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Varna, Bulgaria
6-9 June 2016
Making decisions based on data collection and analysis is certainly nothing new. In today’s high-bandwidth, cloud-based interconnected world armed with advances in hardware and software, data can be captured and stored at massive scales and analyzed at breathtaking speeds. Data analytics helps the decision makers gain new insights and understanding by relying on data analyses and statistical methods. Telecomm service providers and network operators are blessed to be in the middle of this big data. But, they need to be able to take advantage of it by using data analytics in their decision making processes. This talk will discuss and review issues of real-time analytics on network operations, cost reductions, customer experience, revenue assurance, personalized marketing and more.
### Tuesday, June 7, 10:30 - 11:00

**Coffee Break**

Room: Coffee Break Lounge

### Tuesday, June 7, 11:00 - 12:30

**Communication and Information theory**

Room 1
Chair: Sylwester Sobolewski (USAF AFMC AFLCMC / WNYEDA, USA)

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**Open Flow and Software-Defined Networks**

Room 2
Chair: Agata Manolova (Technical University of Sofia, Bulgaria)

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Lunch Break

Tuesday, June 7, 14:00 - 15:30

Mobile and Wireless Communications and Networking I

Room 2
Chair: Liljana Gavrilovska (Ss Cyril and Methodius University - Skopje, Macedonia, the former Yugoslav Republic of)

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Autonomous learning model for achieving multi cell load balancing capabilities in HetNet  N/A
Plamen Trifonov Semov, Pavlina Koleva and Krasimir Tonchev (Technical University of Sofia, Bulgaria); Albena Mihovska (Aarhus University, Denmark); Vladimir K. Poulkov (Technical University of Sofia, Bulgaria)

Special session eHealth and Networking for Advanced Cancer Detection I

Room 1
Chair: Kristina Bliznakova (Technical University of Varna, Bulgaria)

The special session "eHealth and Networking for Advanced Cancer Detection" aims to bring together and establish networking amongst researchers working in the field of biomedical imaging, image processing, computational modeling and simulations, bioinstrumentation and medical imaging technologies, focused on eHealth and Networking approaches for advanced cancer detection.

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Tuesday, June 7, 15:30 - 16:00

Coffee Break

Room: Coffee Break Lounge

Tuesday, June 7, 16:00 - 17:30

Mobile and Wireless Communications and Networking II

Room 2
Chair: Anatoliy Platonov (Warsaw University of Technology, Poland)

Performance Analysis of Cooperative Spatial Modulation with Multiple-Antennas at Relay  
Gökhan Altın, Ertugrul Basar, Umit AYGÖLÜ and Mehmet E. Çelebi (Istanbul Technical University, Turkey)

Outage Probability and Base Station Coverage in Low Power Wide Area Networks  
Hendrik Lieske and Sebastian Rauh (Friedrich-Alexander University Erlangen-Nurnberg (FAU), Germany); Joerg Robert (Friedrich-Alexander University Erlangen-Nuremberg, Germany); Albert Heuberger (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany)

1.2 Gbps radio link implementation in THz band based on IEEE 802.11n standard  
Teodor Narytnik (Ukrainian Academy of Sciences, Ukraine); Leonid Uryvsky (National Technical University of Ukraine “Kyiv Polytechnic Institute”, Ukraine); Serhiy Osypchuk (Institute of Telecommunication Systems & National Technical University of Ukraine, Ukraine); Oleksii Lutchak (Ukrainian Academy of Sciences, Ukraine)

Hybrid access control with cell range expansion for LTE-A heterogeneous networks  
Aleksandar Ichkov (Ss. Cyril and Methodius University in Skopje & Wireless Networking Group (WinGroup), Macedonia, the former Yugoslav Republic of); Vladimir Atanasovski (Ss Cyril and Methodius University in Skopje, Macedonia, the former Yugoslav Republic of); Liljana Gavrilovska (Ss Cyril and Methodius University - Skopje, Macedonia, the former Yugoslav Republic of)

Basic Limits for LTE-Advanced Radio and HetNet Optimization in the Outdoor-to-indoor Scenario  
Sofia Sousa (Universidade da Beira Interior & Instituto de Telecomunicações, Portugal); Fernando J. Velez (University of Beira Interior & Instituto de Telecomunicações, Portugal); Albena Mihovska (Aarhus University, Denmark); Ramjee Prasad (Aalborg University, Denmark)

Special session eHealth and Networking for Advanced Cancer Detection II

Room 1
Chair: Zhivko Bliznakov (Technical University of Varna & University of Patras, Bulgaria)

Tuesday, June 7, 18:00 - 21:00

Social Event Day 2

Room: Plenary

Wednesday, June 8, 09:00 - 10:00

Patron’s Keynote

Room: Plenary
Chair: Vladimir K. Poulkov (Technical University of Sofia, Bulgaria)
Wednesday, June 8, 10:00 - 11:00

