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**Pages 1-663**



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# Technical Program

**Monday, December 6**

**8:50 AM - 9:00 AM**

Welcome/Opening address

**9:00 AM - 9:00 AM**

Welcome and Opening Remarks

**9:00 AM - 9:30 AM**

**SaCoNaS Workshop Keynote: Towards Autonomic Event Computing; An Industrial Perspective**

Towards Autonomic Event Computing; An Industrial Perspective  
Petre Dini (Cisco Systems & Concordia University, Canada)

**9:00 AM - 10:30 AM**

**Hot topics in ACN**

Welcome from the ACN Chairs, T. Magedanz, S. Hussain  
Sajid Hussain (Fisk University, USA); Thomas Magedanz (Fraunhofer FOKUS, Germany)

Mitigating Routing Misbehavior in Multi-hop Networks Using Evolutionary Game Theory

Charles A Kamhoua (Florida International University, USA); Niki Pissinou (Florida International University, USA); Jerry Miller (Florida International University, USA)  
pp. 1957-1962

Interference Alignment in the  $2 \times (1+N)$  MIMO Model

Mitsuki Yamada (Keio University, Japan); Tomoaki Ohtsuki (Keio University, Japan)  
pp. 1963-1967

Protection Switching for Carrier Ethernet Multicast

Sarah Ruepp (Technical University of Denmark, Denmark); Henrik Wessing (Technical University of Denmark, Denmark); Michael S. Berger (Technical University of Denmark, Denmark); Anna V Manolova (Danish Technical University, Denmark)  
pp. 1968-1972

Game Theoretic Analysis of Cooperation in Autonomous Multi Hop Networks The Consequences of Unequal Traffic Load

Charles A Kamhoua (Florida International University, USA); Niki Pissinou (Florida International University, USA)  
pp. 1973-1978

## **User-provided Networking -- Paper Session**

Protecting User Privacy in WiFi Sharing Networks

Till Elsner (Heinrich Heine University Düsseldorf, Germany); Denis Lütke-Wiesmann (Heinrich Heine University Düsseldorf, Germany); Björn Scheuermann (Heinrich Heine University Düsseldorf, Germany)  
pp. 1979-1983

A Novel Cooperative Virtual-MIMO Structure Using Random Network Coding

Li Chen (Beijing University of Posts and Telecommunications, P.R. China); Lei Cao (Beijing University of Posts and Telecommunications, P.R. China); Xin Zhang (Beijing University of Posts and Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)  
pp. 1984-1989

Exploiting super peers for large-scale peer-to-peer Wi-Fi roaming

Efstratios Dimopoulos (Athens University of Economics and Business, Greece); Pantelis A. Frangoudis (Athens University of Economics and Business, Greece); George C. Polyzos (Athens University of Economics and Business, Greece)  
pp. 1990-1994

## **Plenary Talk and Panel Discussion**

### **Broadband Single Carrier I**

Recent Advances in Gigabit Wireless Technology

Fumiyuki Adachi (Tohoku University, Japan)

Analysis of SC-FDMA Spectral Efficiency over Rayleigh Fading Channels

Juan Jesús Sánchez-Sánchez (University of Málaga, Spain); Mari Carmen Aguayo-Torres (University of Malaga, Spain); Unai Fernández-Plazaola (University of Málaga, Spain)  
pp. 1290-1295

Unique Word Prefix in SC/FDE and OFDM: A Comparison

Mario Huemer (Klagenfurt University, Austria); Christian Hofbauer (Klagenfurt University, Austria); Johannes Huber (University of Erlangen-Nuremberg, Germany)  
pp. 1296-1301

## **9:00 AM - 9:50 AM**

### **Keynote**

## 9:00 AM - 10:30 AM

### Poster Session I

#### Cell Collaborative Zones for 4G Cellular Systems

Zander Zhongding Lei (Institute for Infocomm Research, Singapore); Francois Chin (Institute for InfoComm Research, Singapore); Tony Q. S. Quek (Institute for Infocomm Research, Singapore); Edward K. S. Au (Huawei Technologies, P.R. China)  
pp. 726-730

#### Practical Aspects of Broadband Access for Rural Communities using a Cost and Power Efficient Multi-Hop / Relay Network

Faisal Darbari (University of Strathclyde, Glasgow, United Kingdom); Robert Stewart (University of Strathclyde, United Kingdom); Malcolm Brew (Steepest Ascent Ltd, United Kingdom); Stephan Weiss (University of Strathclyde, United Kingdom)  
pp. 731-735

#### Joint Channel Estimation and Equalization for OFDM based Broadband Communications in Rapidly Varying Mobile Channels

Habib Senol (Kadir Has University, Turkey); Erdal Panayirci (Kadir Has University, Turkey); H. Vincent Poor (Princeton University, USA)  
pp. 736-740

#### The Achievable Generalized Degrees of Freedom of Interference Channel with Orthogonal Relay

Song Zhao (Beijing University of Posts and Telecommunications, P.R. China); Tiankui Zhang (Beijing University of Posts and Telecommunications, P.R. China); Zhimin Zeng (Beijing University of Posts and Telecommunications, P.R. China)  
pp. 741-745

#### An Improved MMSE-Based MIMO Detection using Low-Complexity Constellation Search

Cheng-Yu Hung (Academia Sinica, Taiwan); Wei-Ho Chung (Academia Sinica, Taiwan)  
pp. 746-750

#### Impacts of Fast Flat Fading Channel on the Performance of a Primary-Secondary User Power Control Game for Cognitive Radios

Mahmoud A . Alayesh (University of New Mexico, USA); Nasir Ghani (University of New Mexico, USA)  
pp. 751-756

### Architectural Proposals 1

#### From Service Delivery to Application Delivery in the Telecommunication Industry

Christian Menkens (Technische Universität München, Germany)  
pp. 1339-1344

#### Taxonomy of cloud computing services

Christina N Hoefler (University of Twente, The Netherlands); Georgios Karagiannis (University of Twente, The Netherlands)  
pp. 1345-1350

#### Transport Service for the Future Internet: Concepts and Operations

Franco Callegati (Università di Bologna, Italy); Aldo Campi (University of Bologna, Italy); Walter Cerroni (University of Bologna, Italy)  
pp. 1351-1355

## 9:00 AM - 9:30 AM

### Keynote Talk: Prof. Jeffrey G. Andrews, The University of Texas, Austin

Understanding Femtocell-Overlaid Cellular Networks

## 9:00 AM - 10:30 AM

### HeterWMN Mobile Networks: Session 1

- Method for Efficiently Constructing and Updating Radio Map of Fingerprint Positioning  
Xingchuan Liu (Tsinghua, P.R. China); Sheng Zhang (Tsinghua university, P.R. China); Henghui Lu (Tsinghua University, P.R. China); Xiaokang Lin (Tsinghua University, P.R. China)  
pp. 74-78
- Average Sum-Rate of Distributed Alamouti Space-Time Scheme in Two-Way Amplify-and-Forward Relay Networks  
Trung Q. Duong (Blekinge Institute of Technology, Sweden); Chau Yuen (Singapore University of Technology and Design, Singapore); Hans-Jurgen Zepernick (Blekinge Institute of Technology, Sweden); Xianfu Lei (Southwest Jiaotong University, P.R. China)  
pp. 79-83
- MIMO Two-Way Relay Channel with Superposition Coding and Imperfect Channel Estimation  
Ioannis Krikidis (University of Cyprus, Cyprus); John Thompson (University of Edinburgh, United Kingdom)  
pp. 84-88

### HeterWMN Wireless Networks: Session 1

- A Mini-Slot-based Cooperative MAC Protocol for Wireless Mesh Networks  
Hongzhi Jiao (University of Agder, Norway); Frank Y. Li (University of Agder, Norway)  
pp. 89-93
- Secure Physical-layer Key Generation Protocol and Key Encoding in Wireless Communications  
Apirath Limmanee (Jacobs University, Germany); Werner Henkel (Jacobs University Bremen, Germany)  
pp. 94-98

### HeterWMN Wireless Sensor Networks: Session 1

- A Novel Scalable Routing Scheme Based on Polychromatic Sets Theory for Wireless Sensor Networks  
Shancang Li (Swansea University, United Kingdom)  
pp. 99-103
- A Selection Region Based Routing Protocol for Random Mobile ad hoc Networks  
Di Li (Beijing University of Posts and Telecommunication, P.R. China); Changchuan Yin (Beijing University of Posts and Telecommunications, P.R. China); Changhai Chen (Beijing University of Posts and telecommunications, P.R. China); Shuguang Cui (Texas A&M University, USA)  
pp. 104-108
- A Mobility-Aware Medium Access Control Protocol for Wireless Sensor Networks  
Waltenegus Dargie (Technische Universität Dresden, Germany)  
pp. 109-114

## 9:00 AM - 9:45 AM

### Keynote

- Invited Talk: Network Scalability vs. Evolving Communication Patterns  
Mike P Wittie (University of California, Santa Barbara, USA)

### Introduction and Key Note

- NetUASC3: An Unmanned Systems Command, Control, Communication, and Sensing Architecture  
Brian Argrow (University of Colorado, USA)

## **9:30 AM - 10:30 AM**

### **Performance Analysis, Modeling and Wireless Sensor Networks I**

New generation of transport protocols for autonomous systems

Ernesto Exposito (LAAS-CNRS, Université de Toulouse, France); Christophe Chassot (LAAS/CNRS, France); Michel Diaz (Laas CNRS, France)

pp. 1617-1621

Data-Driven Data Transmission Mechanism for Wireless Sensor Networks in Harsh Communication Environment

