom operators and companies from telecom industry.

Organizing committee:

Mario Weber, M.Sc., director, HAKOM, Zagreb

Dinko Begušić, Professor, University of Split, FESB, Split

Gordan Ježić, Professor, University of Zagreb, FER, Zagreb

Moderator:

Mario Weber, M.Sc., director, HAKOM

Panelists:

Marijan Bolarić, PhD, member of the Council, HAKOM

Joško Radić, Assistant Professor, University of Split, FESB

Marija Boban, Assistant Professor, University of Split

Marin Vuković, Assistant Professor, University of Zagreb

Bartul Bakulić, director of the primary school Bol

Thursday, September 17, 15:00 – 16:30 (SOLTA)

ROUND TABLE ON EDUCATION IN ICT

The area of Information and Communication Technology is one of the most dynamic sectors of the global economy. The development of adequate educational system and programmes is a challenging task.

The round table will provide an open forum for discussion on a number of open issues. The topics will include the development and current state of education programmes in the area of ICT on Croatian universities and worldwide, the current activities and plans for further development as well as the impact of the implementation of the new Croatian qualification framework. The list of panelists will include representatives of the leading Croatian Faculties with study programmes in the area of ICT.

Moderator:

prof. dr. sc. Tomislav Kilić, University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Panelists:

Prof. dr. sc. Maja Matijašević, University of Zagreb, Faculty of Electrical Engineering and Computing

Prof. dr. sc. Drago Žagar, University of Osijek, Faculty of Electrical Engineering

Neven Bulić, Assistant Professor, University of Rijeka, Faculty of Engineering

Prof. dr. sc. Tomislav Kilić, University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture



Tomislav Kilić received his M.S. degree from the Faculty of Electrical Engineering and Computing, University of Zagreb in 1996. and Ph.D. degree from Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture of Split in 2001. He has served as Vice Dean for Education and as Dean of Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture of Split as well as Vice Rector for Education of the University of Split. Currently he is Full Professor at Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture, University of Split. He has been actively involved in the implementation of study programmes in accordance with Bologna process on the university level as well national level. He is a Member of Accreditation Council of Agency for Science and Higher Education and a Member of the Sectoral Council for Electrical Engineering and Computing. He has been appointed as an Expert on the Bologna process and higher education in the European Platform: Europe – wide platform of experts in higher education and Bologna process.

Thursday, September 17, 17:00 – 18:30 (LASTOVO)

ROUND TABLE ON APPLICATION OF UNMANNED AERIAL VEHICLES IN WILDERNESS SEARCH AND RESCUE PROCESS

Wilderness Search and Rescue (WiSAR) is the process of finding and assisting persons who are lost in remote wilderness areas. Because such areas are often rugged or relatively inaccessible, searching for missing persons can take huge amounts of time and resources. Camera-equipped mini-Unmanned Aerial Vehicles (UAVs) have the potential for speeding up the search process by enabling searchers to view aerial photo or video of an area of interest while closely coordinating with nearby ground searchers.

The round table will provide an open forum for discussion on a number of open issues.

1. Technical and practical issues: camera resolution, settings, environmental conditions, thermal camera, ...
2. Computer aid image analyses and tools to identify objects of interest.
3. Mapping of the searched area on GIS maps and probability calculation of finding the missing person.
4. Online image transmission from UAV.
5. Using various types of UAV or UAV's System, in WiSAR (autonomy, multiple cooperative UAVs, ...)
6. Application in other emergency situations like forest fires, earthquake, floods, ...
7. Project application and project partners.

Moderator:

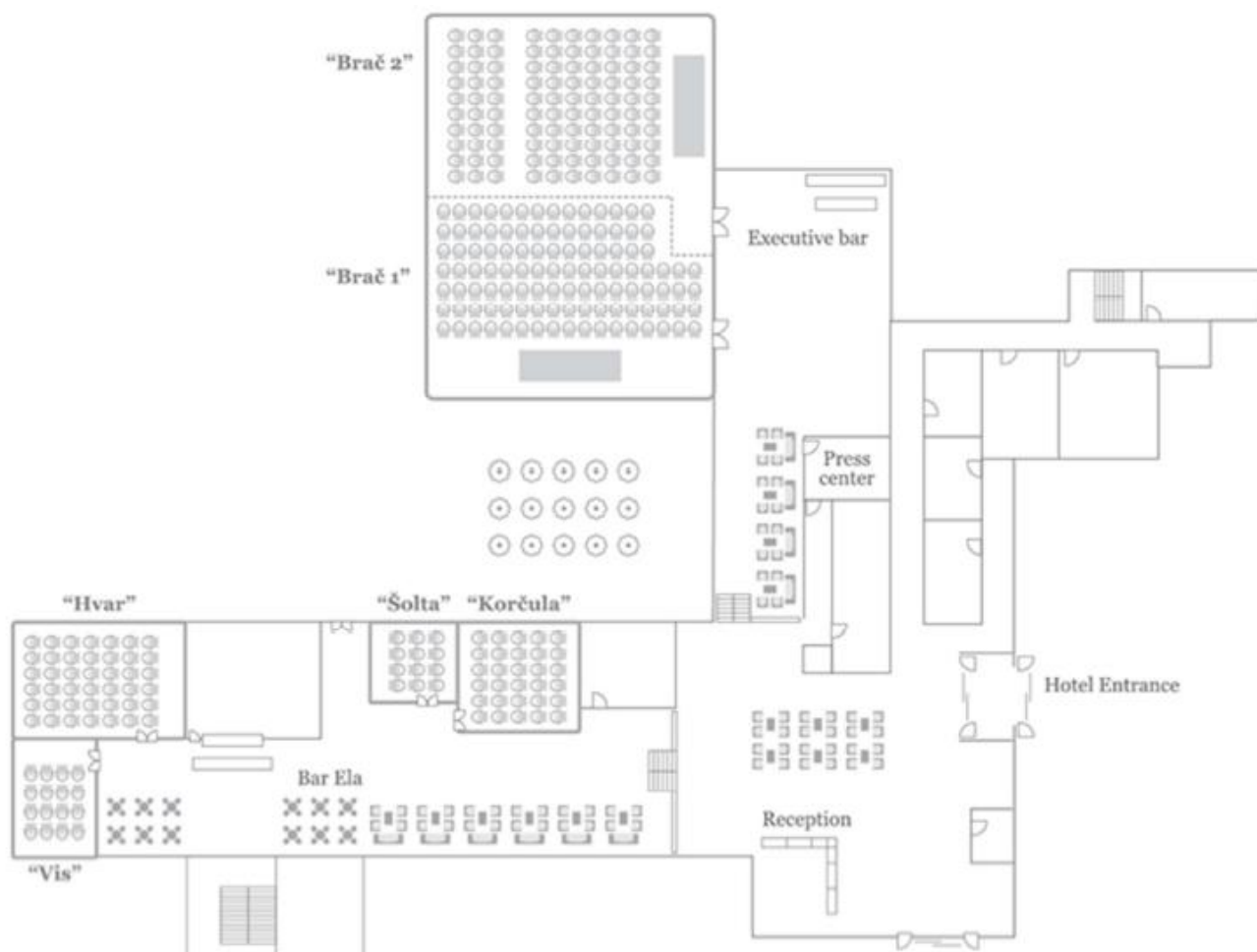
prof. dr. sc. Sven Gotovac, University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Panelists:

Prof. dr. sc. Vladan Papić, University of Split, Faculty of Electrical Engineering, Mechanical Engineering and Naval Architecture

Mag. sc. Frane Bebić, Ericsson Nikola Tesla, Croatian mountain rescue service

HOTEL ELAPHUSA: FLOOR PLAN



GENERAL INFORMATION



SPLIT – BOL (Island of Brač)

VENUE



The luxury Bluesun Elaphusa Hotel is rich in activities and services that include summer holidays, wellness and conference organisation, as well as many other sports activities. Elaphusa Hotel is

located in the immediate vicinity of a true Croatian landmark – the most famous Croatian beach, Zlatni rat. In its effort to meet the expectations associated with such a location, Elaphusa Hotel has been thoroughly renovated, extended and redecorated in the past few years to provide quality service to its holiday and business guests established through decades of hotel management. Elaphusa offers first-class hotel accommodation on the island of Brač, the pearl of the Croatian Adriatic.

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 harbour is daily connected with Ancona. Ship connections are also available with Venice, Pescara and Bari.

TRAVELING TO BRAC FROM SPLIT



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.

Climate of Brač, is characterized by long, hot and dry summer. Average air temperatures in Bol, Brač island in September is 21,4 degrees

Celsius, as well as the average sea temperature. The influence of the sea on temperature is stable, making the swimming here popular long in September. Although winds are usually not as strong during the summer, there is daily circulation of air in form of refreshing "maestral" from the sea (NW) from afternoon to evening, and evening "burin" (NE) pleasant breeze from hills of Brač.

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 16: 09:00-13:00, 15:00-18:30

Thursday, September 17: 08:30-13:00, 15:00-18:00

Friday, September 18, 08:00-10:00

SECRETARY

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