Keynote 2

The cost of information: How many bits per processing energy?
Room: Plenary
Chair: Erdal Panayirci (Kadir Has University, Turkey)

Wednesday, June 8, 11:00 - 11:30

Coffee Break

Room: Coffee Break Lounge

Wednesday, June 8, 11:30 - 13:00

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Room 1

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The special session on Enhanced Living Environments (ELE) aims to be a forum for interdisciplinary discussions and dissemination of original contributions on ELE architectures, protocols, components, interfaces, technologies, data acquisition and data mining techniques providing better quality of service (QoS) and quality of experience (QoE), and enhanced performance analysis. The topic is highly related to Internet of Things (IoT), Ambient Assisted Living (AAL), Cloud Computing, 5G and future network architectures, wireless sensor networks (WSN), and many others towards standards and interoperable approaches for the future AAL/ELE platforms. Investigations, discussions and experiences from different stakeholders' perspective on AAL/ELE technologies are welcome.

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Coffee Break

Room: Coffee Break Lounge

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Sensor and IoT Communications

Room 1
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Smart Geophone Sensor Network for Effective Detection of Rainfall Induced Landslides N/A
Deekshit Vn (Amrita Viswavidya Peetham, India); Maneesha Ramesh (Amrita University, India); Gj Nair (Amrita Vishwa Vidyapeetham University & Amritapuri, India); Indukala Pk (Research Associate, India)

Special Session on Emerging Wireless and Optical technologies for Future Mobile Applications

Room 2
Chair: Ertugrul Basar (Istanbul Technical University, Turkey)

The increasing demand for higher data rates and network capacity from next generation wireless communications systems lead the researchers to investigate the new parts of the frequency spectrum as an alternative to radio frequency (RF) bands for high-speed transmission of the digital data. One of the main reasons for this evolution is the bottleneck in which RF based wireless communications has arrived. Highly dense nature of the current RF spectrum and the interference caused by frequency reusing make the search for alternatives to RF communications inevitable. Visible light communications (VLC) is a promising new technology for next generation wireless communications systems due to its advantages over radio frequency (RF) based systems such as the operation in unregulated and very wide spectrum, no licensing requirements, low cost operation and less interference to RF sensitive devices. More importantly, since the VLC systems combine lighting and communications, the available lightning infrastructure can be used in VLC systems and there are no health concerns related to visible light once the eye safety is ensured. Light emitting diodes (LEDs) can be effectively used in indoor environments for both illumination and communications purposes. Therefore, VLC appears as a green technology for future wireless standards. VLC concept has attracted significant attention from the researchers in the past few years; however, this area still requires more extensive research efforts to unlock its potential for next-generation communication systems. The aim of this special session is to bring experts from academia and industry to present their up-to-date research findings on VLC technologies.
Wednesday, June 8, 19:00 - 23:00

Banquet

Social Event
Room: outside

Thursday, June 9, 09:00 - 10:30

Panel Session

Room: Plenary
Chair: Mehmet Ulema (Manhattan College, USA)

Thursday, June 9, 10:30 - 11:00

Coffee Break

Room: Coffee Break Lounge

Thursday, June 9, 11:00 - 12:00

Demo Papers

Room 2
Chair: Larysa Globa (National University of Technology of Ukraine "KPI" Kiev, Ukraine)
Secured Wireless Network with Mobile Sensors for Environmental Monitoring
Stanislav Valuiskyi and Oleksander Lysenko (National Technical University of Ukraine "Kyiv Polytechnic Institute", Ukraine); Oleksander Dakayev (National Technical University of Ukraine "Kyiv Polytechnic Institute", Ukraine); Yuriy Dobrov (Institute of Telecommunication, Ukraine)

An approach to the Internet of Things system with nomadic units developing
Larysa Globa (National University of Technology of Ukraine "KPI" Kiev, Ukraine); Nataliia Gvozdetska (National Technical University of Ukraine "KPI", Ukraine); Andrii Zakharchuk (National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute", Ukraine); Ivan Ishchenko and Oleh Zvonarow (National Technical University of Ukraine "KPI", Ukraine)

Gigabit wireless system in 130 GHz band based on 802.11n transceivers
Teodor Narytnik (Ukrainian Academy of Sciences, Ukraine); Leonid Uryvsky (National Technical University of Ukraine "Kyiv Polytechnic Institute", Ukraine); Oleksii Lutchak (Ukrainian Academy of Sciences, Ukraine); Serhiy Ospyuch (Institute of Telecommunication Systems & National Technical University of Ukraine, Ukraine)