Kenji Yoshigoe (University of Arkansas at Little Rock, USA)

pp. 1622-1626

## **9:30 AM - 10:40 AM**

### **System Analysis of Femtocell Networks**

CDMA Uplink Capacity in both Open and Closed Access Two-tier Femtocell Networks

Ping Xia (University of Texas at Austin, USA); Vikram Chandrasekhar (Texas Instruments, USA); Jeffrey Andrews (The University of Texas at Austin, USA)

pp. 648-652

Capacity Comparison for CSG and OSG OFDMA Femtocells

Ang-Hsun Tsai (National Chiao Tung University, Taiwan); Jane-Hwa Huang (National Chi Nan University, Taiwan); Li-Chun Wang (National Chiao Tung University, Taiwan); Ruey-Bing Hwang (National Chiao Tung University, Taiwan)

pp. 653-658

On Interference Analysis of Self-organized Femtocells in Indoor Deployment

Carlos H. M. de Lima (University of Oulu, Finland); Mehdi Bennis (Centre of Wireless Communications, University of Oulu, Finland); Kaveh Ghaboosi (University of Oulu, Finland); Matti Latva-aho (UoOulu, Finland)

pp. 659-663

Outage Analysis for WCDMA Femtocell with Uplink Attenuation

He Wang (Australian National University, Australia); Ming Zhao (Australian Communication and Media Authority, Australia); Mark C. Reed (National ICT Australia, ANU, Australia)

pp. 664-668

## **9:45 AM - 10:45 AM**

### **Exploiting Shared Media**

Overlapped NACKs: Improving Multicast Performance in Multi-access Wireless Networks

Luca Canzian (University of Padova, Italy); Andrea Zanella (University of Padova, Italy); Michele Zorzi (Università degli Studi di Padova, Italy)

pp. 1469-1474

iShare: Exploiting Opportunistic Ad hoc Connections for Improving Data Download of Cellular Users

Long Vu (University of Illinois, USA); Klara Nahrstedt (University of Illinois at Urbana-Champaign, USA); Ivica Rimac (Bell Labs, Alcatel-Lucent, USA); Volker Hilt (Bell Labs/Alcatel-Lucent, USA); Markus Hofmann (Bell Labs/Alcatel-Lucent, USA)

pp. 1475-1480

## **9:45 AM - 10:30 AM**

### **Aerial Channel Analysis and Physical Data Links**

Avoid communication outages in decentralized planning

Sameera Ponda (Massachusetts Institute of Technology, USA); Olivier Huber (ENS Cachan, France); Han-Lim Choi (Massachusetts Institute of Technology, USA); Jonathan How (Massachusetts Institute of Technology, USA)  
pp. 1756-1759

Coverage Evaluation of Wireless Networks for Unmanned Aerial Systems

Niklas Goddemeier (TU Dortmund University, Germany); Kai Daniel (TU Dortmund University, Germany); Christian Wietfeld (TU Dortmund University, Germany)  
pp. 1760-1765

## **9:50 AM - 10:30 AM**

### **Session #1: Testbeds and Prototypes**

The FUTON Prototype: Broadband Communication through Coordinated Multi-Point using a Novel integrated Optical/Wireless Architecture

Fabian Diehm (Technische Universität Dresden, Germany); Joerg Holfeld (Technische Universität Dresden, Germany); Gerhard Fettweis (Technische Universität Dresden, Germany); Nathan J Gomes (University of Kent, United Kingdom); David Wake (University of Kent, United Kingdom); Anthony Nkansah (University of Kent, United Kingdom); Esther Lopez (Acorde SA, Spain)  
pp. 757-762

Practical Considerations for Channel Assignment in Wireless Mesh Networks

Peter Dely (Karlstad University, Sweden); Marcel Cavalcanti de Castro (Karlstad University, Sweden); Andreas J. Kassler (Karlstad University, Sweden); Arild Moldsvor (Karlstad University, Sweden); Sina Soukhakian (Karlstad University, Sweden)  
pp. 763-767

## **11:00 AM - 12:30 PM**

### **Performance Analysis, Modeling and Wireless Sensor Networks II**

Efficient network performance assessment using Inter-Packet Arrival Times

René Serral-Gracià (Technical University of Catalunya (UPC), Spain); Eva Marin-Tordera (Technical University of Catalonia UPC, Spain); Marcelo Yannuzzi (Technical University of Catalonia (UPC), Spain); Xavier Masip-Bruin (Universitat Politècnica de Catalunya, Spain); Sergio Sánchez-López (Technical University of Catalonia, Spain)  
pp. 1627-1631

Wireless communication networks and process control applications: studying the influence of MAC protocols

Hung Xuan Nguyen (Université de Toulouse, France); Guy Juanole (LAAS CNRS, France); Gerard Mouney (Université de Toulouse, France); Christophe Calmettes (Université de Toulouse, France)  
pp. 1632-1637

Interference and Bandwidth Adjusted ETX in Wireless Multi-hop Networks

Nadeem Javaid (University of Paris East Créteil (UPEC), France); Ayesha Bibi (ICIT, Gomal University, Pakistan); Karim Djouani (LISSI Laboratory, Paris Est University, France)  
pp. 1638-1643

### **Handover and Network Selection in Future Broadband Networks**

A Distributed Admission Control Mechanism for Multi-Criteria QoS

Georgia Sakellari (Imperial College London, United Kingdom); Erol Gelenbe (Imperial College London, United Kingdom)  
pp. 1995-1999

Policy Routing Architecture for IP Flow Mobility in 3GPP's Evolved Packet Core

Marco Liebsch (NEC Europe Ltd, Germany); Paulo Ferrer Loureiro (NEC Europe, Germany); Stefan Schmid (NEC Europe Ltd., Germany)  
pp. 2000-2005

On the use of Network QoS Reputation for Vertical Handover Decision Making  
Mariem Zekri (Telecom Sud Paris, France); Badii Jouaber (Institut TELECOM - Telecom SudParis, France); Djamel Zeghlache (Institut TELECOM, TELECOM SudParis, France)  
pp. 2006-2011

Enabling Dynamic Service Delivery in the 3GPP Evolved Packet Core  
Marius Corici (Fraunhofer FOKUS, Germany); Jens Fiedler (Fokus Fraunhofer, Germany); Andreea Onofrei (Fraunhofer FOKUS Institute, Germany); Dragos Vingarzan (Fraunhofer-FOKUS Institute, Germany)  
pp. 2012-2016

## **User-provided Networking -- Panel Discussion**

### **Performance Modelling**

A Quantitative Framework for Modeling and Analyzing Flash Memory Wear Leveling Algorithms  
Mochan Shrestha (Wayne State University, USA); Lihao Xu (Wayne State University, USA)  
pp. 1836-1840

Adaptive Endurance Coding for NAND Flash  
Ashish Jagmohan (IBM T. J. Watson Research Center, USA); Michele M Franceschini (IBM T.J. Watson Research Center, USA); Luis A Lastras-Montaño (IBM TJ Watson Research Center, USA); John Karidis (IBM TJ Watson Research Center, USA)  
pp. 1841-1845

A closed-form expression for Write Amplification in NAND Flash  
Rajiv Agarwal (Stanford University, USA); Marcus Marrow (Link\_A\_Media Devices Corporation, USA)  
pp. 1846-1850

An area and latency assessment for coding for memories with stuck cells  
Luis A Lastras-Montaño (IBM TJ Watson Research Center, USA); Ashish Jagmohan (IBM T. J. Watson Research Center, USA); Michele M Franceschini (IBM T.J. Watson Research Center, USA)  
pp. 1851-1855

### **Coding for Memories I**

Error Characterization and Coding Schemes for Flash Memories  
Eitan Yaakobi (University of California, San Diego, USA); Paul H. Siegel (University of California, San Diego, USA); Steven Swanson (University of California, San Diego, USA); Jack Wolf (UCSD, USA); Laura M Grupp (University of California, San Diego, USA); Jing Ma (National University of Singapore, Singapore)  
pp. 1856-1860

Rewriting Codes for Flash Memories Based Upon Lattices, and an Example Using the E8 Lattice  
Brian Michael Kurkoski (University of Electro-Communications, Japan)  
pp. 1861-1865

Rank Modulation with Multiplicity  
Anxiao Andrew Jiang (Texas A&M University, USA); Yue Wang (Texas A&M University, USA)  
pp. 1866-1870

Not Just for Errors: Codes for Fast and Secure Flash Storage  
Yuval Cassuto (EPFL, Switzerland)  
pp. 1871-1875

### **Broadband Single Carrier II**

Mobile radio channels' Estimation for SC-FDMA systems by means of adequate Noise and Inter-carrier Interference filtering in a transformed domain



Sosthène Yameogo (SUPELEC, France); Jacques Palicot (IETR/Supélec, France); Laurent Cariou (france telecom R&D, France)  
pp. 1302-1306

Slepian Based Channel Interpolation for LTE Uplink System with High Mobility  
Bahattin Karakaya (University of Istanbul, Turkey); Hakan A. Cirpan (Istanbul Technical University, Turkey); Huseyin Arslan (University of South Florida, USA); Azime Can (Istanbul University, Turkey)  
pp. 1307-1311

On the Group Proportional Fairness of Frequency Domain Resource Allocation in L-SC-FDMA based LTE uplink  
Irfan Ahmed (Qatar University, Doha, Qatar); Amr Mohamed (Qatar University, Qatar); Ismail Shakeel (Qatar University, Qatar)  
pp. 1312-1317

## **Session #2: Cognitive Radio, VANET and Network Coding**

Efficient Spectrum Sharing with Autonomous Primary Users: Distributed Dynamic Spectrum Leasing (D-DSL)  
Georges El-Howayek (University of New Mexico, USA); Sudharman K Jayaweera (University of New Mexico, USA)  
pp. 768-772

A Robust Power Control Method for Cognitive Radio Networks  
Naser Movahhedinia (University of Isfahan, Iran); Ali Tizghadam (University of Toronto, Canada); Alberto Leon-Garcia (University of Toronto, Canada)  
pp. 773-777

A Performance Comparison of Cognitive Versus Traditional Radio Networks  
Arash Azarfar (Ecole Polytechnique de Montréal, Canada); Jean-François Frigon (Ecole Polytechnique de Montreal and GERAD, Canada); Brunilde Sanso (Ecole Polytechnique de Montreal, Canada)  
pp. 778-782

Performance of a Double Cluster Head Routing Scheme in a Motorway Environment  
Bilal R Qazi (University of Leeds, United Kingdom); Adnan Muhtar (University of Leeds, United Kingdom); Wanod Kumar (University of Leeds, United Kingdom); Jaafar Elmirghani (University of Leeds, United Kingdom)  
pp. 783-787

Efficient Resource Minimization Scheme for Network Coding-Assisted Multicast System  
SeyedAmin Hejazi (Simon Fraser University, Canada); Muhammad Naeem (Simon Fraser University, Canada); Daniel Lee (Simon Fraser University, Canada)  
pp. 788-792

## **Socially-Aware P2P Systems**

SARACEN: A platform for adaptive, socially aware multimedia distribution over P2P networks  
Rui Santos Cruz (Instituto Superior Técnico - Universidade Técnica de Lisboa, Portugal); Mario S Nunes (INESC, Portugal); Charalampos Patrikakis (National Technical University of Athens, Greece); Nikolaos Papaoulakis (National Technical University of Athens, Greece)  
pp. 1356-1360

An apparatus for P2P classification in Netflow traces  
Andrew Gossett (North Carolina State University, USA); Ioannis Papapanagiotou (North Carolina State University, USA); Michael Devetsikiotis (North Carolina State University, USA)  
pp. 1361-1366

CAP: Capability-Aware one-hop DHT lookup algorithm for P2P overlay  
Lei Qu (Beijing University of Posts and Telecommunications, P.R. China); Kai Shuang (Beijing University of Posts and Telecommunications, P.R. China); Sen Su (Beijing University of Posts & Telecommunications (BUPT), P.R. China); FangChun Yang (Beijing University of Posts & Telecommunications, P.R. China)  
pp. 1367-1371

## 11:00 AM - 11:30 AM

### Keynote Talk: Prof. Giuseppe Caire, University of Southern California, USA

Cognitive Femtocells for 4G Cellular Networks

## 11:00 AM - 12:30 PM

### HeterWMN Mobile Networks: Session 2

- Cooperative diversity with OSTBC transmission and adaptive-gain amplify-and-forward MIMO relaying  
Lei Cao (Beijing University of Posts and Telecommunications, P.R. China); Li Chen (Beijing University of Posts and Telecommunications, P.R. China); Xin Zhang (Beijing University of Posts and Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)  
pp. 115-119
- Interference Alignment Through User Cooperation for Two-cell MIMO Interfering Broadcast Channels  
Wonjae Shin (Samsung Advanced Institute of Technology (SAIT), Korea); Namyoon Lee (Samsung Advanced Institute of Technology, Korea); Jong Bu Lim (Samsung Electronics Co., Ltd., Korea); Changyong Shin (Samsung Advanced Institute of Technology, Korea); Kyunghun Jang (Samsung Advanced Institute of Technology, Korea)  
pp. 120-125
- Design and Analysis of Compress-and-Forward Cooperation in a Virtual-MIMO Detection System  
Jing Jiang (University of Edinburgh, United Kingdom); John Thompson (University of Edinburgh, United Kingdom); Peter Grant (Edinburgh School of Engineering and Electronics, United Kingdom)  
pp. 126-130

### HeterWMN Wireless Networks: Session 2

- Range-based Localization in Wireless Networks using Decision Trees  
T. Aaron Gulliver (University of Victoria, Canada); Khalid Almuzaini (University of Victoria, Canada)  
pp. 131-135
- Service Discovery for Delay Tolerant Networks  
Zijian Wang (Rensselaer Polytechnic Institute, USA); Eyuphan Bulut (Rensselaer Polytechnic Institute, USA); Boleslaw K Szymanski (Rensselaer Polytechnic Institute, USA)  
pp. 136-141
- Managing QoS in Mixed Wireless Networks using the Power Performance Measure  
Yacob Astatke (Morgan State University, USA); Dean Richard (Morgan State University, USA)  
pp. 142-147

### HeterWMN Wireless Sensor Networks: Session 2

- Mobility in a Description based Clustered Ad Hoc Network  
Tharinda Nishantha Vidanagama (Waseda University, Japan); Hidenori Nakazato (Waseda University, Japan)  
pp. 148-152
- Building a Trust-Aware Dynamic Routing Solution for Wireless Sensor Networks  
Guang Jin (Intelligent Automation Inc, USA); Hongmei Deng (Intelligent Automation Inc., USA); Roger Xu (Intelligent Automation Inc., USA); Weisong Shi (Wayne State University, USA)  
pp. 153-157
- Analysis on Capacity and Delay for Redundant Multiple Source Routing in Mobile Ad Hoc Networks  
Zhuxiu Yuan (Dalian University of Technology, P.R. China); Lei Wang (Dalian University of Technology, P.R. China); Cheng Meng (Dalian University of Technology, P.R. China); Chunlei Liu (Dalian University of Technology, P.R. China); Trung Q. Duong (Blekinge Institute of Technology,

Sweden); Lei Shu (Osaka University, Japan)  
pp. 158-163  
Wireless Sensor Network Interconnection Protocol  
Kurt Smolderen (University of Antwerp, Belgium); Peter De Cleyn (University of Antwerp, Belgium);  
Chris Blondia (University of Antwerp, Belgium)  
pp. 164-168

### **Multihop Wireless & Security**

Integrating Network Coding and Superposition Coding in Extended Two-way Relay Networks  
Li Chen (Beijing University of Posts and Telecommunications, P.R. China); Lei Cao (Beijing University of Posts and Telecommunications, P.R. China); Xin Zhang (Beijing University of Posts and Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)  
pp. 1481-1486  
QoS Multicast Routing and Transmission Scheduling in Multi-hop Cognitive Radio Networks  
Liming Xie (City University of Hong Kong, P.R. China); Xiaohua Jia (City University of Hong Kong, Hong Kong)  
pp. 1487-1491  
Efficient Key Management Model and Scheme for Content Access Control in Hierarchies  
Hani Ragab-Hassen (University of Kent, United Kingdom)  
pp. 1492-1496

### **Connectivity and Coverage Optimization for UAVs**

Dynamic UAV Relay Positioning for the Ground-to-Air Uplink  
Feng Jiang (University of California, Irvine, USA); Lee Swindlehurst (University of California at Irvine, USA)  
pp. 1766-1770  
Maintaining Connectivity in UAV Swarm Sensing  
Luke Teacy (University of Ulster, United Kingdom); Jing Nie (University of Ulster, United Kingdom); Sally I McClean (University of Ulster, Coleraine, United Kingdom); Gerard P. Parr (University of Ulster, United Kingdom)  
pp. 1771-1776  
A Discrete Stochastic Process for Coverage Analysis of Autonomous UAV Networks  
Evsen Yanmaz (University of Klagenfurt, Austria); Carmelo Costanzo (University of Calabria, Italy); Christian Bettstetter (University of Klagenfurt, Austria); Wilfried Elmenreich (University of Klagenfurt, Austria)  
pp. 1777-1782  
Link Quality Dependent Mobility Strategies for Distributed Aerial Sensor Networks  
Sebastian Rohde (TU Dortmund University, Germany); Niklas Goddemeier (TU Dortmund University, Germany); Kai Daniel (TU Dortmund University, Germany); Christian Wietfeld (TU Dortmund University, Germany)  
pp. 1783-1787  
Connectivity of Aeronautical Ad hoc Networks  
Hua Li (Shanghai Jiao Tong University, P.R. China); Bo Yang (Shanghai Jiao Tong University, P.R. China); Caillian Chen (Shanghai Jiao Tong University, P.R. China); Xinping Guan (Shanghai Jiao Tong University, P.R. China)  
pp. 1788-1792

## **11:30 AM - 12:40 PM**

### **System Design of Femtocell Networks**

Imbalance Issues in Heterogeneous DO Networks

Kambiz Azarian (Qualcomm Inc., USA); Christopher Lott (Qualcomm, Inc., USA); Donna Ghosh (Qualcomm Corp R&D, USA); Rashid Attar (QUALCOMM Inc., USA)  
pp. 669-673

#### Self-Organization for LTE Enterprise Femtocells

Guillaume de la Roche (University of Bedfordshire, United Kingdom); Ákos Ladányi (Budapest University of Technology and Economics, Hungary); David López-Pérez (King's College London, United Kingdom); Chia-Chin Chong (DOCOMO USA Labs, USA); Jie Zhang (University of Bedfordshire, United Kingdom)  
pp. 674-678

#### Hybrid User Access Control in HSDPA Femtocells

Yang-Yang Li (University of Toronto, Canada); Leon Chung-Dai Yen (University of Toronto, Canada); Elvino Silveira Sousa (University of Toronto, Canada)  
pp. 679-683

#### A Non-Cooperative Method for Path Loss Estimation in Femtocell Networks

Qinliang Su (Zhejiang University, P.R. China); Aiping Huang (Zhejiang University, P.R. China); Zhaoyang Zhang (Zhejiang University, P.R. China); Kai Xu (China Broadband Communication Research Lab, Applied Research Center, Motorola, P.R. China); Jin Yang (China Broadband Communication Research Lab, Applied Research Center, Motorola, P.R. China)  
pp. 684-689

## **1:50 PM - 2:20 PM**

### **Keynote Talk: Prof. Merouane Debbah, Supelec, France**

Flexible Small Cell Green Networks: Breaking the Spectral Efficiency Barrier

## **2:00 PM - 3:30 PM**

### **Protocol, Architecture and Ubiquitous Computing I**

#### An Autonomic Virtualized Architecture for Clouds and Sky

Guy Pujolle (University of Paris 6, France)  
pp. 1644-1647

#### QoS BeeManet: a new QoS multipath routing protocol for mobile ad-hoc networks

Salim Bitam (Mohamed Khider University of Biskra, Algeria); Batouche Mohamed (King Saud University, Saudi Arabia); Abdelhamid Mellouk (UPEC, University Paris-Est Creteil Val de Marne, France)  
pp. 1648-1652

#### Autonomous discovery, localization and recognition of smart objects through WSN and image features

Emanuele Menegatti (University of Padua, Italy); Matteo Danieletto (University of Padova, Italy); Marco Mina (University of Padova, Italy); Alberto Pretto (University of Padua, Italy); Stefano Zanconato (University of Padova, Italy); Pietro Zanuttigh (University of Padua, Italy); Andrea Zanella (University of Padova, Italy)  
pp. 1653-1657