Data Detection Based Iterative Channel Estimation for Coded SM-OFDM Systems
Yusuf Acar (Istanbul Kultur University, Turkey); Mehmet Merih Leblebici and Hakan Dogan (Istanbul University, Turkey); Erdal Panayirci (Kadir Has University, Turkey)

Poster Papers

Room: Coffee Break Lounge

Study on Generic Functionality for Quality of Service Control in M2M communications
Ivaylo Atanasov, Evelina Pencheva and Anastas Nikolov (Technical University of Sofia, Bulgaria)

Energy-aware Sensor-to-sink Binding in WSNs
Haidar Safa, Fatima K. Abu Salem and Ali Tawbeh (American University of Beirut, Lebanon)

Structure Synthesis of ANFIS classifier for Teletraffic System Resources Identification
Ivelina Balabanova and Georgi Georgiev (Technical University of Gabrovo, Bulgaria); Stela Kostadinova (Technical University Varna, Bulgaria); Rozalina Dimova (Technical University - Varna, Bulgaria)

A Group-Based Fast Media Independent Handover Control Scheme for Proxy Mobile IPv6 (GB-FMIH-PMIPv6)
Chung-Ming Huang and Duy-Tuan Dao (National Cheng Kung University, Taiwan); Meng-Shu Chiang (Far East University, Taiwan); Pham Chau (National Cheng Kung University, Taiwan)

Teletraffic System Performance Evaluation Based on LABVIEW Virtual Instruments Development
Ivelina Balabanova and Georgi Georgiev (Technical University of Gabrovo, Bulgaria); Stela Kostadinova (Technical University Varna, Bulgaria); Rozalina Dimova (Technical University - Varna, Bulgaria)

Extending the Lifetime of WSNs with Maximum Energy Selection Algorithm (MESA)
Korhan Cengiz (Trakya University, Turkey); Tamer Dag (Kadir Has University, Turkey)

Topology Reduction at the Physical Layer for Wireless Sensor Networks
Tsena Lazarova Stoyanova and Christos Antonopoulos (University of Patras, Greece); Rozalina Dimova (Technical University - Varna, Bulgaria); Stavros Koubias and George Papadopoulos (University of Patras, Greece)

Thursday, June 9, 12:00 - 13:30

Communication and Information theory
Room 1
Chair: Pavlos Lazaridis (University of Huddersfield, United Kingdom)
Prototype of Analog Feedback Communication System: First Results of Experimental Study  
Anatoliy Platonov, Ievgen Zaitsev, Borys Jeleński, Leszek Opalski, Jan Piekarski and Henryk Chaciński (Warsaw University of Technology, Poland)

Comparative analysis of algorithms to search for the shortest path in a maze  
Ivaylo Penev, Milena Karova and Neli Kalcheva (Technical University of Varna, Bulgaria)

Spatial Correlation Model for Two Isotropic Sources in Non-Isotropic AOA-Distribution Environment  
Sava Savov (Technical University of Varna & Technical University of Varna, Bulgaria)

Gigabit wireless system in 130 GHz band based on 802.11n transceivers  
Teodor Narytnik and Oleksii Lutchak (Ukrainian Academy of Sciences, Ukraine); Leonid Uryvsky (National Technical University of Ukraine “Kyiv Polytechnic Institute”, Ukraine); Serhiy Osypchuk (Institute of Telecommunication Systems & National Technical University of Ukraine, Ukraine)

Resource and Network Management

Room 2
Chair: Rozalina Dimova (Technical University - Varna, Bulgaria)

Development of Performance of OSPF Network by Using SDN Concepts  
Hasanein Ahmed Hasan Al-Jaberi (Brunel University London, United Kingdom); John Cosmas (Brunel University, United Kingdom); Zaharias D Zaharis (Aristotle University of Thessaloniki, Greece); Pavlos Lazaridis (University of Huddersfield, United Kingdom); Sinan Khwandah (Southampton Solent University, United Kingdom)

Improving Fairness of Network Bandwidth Allocation for Virtual Machines in Cloud Environment  
Zhiyuan Shao, Kai Zhang and Hai Jin (Huazhong University of Science and Technology, P.R. China)

Investigating the Sensitivity of First-Order Recursive DSP Networks  
Kamelia Nikolova and Zlatka Valkova-Jarvis (Technical University of Sofia, Bulgaria)

Autonomous learning model for achieving multi cell load balancing capabilities in HetNet  
Plamen Trifonov Semov, Pavlina Koleva and Krasimir Tonchev (Technical University of Sofia, Bulgaria); Albena Mihovska (Aarhus University, Denmark); Vladimir K. Poulkov (Technical University of Sofia, Bulgaria)

Thursday, June 9, 13:30 - 14:30

Lunch