### **Content and Service Delivery above LTE/EPC**

#### IMS Service Plane Enabled Heterogeneous Networks for Multimedia Applications

Luying Zhou (Institute for Infocomm Research, Singapore); Lek Heng Ngoh (Institute for Infocomm Research, Singapore); Xu Shao (Institute for Infocomm Research, Singapore); Teck Yoong Chai (Institute for Infocomm Research, Singapore); Teck Kiong Lee (Institute for Infocomm Research, Singapore); Joseph Chee Ming Teo (Institute for InfoComm Research, Singapore)  
pp. 2017-2021

#### Personalization Enablers by Telecom Operators

Miklós Bódi (Nokia Siemens Networks, Hungary); Jean-Pierre le Rouzic (Orange labs, France); Vincent Hiribarren (Bell Labs, France); Menuka Jain (France Telecom, United Kingdom); Jon Maurologoitia (CBT Communication Engineering, Spain)  
pp. 2022-2027

Interconnected Content Distribution in LTE Networks

Christian Schwartz (University of Wuerzburg, Germany); Jochen Eisl (Nokia Siemens Networks, Germany); Artan Halimi (A1 Telekom Austria, Austria); Albert Rafetseder (University of Vienna, Austria); Kurt Tutschku (University of Vienna, Austria)  
pp. 2028-2033

A Feasibility Study on Physical Implementation of Global Wireless Communication Services Recognition System

Hendra Setiawan (Kyushu Institute of Technology, Japan); Masayuki Kurosaki (Kyusyu Institute of Technology, Japan); Hiroshi Ochi (Kyushu Institute of Technology, Japan)  
pp. 2034-2038

## Tele-health Services and Applications

Remote medical treatment at home using the Java Mobile Sensor API

Michael Maaser (IHP microelectronics, Germany); Steffen Ortmann (IHP microelectronics, Germany)  
pp. 2039-2043

Compact Representation of Coordinated Sampling Policies for Body Sensor Networks

Shuping Liu (University of Southern California, USA); Anand Panangadan (Childrens Hospital Los Angeles, USA); Ashit Talukder (Jet Propulsion Laboratory, NASA, Pasadena, California, USA); Cauligi Raghavendra (University of Southern California, USA)  
pp. 2044-2048

On the Detection of Elderly Equilibrium Degradation Using Multivariate-EMD

Abdelkader Miraoui (University of Technologie of Troyes, France); Nourddine Azzaoui (Université Blaise Pascal, France); Hichem Snoussi (University of Technologie of Troyes, France); Jacques Duchêne (Université de Technologie de Troyes, France)  
pp. 2049-2053

Fall Detection by using K-Nearest Neighbor algorithm on WSN Data

Senol Zafer Erdogan (Maltepe University, Turkey); Turgay Bilgin (Maltepe University, Turkey); Juphil Cho (Kunsan National University, Korea)  
pp. 2054-2058

## Modelling for Storage Media

Challenges and opportunities for information theory-based design of Phase Change Memories

Andrea Marinoni (University of Pavia, Italy); Alessandro Cabrini (University of Pavia, Italy); Eugenio Costamagna (University of Pavia, Italy); Guido Torelli (University of Pavia, Italy); Paolo Gamba (Università degli Studi di Pavia, Italy)  
pp. 1876-1880

Exploration on Sub-nanosecond Spin Torque Random Access Memory

Xiaobin Wang (Seagate Technology, USA)  
pp. 1881-1885

Understanding of switching phenomena in unipolar NiO-based RRAM

Hyung Dong Lee (Stanford University, USA); Yoshio Nishi (Stanford University, USA)  
pp. 1886-1889

The inner workings of phase change memory: lessons from prototype PCM devices

Geoffrey W Burr (IBM Almaden Research Center, USA); Alvaro Padilla (IBM Almaden Research Center, USA); Michele M Franceschini (IBM T.J. Watson Research Center, USA); Bryan Jackson (IBM Almaden Research Center, USA); Diego Dupouy (IBM Almaden Research Center, USA); Charles T. Rettner (IBM Almaden Research Center, USA); Kailash Gopalakrishnan (IBM Almaden Research Center, USA); Rohit Shenoy (IBM Almaden Research Center, USA); John Karidis (IBM TJ Watson Research Center, USA)  
pp. 1890-1894

## **Coding for Memories II**

### A Multibit-Per-Cell Memory Model and Nonbinary LDPC Codes

Seungjune Jeon (Carnegie Mellon University, USA); Euseok Hwang (Carnegie Mellon University, USA); B. V. K. Vijaya Kumar (Carnegie Mellon University, USA); Michael K. Cheng (Jet Propulsion Laboratory, USA)

pp. 1895-1899

### Agile Encoder Architectures for Strength-Adaptive Long BCH Codes

Raghunath Cherukuri (CodePhy Inc., USA)

pp. 1900-1904

### Rebuilding for Array Codes in Distributed Storage Systems

Zhiying Wang (California Institute of Technology, USA); Alex Dimakis (University of Southern California, USA); Jehoshua Bruck (California Institute of Technology, USA)

pp. 1905-1909

### Modeling, Detection, and LDPC Codes for Bit-Patterned Media Recording

Kui Cai (Data Storage Institute, Singapore); Zhiliang Qin (Data Storage Institute, Singapore); Songhua Zhang (Data Storage Institute, Singapore); Yibin Ng (Data Storage Institute, Singapore); Rathnakumar Radhakrishnan (Data Storage Institute, Singapore)

pp. 1910-1914

## **Broadband Single Carrier III**

### Effectiveness of peak power reduction schemes for OFDM and single-carrier systems

Hideki Ochiai (Yokohama National University, Japan)

### Chained Turbo Equalization for SC-FDMA Systems without Cyclic Prefix

Zhou Hui (Japan Advanced Institute of Science and Technology, Japan); Khoirul Anwar (Japan Advanced Institute of Science and Technology, Japan); Tad Matsumoto (Japan Advanced Institute of Science and Technology, Japan)

pp. 1318-1322

### On the Design of Iterative FDE Receivers for OQAM Modulations

Miguel Luzio (Instituto de Telecomunicações/UNINOVA/FCT-UNL, Portugal); Rui Dinis (Instituto de Telecomunicações/UNINOVA/FCT-UNL, Portugal); Paulo Montezuma (FCT-UNL, Portugal)

pp. 1323-1327

## **Session #3: RRM and MIMO**

### On Opportunistic Power Control for MIMO-OFDM Systems

Gabor Fodor (Ericsson Research, Sweden); Norbert Reider (Budapest University of Technology and Economics, Hungary)

pp. 793-798

### Active-Mode Power Optimization in OFDMA-Based Wireless Networks

Sergey Andreev (Tampere University of Technology, Finland); Yevgeni Koucheryavy (Tampere University of Technology, Finland); Nageen Himayat (Intel Corporation, USA); Pavel Gonchukov (St. Petersburg State University of Aerospace Instrumentation, Russia); Andrey Turlikov (Saint-Petersburg State University of Aerospace Instrumentation, Russia)

pp. 799-803

### CSI Feedback for Closed-Loop MIMO-OFDM Systems based on B-splines

Ren-Shian Chen (National Cheng-Kung University, Taiwan)

pp. 804-808

### System Level Evaluation of TDD based LTE-Advanced MIMO-OFDMA Systems

Harri Pennanen (University of Oulu, Finland); Tuomas Haataja (University of Oulu, Finland); Jouko Tapio Leinonen (University of Oulu, Centre for Wireless Communications (CWC), Finland); Antti Tölli (University of Oulu, Finland); Matti Latva-aho (UoOulu, Finland)

pp. 809-813

### Sum-Rate Maximization for Multiple Users in Partial Frequency Reuse Cellular Networks

Bujar Krasniqi (Vienna University of Technology, Austria); Martin Wolkerstorfer (Telecommunications

Research Center Vienna (FTW), Austria); Christian Mehlführer (Vienna University of Technology, Austria); Christoph F Mecklenbräuker (Vienna University of Technology, Austria)  
pp. 814-818

## Poster Session II

### A REM Enabled Soft Frequency Reuse Scheme

Sébastien Grimoud (France Telecom R&D, France); Berna Sayrac (Orange Labs, France); Sana Ben Jemaa (France Telecom Research and Development Division, France); Eric Moulines (Telecom ParisTech, France)  
pp. 819-823

### Novel Power and Time Allocation Algorithm for a Dynamic TDMA Slot Assignment Multiuser Transmission Schemes

Abbes Yosra (Supcom, Tunisia); Fatma Abdelkefi (Ecole Supérieure des Communications de Tunis, Tunisia); Hichem Besbes (Ecole Supérieure de Communications de Tunis, Sup'Com TUNISIA, Tunisia)  
pp. 824-828

### Joint Admission Control and Resource Allocation with GoS and QoS in LTE Uplink

Oscar Delgado (Concordia University, Canada); Brigitte Jaumard (Concordia University, Canada)  
pp. 829-833

### Assessment of the benefits of introducing a HSDPA carrier at 900MHz

Antolin Moral (Universidad Politecnica de Madrid, Spain); Arturo Vergara (Universidad Politecnica de Madrid, Spain); Jorge Pérez (Universidad Politecnica de Madrid, Spain); Catalina Ovando (Universidad Politecnica de Madrid, Spain)  
pp. 834-838

### Generalised Spatial Modulation with Multiple Active Transmit Antennas

Jinlin Fu (Tianjin University, P.R. China); Chunping Hou (Tianjin University, P.R. China); Wei Xiang (University of Southern Queensland, Australia); Yonghong Hou (Tianjin University, P.R. China)  
pp. 839-844

## Architectural Proposals 2

### XMPP based Context Management Architecture

Diogo Gomes (Universidade de Aveiro, Portugal); João Gonçalves (PT Inovação, Portugal); Ricardo Santos (Portugal Telecom Inovação, Portugal); Rui L Aguiar (University of Aveiro, Portugal)  
pp. 1372-1377

### Enhanced Service Provisioning in Wireless Multi-hop Networks via Socially-driven Inverse Topology Control

Eleni G Stai (National Technical University of Athens / Institute of Com. and Computer Syst., Greece); Vasileios A Karyotis (National Technical University of Athens, Greece); Symeon Papavassiliou (Institute of Comm. and Comp. Systems/National Technical University of Athens, Greece)  
pp. 1378-1382

## HeterWMN Mobile Networks: Session 3

### Joint control of bandwidth and playout-delay for streaming traffic over faded links

Tatiana Patriarca (University of Rome, Sapienza, Italy); Enzo Baccarelli (University of Rome "La Sapienza", Italy); Nicola Cordeschi ("Sapienza" University of Rome, Italy)  
pp. 169-174

### Unified Analysis of Ergodic Capacity of Cooperative Non-Regenerative Relaying with Adaptive Source Transmission Policies

Annamalai Annamalai (Prairie View A&M University, USA)  
pp. 175-180

### On the Connection Availability between Relay Nodes in a VANET

André Cardote (Carnegie Mellon University / University of Aveiro, Portugal); Susana Isabel Barreto de Miranda Sargento (Instituto de Telecomunicações, Universidade de Aveiro, Portugal); Peter Steenkiste (Carnegie Mellon University, USA)

pp. 181-185

Communication Theoretic Analysis of Underwater Ad-Hoc Networks in the Presence of Interference  
Andrej Stefanov (Northeastern University, USA); Milica Stojanovic (Northeastern University, USA)

pp. 186-190

### **HeterWMN Wireless Networks: Session 3**

Performance Analysis of Cooperative Handover in Heterogeneous Wireless Networks

Zhiwei Gao (Tongji University, P.R. China); Yusheng Ji (National Institute of Informatics, Japan)

pp. 191-195

Multi-Channel Anypath Routing in Wireless Mesh Networks

Andreas Laven (Karlstad University, Sweden); Andreas J. Kassler (Karlstad University, Sweden)

pp. 196-201

Group-based Secure Source Authentication Protocol for VANETs

You Lu (Beijing University of Posts and Telecommunications, P.R. China); Biao Zhou (UCLA, USA); Fei Jia (University of California, Los Angeles, USA); Mario Gerla (University of California at Los Angeles, USA)

pp. 202-206

### **HeterWMN Wireless Sensor Networks: Session 3**

A Clustering/Multi-hop Hybrid Routing Method for Wireless Sensor Networks with Heterogeneous Node Types

Sampath Priyankara (University of Osaka, Japan); Kazuhiko Kinoshita (Osaka University, Japan); Hideki Tode (Osaka Prefecture University, Japan); Koso Murakami (Osaka University, Japan)

pp. 207-212

Effects of Sampling Rate on Collision Probability in Hybrid MAC Protocols in WSN

Waltenegus Dargie (Technische Universität Dresden, Germany); Qian Dong (Technical University of Dresden, Germany); Alexander Schill (Technische Universität Dresden, Germany)

pp. 213-218

Storage-aided Reliable Sensing for Dynamic Heterogeneous Sensor Networks; a Graph-Theoretic Analysis

Amar H Kabashi (University of Leeds, United Kingdom); Jaafar Elmoghani (University of Leeds, United Kingdom)

pp. 219-224

A Refinement Scheme for Location Estimation Process in Indoor Wireless Sensor Networks

Oleksandr Artemenko (University of applied sciences Erfurt, Germany); Gunar Schorcht (Erfurt University of Applied Sciences, Germany); Mikhail Tarasov (Ilmenau University of Technology, Germany)

pp. 225-229

### **Internet Routing**

Managing multicast tree reachability with PIM

Benoit Hilt (University of Haute Alsace, France); Jean-Jacques Pansiot (LSIIT - University of Strasbourg, France)

pp. 1497-1502

### **UAV Based Mesh and Sensor Networks for Cooperative UAVs**

Model-free Trajectory Optimization for Wireless Data Ferries among Multiple Sources

Benjamin Pearre (University of Colorado, Boulder, USA); Timothy Brown (University of Colorado, USA)

pp. 1793-1798

Measuring Diversity on a Low-Altitude UAV in a Ground-to-Air Wireless 802.11 Mesh Network

Ht Kung (Harvard University, USA); Chit-Kwan Lin (Harvard University, USA); Tsung-Han Lin (Harvard University, USA); Steve Tarsa (Harvard University, USA); Dario Vlah (Harvard University, USA)



pp. 1799-1804

Multi-Source Cooperative Communications Using Multiple Small Relay UAVs  
Xin Li (Villanova University, USA); Yimin Zhang (Villanova University, USA)

pp. 1805-1810

Performance Analysis of Multi-Carrier Relay-Based UAV Network Over Fading Channels  
Ibrahim Y Abualhaol (Khalifa University of Science, Technology, and Research, UAE); Mustafa  
Muhammad Matalgah (University of Mississippi, USA)

pp. 1811-1815

## **2:20 PM - 3:30 PM**

### **Interference Management for Femtocell Networks**

System Level Performance Evaluation of Inter-cell Interference Coordination Schemes for Heterogeneous Networks in LTE-A System

Young-Jun Hong (Samsung Electronics Co., Ltd., Korea); Namyoon Lee (Samsung Advanced Institute of Technology, Korea); Bruno Clerckx (Samsung Advanced Institute of Technology, Korea)

pp. 690-694

Femto-Macro Cellular Interference Control with Subband Scheduling and Interference Cancellation  
Sundeeep Rangan (Polytechnic University of New York University, USA)

pp. 695-700

Power Control Based Interference Mitigation in Multi-tier Network

Shu-ping Yeh (Intel Corporation, USA); Shilpa Talwar (Intel, USA); Nageen Himayat (Intel Corporation, USA); Kerstin Johnsson (Intel, USA)

pp. 701-705

A Q-learning Based Approach to Interference Avoidance in Self-Organized Femtocell Networks

Mehdi Bennis (Centre of Wireless Communications, University of Oulu, Finland); Dusit Niyato (Nanyang Technological University, Singapore)

pp. 706-710

## **3:50 PM - 4:45 PM**

### **Advanced Techniques for Femtocell Networks**

Interference Cancellation Schemes for Uplink Transmission in Femtocells

Chan Dai Truyen Thai (Aalborg University, Denmark); Petar Popovski (Aalborg University, Denmark)

pp. 711-715

LTE Femtocell System Through Amplify-and-Forward Over Cable Links

Jonathan Gambini (Politecnico di Milano, Italy); Umberto Spagnolini (Politecnico di Milano, Italy)

pp. 716-720

Interference Mitigation in Cognitive Femtocells

Gustavo W. O. Costa (Aalborg University, Denmark); Andrea F. Cattoni (Aalborg University, Denmark); Víctor Roig (Universitat Politècnica de Catalunya, Spain); Preben Mogensen (Nokia Siemens Networks, Aalborg, Denmark)

pp. 721-725

## **4:00 PM - 5:30 PM**

### **Protocol, Architecture and Ubiquitous Computing II**

Adaptive Sensing Cycle for Multichannel Cognitive Radio Networks Based on Packet Statistics

Yalin Zhang (Shenzhen Graduate School, Harbin Institute of Technology, Canada); Elvino Silveira Sousa (University of Toronto, Canada); Liang Song (University of Toronto, Canada); Qinyu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China); Dimitrios Hatzinakos

(University of Toronto, Canada)

pp. 1658-1662

Fault Repair Algorithm using Localization and Controlled mobility in WSN

Kapu Venkat Sayeesh (National Institute of Technology, Warangal, India); K. Vinod Kumar (National Institute of Technology, Warangal, India); G Lakshmi Phani (National Institute of Technology, Warangal, India); Sandhya Thaskani (IIIT-Hyderabad, India); Rama Garimella (IIIT Hyderabad, India)

pp. 1663-1667

MDP and Learning Based Approach for Ubiquitous Services Composition

Ali Yachir (Paris-Est University (France), EMP School and USTHB University (Algeria), Algeria); Karim Tari (LISSI Lab, University of Paris-Est Creteil Val de Marne (UPEC), France); Yacine Amirat (University Paris XII, France); Abdelghani Chibani (LISSI Lab., France); Nadjib Badache (University of Sciences and Technology Houari Boumediene (USTHB), Algeria)

pp. 1668-1673

## **FUSECO Panel: Challenges and Opportunities for emerging Seamless Communication Infrastructures**

3GPP Packet Core Evolution Prospects under mature 3GPP EPC Standard Environment

Wolfgang Hahn (Nokia Siemens Networks, Germany)

Mass Broadband Communication impact on the Core Network Evolution

Marius Corici (Fraunhofer FOKUS, Germany)

A Novel Architecture for Internet Traffic Offload

Parviz Yegani (Director & Head of SP Architecture and Technology Standards, Juniper Networks, USA)

Enabling customized services in 4G networks through virtualization

Sampath Rangarajan (NEC Labs America, USA)

## **Algorithms and Techniques for Mobile and Wireless Networks**

Unpredictable Software-based Attestation Solution for Node Compromise Detection in Mobile WSN

Xinyu Jin (Florida International University, USA); Pasd Putthapipat (Florida International University, USA); Deng Pan (Florida International University, USA); Niki Pissinou (Florida International University, USA)

pp. 2059-2064

TCP-FIT - A Novel TCP Congestion Control Algorithm for Wireless Networks

Wang Jingyuan (Tsinghua University, P.R. China); Jiangtao Wen (Tsinghua University, P.R. China); Jun Zhang (Tsinghua University, P.R. China); Yuxing Han (UCLA, USA)

pp. 2065-2069

Network Traffic Anomaly Detection based on Catastrophe Theory

Wei Xiong (Huazhong University of Science & Technology, P.R. China); Xiong Naixue (Georgia State University, US, USA); Laurence T. Yang (St. Francis Xavier University, Canada); Athanasios Vasilakos (University of Western Macedonia, Greece); Qian Wang (Zhongnan University of Economic & Law, P.R. China); Hanpin Hu (Huazhong of University, P.R. China)

pp. 2070-2074

A Novel Advanced Identity Management Scheme for Seamless Handoff in 4G Wireless Networks

Mohamed Hamdi (Carthage University, Tunisia); Nouredine A. Boudriga (University of Carthage, Tunisia); Manel Abdelkader (University of Carthage, Tunisia)

pp. 2075-2080

Web-Based Wireless Sensor Network Testbed For Industrial Applications

Sajid Hussain (Fisk University, USA)

## **Device Technologies**

Techniques for Embracing Intra-Cell Unbalanced Bit Error Characteristics in MLC NAND Flash Memory

Guiqiang Dong (Rensselaer Polytechnic Institute, USA); Ningde Xie (Intel Inc., USA); Tong Zhang (Rensselaer Polytechnic Institute, USA)

- pp. 1915-1920  
The Role of Non-Volatile Memory from an Application Perspective  
Brett Kettering (DoD, USA); James Nunez (Los Alamos National Lab, USA)
- pp. 1921-1925  
Predicting Disk I/O Time of HPC Applications on Flash Drives  
Mitesh R Meswani (San Diego Supercomputer Center, USA); Pietro Cicotti (UC San Diego, USA); Jiahua He (University of California, San Diego, USA); Allan Snaveley (University of California, San Diego, USA)
- pp. 1926-1929  
Beyond the Datasheet: Using Test Beds to Probe Non-Volatile Memories' Dark Secrets  
Laura M Grupp (University of California, San Diego, USA); Adrian M. Caulfield (UCSD, USA); Joel Coburn (UCSD, USA); John Davis (Microsoft Research, USA); Steven Swanson (University of California, San Diego, USA)
- pp. 1930-1935

## **Robust Memory Design**

- Towards Longer Lifetime of Emerging Memory Technologies Using Number Theory  
Lara Dolecek (UCLA, USA)  
pp. 1936-1940
- Scrubbing with Partial Side Information for Radiation-Tolerant Memory  
Euseok Hwang (Carnegie Mellon University, USA); Seungjune Jeon (Carnegie Mellon University, USA); Rohit Negi (Carnegie Mellon University, USA); B. V. K. Vijaya Kumar (Carnegie Mellon University, USA); Michael K. Cheng (Jet Propulsion Laboratory, USA)  
pp. 1941-1945
- FFT Processing Through Faulty Memories in OFDM based Systems  
Muhammad S Khairy (University of California, Irvine, USA); Amin Khajeh (University of California, Irvine, USA); Ahmed Eltawil (University of California, Irvine, USA); Fadi J Kurdahi (University of California, Irvine, USA)  
pp. 1946-1951
- Peer-to-peer Technologies Applied to Data Warehouses  
Simone Cirani (University of Parma, Italy); Lorenzo Melegari (University of Parma, Italy); Luca Veltri (University of Parma, Italy)  
pp. 1952-1956

## **Broadband Single Carrier IV**

- Frequency domain equalization and multiple access: The second childhood of single carrier modulation  
Stefano Tomasin (University of Padova, Italy)
- Low Complexity Turbo Equalization for Mobile OFDM Systems with Application to DVB-H  
Devan Namboodir (Rutgers, USA); Hong Liu (Broadcom Corporation, USA); Predrag Spasojevic (Rutgers University, USA)  
pp. 1328-1333
- A Comparative Study of Frequency Domain HARQ Chase Combining Schemes for Broadband Single Carrier MIMO CDMA Communication  
Houda Chafnaji (INPT Rabat/Telecom Bretagne, Morocco); Tarik Ait-Idir (INPT, Morocco); Samir Saoudi (Telecom-Bretagne, France)  
pp. 1334-1338

## **Session #4: Coding for MIMO Systems**

- Performance Enhancement in Limited Feedback Precoded Spatial Multiplexing MIMO-OFDM Systems by Using Multi-Block Channel Prediction  
Shichuan Ma (University of Nebraska-Lincoln, USA); Deborah Duran-Herrmann (University of Nebraska-Lincoln, USA); Yaoqing (Lamar) Yang (University of Nebraska-Lincoln, USA); Hamid Sharif (University of Nebraska-Lincoln, USA)

pp. 845-849

#### Coordinated Multi-Point Transmission with Limited Feedback

Jing Jin (Beijing University of Posts and Telecommunications, P.R. China); Qixing Wang (China Mobile Research Institute (CMRI), P.R. China); Chongsheng Lin (Wireless Research Center, Beijing University of Posts and Telecommunications, P.R. China); Hongwen Yang (Beijing University of Posts and Telecommunications, P.R. China); Yafeng Wang (Beijing University of Posts and Telecommunications, P.R. China)

pp. 850-854

#### Adaptive Decoding for Space Time Codes with Imperfect Channel Estimation, Using the Bootstrap Algorithm

Amir Laufer (New Jersey Institute of Technology, USA); Yeheskel Bar-Ness (New Jersey Institute of Technology, USA)

pp. 855-859

#### Uplink Cooperation in Wireless Networks With NICE Processing

Mehmet Kemal Karakayali (Bell Labs, Alcatel-Lucent, USA); Krishna Balachandran (Bell Labs, Alcatel-Lucent, USA); Joseph H. Kang (Bell Labs, Alcatel-Lucent, USA); Kiran M Rege (Bell Laboratories, Alcatel-Lucent, USA)

pp. 860-865

#### QRD-Based MU-MIMO Transmission Scheme Towards Evolved LTE TDD System

Xiaolin Hou (DOCOMO Beijing Communications Laboratories Co., Ltd, P.R. China); Zhan Zhang (DoCoMo Beijing Labs., P.R. China); Hidetoshi Kayama (Ntt Docomo, Inc., Japan)

pp. 866-870

#### Designs of precoding for LTE TDD using cell specific reference signals

Fan Sun (Aalborg University, Denmark); Lu Lu (Royal Institute of Technology, Sweden); Troels B. Sørensen (Aalborg University, Denmark)

pp. 871-875

### **Performance of Service-Oriented Systems**

#### Performance Modeling of Virtual Collaborative Environments

Nilesh Gavaskar (North Carolina State University, USA); Michael Kallitsis (North Carolina State University, USA); George Michailidis (University of Michigan, USA); Michael Devetsikiotis (North Carolina State University, USA); Mitzi Montoya (North Carolina State University, USA)

pp. 1383-1387

### **HeterWMN Panel Discussion**

## **4:00 PM - 6:00 PM**

### **P2P, Anycast, and New Distribution Models**

#### On Shared Medium Capacity Awareness in Heterogeneous Application-Layer Multicast

Christian Hübsch (Karlsruhe Institute of Technology (KIT), Germany); Oliver P. Waldhorst (Karlsruhe Institute of Technology (KIT), Germany)

pp. 1503-1507

#### P2P Multicasting Network Design Problem - Heuristic Approach

Krzysztof Walkowiak (Wroclaw University of Technology, Poland)

pp. 1508-1512

#### Anycast-based Context-Aware Server Selection Strategy for VoD Services

Soraya Ait Chellouche (University of Bordeaux, France); Daniel Negru (University of Bordeaux, France); Eugen Borcoci (University POLITEHNICA of Bucharest (CCSRST), Romania); Eric LeBars (Thomson Grass Valley, France)

pp. 1513-1517

#### Analyzing Implicit Group Messaging: a novel messaging paradigm for group-oriented content distribution

Neil Cowzer (University College Dublin, Ireland); Paddy Nixon (University College Dublin (UCD), Ireland)

pp. 1518-1522

## **4:00 PM - 5:30 PM**

### **System Design Aspects and Protocols for UAV-Based Sensor Networks**

Moving Ground Target Tracking in Urban Terrain Using Air/Ground Vehicles

Mark Owen (Brigham Young University, USA); Huili Yu (Brigham Young University, USA); Tim McLain (Brigham Young University, USA); Randy Beard (Brigham Young University, USA)  
pp. 1816-1820

UAV-Based Passive Geolocation Based on Channel Estimation

Qilian Liang (University of Texas at Arlington, USA); Sherwood Samn (AFRL, USA)  
pp. 1821-1825

QoS Constraint with Prioritized Frame Selection CDMA MAC Protocol for WSN Employing UAV

Dac-Tu Ho (Waseda University, Japan); Jingyu Park (University of Waseda, Japan); Shigeru Shimamoto (Waseda University, Japan)  
pp. 1826-1830

Decentralised Cooperative Aerial Surveillance for Harbour Security: A Formal Verification Approach

Gopinadh Sirigineedi (Cranfield University, United Kingdom); Antonios Tsourdos (Cranfield University, United Kingdom); Brian White (Cranfield University, United Kingdom); Peter M G Silson (Cranfield University, United Kingdom)  
pp. 1831-1835

## **4:45 PM - 5:30 PM**

### **Panel Discussion**

The Future of Heterogeneous Networks

## **Friday, December 10**

## **8:15 AM - 9:00 AM**

### **Opening & Keynote Talk**

Keynote by Chip Elliot (BBN Technologies, USA)

## **9:00 AM - 10:30 AM**

### **Research Topics on Mobile Ad-hoc Networks**

Neighbor Coordinated Positioning Based Power Control for Cognitive Radio Ad Hoc Networks

Nan Hao (Inha university, Korea); Sang-jo Yoo (Inha University, Korea)  
pp. 1082-1086

Raptor Code for Wireless Ad Hoc Vehicular Safety Broadcast

Nor Fadzilah Abdullah (University of Bristol, United Kingdom); Robert J Piechocki (University of Bristol, United Kingdom); Angela Doufexi (University of Bristol, United Kingdom)  
pp. 1087-1091

An RFID based System for Digital Investigation in Vehicular Adhoc Networks

Bayrem Triki (ISETCOM, Tunisia); Slim Rekhis (University of the 7th of November at Carthage, Tunisia); Nouredine A. Boudriga (University of Carthage, Tunisia)  
pp. 1092-1096

A Genetic Approach for Trajectory Planning in Non-Autonomous Mobile Ad-Hoc Networks with QoS Requirements

Ala I Al-Fuqaha (Western Michigan University, USA); Dionysios Kountanis (Western Michigan University, USA)  
pp. 1097-1102

Dominant Pruning based Query Routing in Peer Databases over MANETs

Theodosios Aggelidis (University of Ioannina, Greece); Evangelos Papapetrou (University of Ioannina, Greece)  
pp. 1103-1107

## **Recent Trends in Mesh – Networking for Wireless Communications**

Resource Adaptations for Revenue Optimization in Cognitive Mesh Network Using Reinforcement Learning

Ayoub Alsarhan (Concordia university, Canada); Anjali Agarwal (Concordia University, Canada)  
pp. 1108-1112

Fault-Tolerant and Scalable Channel Assignment for Multi-Radio Multi-Channel IEEE 802.11a-based Wireless Mesh Networks

Aizaz Chaudhry (Carleton University, Canada); Roshdy H Hafez (Carleton University, Canada); Osama Aboul-Magd (Carleton University, Canada); Samy Mahmoud (Carleton University, Ottawa, Canada)  
pp. 1113-1117

Context-Based Connectivity and Characterization of Wireless Mesh Networks: Simulation Study

Ricardo Matos (Instituto de Telecomunicações, Universidade de Aveiro, Portugal); Carlos Marques (Instituto de Telecomunicações, Universidade de Aveiro, Portugal); Susana Isabel Barreto de Miranda Sargento (Instituto de Telecomunicações, Universidade de Aveiro, Portugal)  
pp. 1118-1123

Power Entangling and Matching in Cognitive Wireless Mesh Networks by Applying Conjecture Based Multi-agent QQ-learning Approach

Xianfu Chen (Zhejiang University, P.R. China); Zhifeng Zhao (Zhejiang University, P.R. China); Honggang Zhang (Zhejiang University, P.R. China)  
pp. 1124-1129

rt-WinF: Real Time Wireless Inference Mechanism

Bruno Rés (Instituto de Telecomunicações, Universidade de Aveiro, Portugal); Luis Barreto (Escola Superior de Ciências Empresariais, Inst. Politécnico de Viana do Castelo, Portugal); Susana Isabel Barreto de Miranda Sargento (Instituto de Telecomunicações, Universidade de Aveiro, Portugal)  
pp. 1130-1135

## **Resource Management and Routing in Heterogeneous Networks**

An Adaptive Desktop Transfer Protocol for Mobile Thin Client

Tomoharu Imai (Fujitsu Laboratories Ltd., Japan); Kenichi Horio (Fujitsu Laboratories Ltd., Japan); Takashi Ohno (Fujitsu Labs., Japan); Kazuki Matsui (Fujitsu Laboratories Ltd., Japan)  
pp. 1136-1140

Federation Agreements Performance in Heterogeneous Environments: Non-Cooperative Games Approach

Dimitris Charilas (National Technical University of Athens, Greece); Polychronis Mathioudakis (NTUA, Greece); Athanasios D. Panagopoulos (National Technical University of Athens, Greece); Philip Constantinou (National Technical University of Athens, Greece)  
pp. 1141-1145

Determining dependencies in multi technology inter domain wireless access; A case study

Eirik L Følstad (Norwegian University of Science and Technology, Norway); Bjarne E. Helvik (Norwegian University of Science and Technology, Norway)  
pp. 1146-1150

Self-Organizing Multiple Access with Minimal Information: Networking in El Farol Bar

Marina Petrova (RWTH Aachen University, Germany); Maria Michalopoulou (RWTH Aachen University, Germany); Petri Mähönen (RWTH Aachen University, Germany)  
pp. 1151-1156

Multi-Connection and Rate Allocation in Heterogeneous Wireless Networks

Weihuang Fu (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)  
pp. 1157-1161

## **Multimedia Communications\_a**

Finite Horizon Scheduling in Wireless Ad hoc Networks

Murad Khalid (USF, USA); Xuan Hung Le (University of Rochester, USA); Inho Ra (Kunsan National University, Korea); Ravi Sankar (University of South Florida, USA)  
pp. 876-881

Server Selection with Delay Constraints for Online Games

Yuh-Rong Chen (University of Oklahoma, USA); Sridhar Radhakrishnan (University of Oklahoma, USA); Sudarshan Dhall (University of Oklahoma, USA); Suleyman Karabuk (University of Oklahoma, USA)  
pp. 882-887

## **Multimedia Applications\_a**

Hierarchical Modulation with Vector Rotation for Multimedia Broadcasting

Hui Zhao (Beijing University of Posts and Telecommunications, P.R. China); Xiaoping Zhou (Beijing University of Posts and Telecommunications, P.R. China); Wenbo Wang (Beijing University of Posts and Telecommunications, P.R. China)  
pp. 888-892

4K Digital Cinema Home Theater over High Throughput Wireless Transmission System

Masayuki Kurosaki (Kyusyu Institute of Technology, Japan); Masateru Matsuo (Kyushu Institute of Technology, Japan); Kuroki Yoshimitsu (Kurume national College of Technology, Japan); Ryuta Imashioya (Kyushu Institute of Technology, Japan); Sai Baiko (Rohm Co, Japan); Hiroshi Ochi (Kyushu Institute of Technology, Japan)  
pp. 893-897

Performance Evaluation of Video Streaming over Mobile WiMAX Networks

Mengke Hu (Institut Telecom SudParis, France); Hongguang Zhang (Institut Telecom, Telecom SudParis, France); Tien Anh Le (Institut Telecom, Telecom SudParis, France); Hang Nguyen (Institut Telecom, Telecom SudParis, France)  
pp. 898-902

## **9:00 AM - 10:00 AM**

### **Keynote speech 1**

Keynote 1: Impact of IPv6 on Network Management, Autonomicity, Cloud Computing, Internet of Things & SmartGrids

Latif Ladid (IPv6 Forum, Luxemburg)

## **9:00 AM - 10:30 AM**

### **Mobility in Heterogeneous Wireless Networks**

Network-Assisted Handover for Heterogeneous Wireless Networks

Claudio Cicconetti (Intecs S.p.A., Italy); Francesco Galeassi (Intecs S.p.A., Italy); Raffaella Mambrini (Intecs S.p.A., Italy)  
pp. 1-5

A Concept for Context-Enhanced Heterogeneous Access Management

Andreas Klein (University of Kaiserslautern, Germany); Christian Mannweiler (University of Kaiserslautern, Germany); Joerg Schneider (University of Kaiserslautern, Germany); Hans D. Schotten (University of Kaiserslautern, Germany)  
pp. 6-10

On Modeling Speed-Based Vertical Handovers in Vehicular Networks "Dad, slow down, I am watching the movie"

Flavio Esposito (Boston University, USA); Anna Maria Vegni (University of ROMA TRE, Italy); Ibrahim Matta (Boston University, USA); Alessandro Neri (University of ROMA TRE, Italy)  
pp. 11-15

Proxy Mobile IP with Distributed Mobility Anchors  
H Anthony Chan (Huawei Technologies, USA)  
pp. 16-20

## **Invited Talk**

### **Advanced Sensor Integration Technology 01**

Geographic Routing in Random Duty-cycled Wireless Multimedia Sensor Networks

Kun Wang (Dalian University of Technology, P.R. China); Lei Wang (Dalian University of Technology, P.R. China); Can Ma (Dalian University of Technology, P.R. China); Lei Shu (Osaka University, Japan); Joel J. P. C. Rodrigues (Instituto de Telecomunicações, University of Beira Interior, Portugal)  
pp. 230-234

Integration of Component-based frameworks with Sensor modelling Languages for the Sensor Web

Ramiro Liscano (University of Ontario Institute of Technology, Canada); Kimia Kazemi (UOIT, Canada)  
pp. 235-240

Cooperative STBC with Fuzzy Election Applied to Surveillance Wireless Video Sensor Networks

Marcelo Portela Sousa (Federal University of Campina Grande, Brazil); Rafael Fernandes Lopes (Federal University of Campina Grande, Brazil); Ajey Kumar (Federal University of Campina Grande, Brazil); Waslon Terlizzie Araujo Lopes (UFCEG - Federal University of Campina Grande, Brazil); Marcelo S. Alencar (Federal University of Campina Grande, Brazil)  
pp. 241-245

### **Complex & Communication Networks 1**

Connectivity of Two-Tier Networks

Qing Zhou (Texas A&M University, USA); Long Gao (Hitachi America, Ltd, USA); Shuguang Cui (Texas A&M University, USA)  
pp. 368-372

A Case for Community-Centric Controls for Information Sharing on Online Social Networks

Amin Ranjbar (McGill University, Canada); Muthucumar Maheswaran (McGill University, Canada)  
pp. 373-377

On the Design of Complex Networks through a Branch-and-Price Algorithm

Fernanda S H Souza (Federal University of Minas Gerais, Brazil); Alexandre Cunha (Universidade Federal de Minas Gerais, Brazil); Geraldo R Mateus (Universidade Federal de Minas Gerais, Brazil)  
pp. 378-382

## **9:00 AM - 10:00 AM**

### **Greeting and Keynote Presentation**

Keynote by Suresh Singh

## **9:00 AM - 10:30 AM**

### **Virtualization & Cross-Layer Approach**

A Distributed Approach for Virtual Network Discovery

João Nogueira (University of Aveiro, Portugal Telecom Inovação, Portugal); Márcio Melo (Portugal



Telecom Inovação, University of Aveiro, Portugal); Jorge Carapinha (PT Inovação S.A. Telecom Group, Portugal); Susana Isabel Barreto de Miranda Sargento (Instituto de Telecomunicações, Universidade de Aveiro, Portugal)  
pp. 277-282

#### Network Troubleshooting with Mirror VNets

Andreas Wundsam (Deutsche Telekom Laboratories, TU Berlin, Germany); Muhammad Amir Mehmood (TU Berlin/Deutsche Telekom Laboratories, Germany); Anja Feldmann (TU-Berlin, Germany); Olaf Maennel (Loughborough University, United Kingdom)  
pp. 283-287

#### Performance Evaluation of Open Virtual Router

Muhammad Siraj Rathore (KTH University Stockholm, Sweden); Markus Hidell (KTH - Royal Institute of Technology, Sweden); Peter Sjödin (KTH, Sweden)  
pp. 288-293

#### Meta-Headers: Top-Down Networking Architecture with Application-Specific Constraints

Murat Yuksel (University of Nevada - Reno, USA)  
pp. 294-299

### **9:00 AM - 9:10 AM**

#### **Welcome**

### **9:00 AM - 9:50 AM**

#### **Invited speaker - Pablo Cesar, CWI (Centrum Wiskunde & Informática), The Netherlands**

Multimedia and the Web of Things

### **9:10 AM - 10:40 AM**

#### **Modulation and Coding**

##### Constellation Design for Color-Shift Keying Using Billiards Algorithms

Robert J. Drost (Army Research Laboratory, USA); Brian Sadler (Army Research Laboratory, USA)  
pp. 980-984

##### Rateless Codes for Slant Path Free Space Optical Channels

Ling Liu (School of Electrical and Computer Science, Peking University, P.R. China); Anhong Dang (Peking University, P.R. China); Hong Guo (School of Electrical and Computer Science, Peking University, P.R. China)  
pp. 985-989

##### On the Performance of Space Shift Keying for Optical Wireless Communications

Thilo Fath (EADS Deutschland GmbH, Germany); Marco Di Renzo (French National Center for Scientific Research (CNRS), France); Harald Haas (The University of Edinburgh, United Kingdom)  
pp. 990-994

##### Performance of Two Dimensional Asymmetrically Clipped Optical OFDM

Md. Rubaiyat Mondal (Monash University, Australia); Jean Armstrong (Monash University, Australia); Kusha Panta (Monash University, Australia)  
pp. 995-999

##### Link Adaptation for Parallel Channels with Encoder Rate and Modem Symbol Rate Constraints

Yi Tang (University of Virginia, USA); Maite Brandt-Pearce (University of Virginia, USA); Stephen G. Wilson (University of Virginia, USA)  
pp. 1000-1004

### **9:50 AM - 10:30 AM**

## **Ubiquitous computing**

Service Advertisements in MANETs (SAM): A Decentralized Web Services Discovery Protocol  
Frank T. Johnsen (Norwegian Defence Research Establishment (FFI), Norway); Trude Hafsøe  
(Norwegian Defence Research Establishment (FFI), Norway)  
pp. 1674-1678

MASS: editor for mobile ad-hoc network scenarios  
Sergio Cabrero (University of Oviedo, Spain); Xabiel García Pañeda (University of Oviedo, Spain);  
David Melendi (University of Oviedo, Spain); Roberto Garcia (University of Oviedo, Spain)  
pp. 1679-1683

## **10:00 AM - 10:30 AM**

### **Autonomic Networking, Cognitive Networking, and Self-Management (A)**

Towards Autonomic Network Performance Management in Mobile Ad Hoc Networks  
Abdelhamid G Moursy (University of Louisiana at Lafayette, USA); Bide Xu (University of Louisiana at  
Lafayette, USA); Dmitri Perkins (University of Louisiana at Lafayette, USA); Magdy Bayoumi (University  
of Louisiana, USA)  
pp. 448-453

Achieving distributed load balancing in self-organizing LTE radio access network with autonomic network  
management  
Heng Zhang (Beijing University of Posts and Telecommunications, P.R. China); Qiu Xue-song (Beijing  
University of Posts and Telecommunications, P.R. China); Luoming Meng (Beijing University of Posts  
and Telecommunications, P.R. China); Xidong Zhang (Beijing University of Posts and  
Telecommunications, P.R. China)  
pp. 454-459

### **Management of P2P Networks and Ad-Hoc Networks (A)**

CATS: A Topology Construction Based On Semantic Group for Capacity-Aware in Heterogeneous P2P  
Networks  
Wenwu Shen (Beijing University of Posts and Telecommunications, P.R. China); Sen Su (Beijing  
University of Posts & Telecommunications (BUPT), P.R. China); Peng Xu (Beijing University of Posts  
and Telecommunications, P.R. China); Jingshu Xia (Beijing University of Posts and  
Telecommunications, P.R. China)  
pp. 460-464

Implementing Hierarchical Trick Play for HTTP Video Streaming  
Guanhua Zhang (Samsung Electronics, Korea); Hojin Ha (Samsung Electronics, Korea); O-Hoon Kwon  
(Samsung Electronics, Korea); Sungbin Im (Samsung Electronics, Korea)  
pp. 465-468

### **Best Paper Presentation**

An Analytical Model for Designing and Controlling New-Generation Green Devices  
Raffaele Bolla (University of Genoa, Italy); Roberto Bruschi (CNIT, Italy); Alessandro Carrega  
(University of Genoa, Italy); Franco R Davoli (University of Genoa, Italy)  
pp. 1388-1393

## 11:00 AM - 12:30 PM

### Recent Advances in Cognitive Radio Systems and Networks

- Sequential Search of Available Channels in Cognitive Radios  
Ruben de Francisco (IMEC / Holst Centre, The Netherlands)  
pp. 1162-1166
- Opportunistic Cognitive Radio Broadcast Channel: Asymptotic Performance  
Yang Li (University of Texas at Dallas, USA); Aria Nosratinia (University of Texas, Dallas, USA)  
pp. 1167-1171
- Subcarrier and Power Allocation for Multiuser OFDM-based Cognitive Radio Uplink Systems  
Wei-Cheng Pao (National Central University, Taiwan); Yung-Fang Chen (National Central University, Taiwan); Chao-Chun Lai (National Central University, Taiwan)  
pp. 1172-1176

### Research on Cooperative Communications and Relay Utilization

- Power Allocation for Cooperative-Based Jamming in Wireless Networks with Secrecy Constraints  
Ioannis Krikidis (University of Cyprus, Cyprus); John Thompson (University of Edinburgh, United Kingdom); Peter Grant (Edinburgh School of Engineering and Electronics, United Kingdom); Steve McLaughlin (University of Edinburgh, United Kingdom)  
pp. 1177-1181
- The Optimal Performance of Cooperative Communication Systems as a Function of Location Information Quality  
Arvind Chakrapani (University of New South Wales, Australia); Jun Li (University of New South Wales, Australia); Robert Malaney (University of New South Wales, Australia); Jinhong Yuan (University of New South Wales, Australia)  
pp. 1182-1186
- Location-based Relay Selection and Power Adaptation Enabling Simultaneous Transmissions  
Jimmy J Nielsen (Aalborg University, Denmark); Tatiana Madsen (Aalborg University, Denmark); Hans-Peter Schwefel (Forschungszentrum Telekommunikation Wien, Austria)  
pp. 1187-1191
- On the Delay Optimal Downlink Scheduling with Relay Stations  
Seung Baek (Korea University, Korea)  
pp. 1192-1196

### Multimedia Communications\_b

- A High-Speed Key Exchange Multi-Core SoC Architecture for IPSec Real-Time Internet Traffic  
Patrick Moore (Queen's University Belfast, United Kingdom); Maire O'Neill (Queen's University Belfast, United Kingdom); Kieran McLaughlin (Queen's University Belfast, United Kingdom); Sakir Sezer (Queen's University Belfast, United Kingdom)  
pp. 903-907
- Design and Implementation of Web-Telecom Hybrid Services Bus based Execution Platform over Convergence Networks  
Bo Cheng (Beijing University of Posts & Telecommunications, P.R. China); Yang Zhang (Beijing University of Posts & Telecommunications, P.R. China); Junliang Chen (Beijing University of Posts & Telecommunications, P.R. China)  
pp. 908-912
- System-assisted Service Evolution for a Future Internet - The HAMcast Approach to Pervasive Multicast  
Sebastian Meiling (Hamburg University of Applied Sciences, Germany); Dominik Charousset (HAW Hamburg, Germany); Thomas C. Schmidt (HAW Hamburg (DE), Germany); Matthias Wählisch (Freie Universität Berlin, Germany)  
pp. 913-917

## **Multimedia Applications\_b**

Reliable Data Transmission Using IBRC and LT Codes Over AWGN Channels

Sida Lv (Zhejiang University, P.R. China); Zhifeng Zhao (Zhejiang University, P.R. China); Honggang Zhang (Zhejiang University, P.R. China)  
pp. 918-923

Moving Average Based Predictors for MPEG-4 VBR Traffic Sources

Harikrishna N (Indian Institute of Science, Bangalore, India); Raghuveera Tripurarihatla (Anna University, India); Easwarakumar K.s. (Anna University, India)  
pp. 924-928

IPTV Performance in IEEE 802.11n WLANs

Marcelo Atenas (Universidad Politécnica de Valencia, Spain); Sandra Sendra (Universidad Politécnica de Valencia, Spain); Miguel Garcia (Polytechnic University of Valencia, Spain); Jaime Lloret (Universidad Politécnica de Valencia, Spain)  
pp. 929-933

## **Autonomic Networking, Cognitive Networking, and Self-Management (B)**

Autonomic Fault-Management and Resilience from the Perspective of the Network Operation Personnel

Nikolay Tcholtchev (FOKUS Fraunhofer Institute for Open Communication Systems, Germany); Ranganai Chaparadza (Fraunhofer Fokus, Germany)  
pp. 469-474

Probabilistic Trans-Algorithmic Search for Automated Network Management and Configuration

Bilal Gonen (University of Nevada, Reno, USA); Murat Yuksel (University of Nevada - Reno, USA); Sushil Louis (University of Nevada - Reno, USA)  
pp. 475-480

Proactive Fault Management based on Risk-Augmented Routing

Bruno Vidalenc (Alcatel-Lucent Bell Labs France, France); Laurent Ciavaglia (Alcatel-Lucent, France)  
pp. 481-485

On the Performance of Host-Based Business Process Aware QoS Management

Patrick-Benjamin Bök (Ruhr-University Bochum, Germany); Dennis Pielken (Ruhr-University Bochum, Germany); York Tüchelmann (Ruhr-University Bochum, Germany)  
pp. 486-491

A Platform for the Integration and Management of Cognitive Systems in Future Networks

Vera Stavroulaki (University of Piraeus, Greece); Nikos Koutsouris (University of Piraeus, Greece); Kostas Tsagkaris (University of Piraeus, Greece); Panagiotis Demestichas (University of Piraeus, Greece)  
pp. 492-497

Applying distributed monitoring techniques in autonomic networks

Anastasios Zafeiropoulos (Greek Research and Technology Network, Greece); Athanssios Ch. Liakopoulos (National Technical University of Athens, Greece); Constantinos Marinos (National Technical University of Athens, Greece); Mary Grammatikou (National Technical University of Athens, Greece); Nikolay Tcholtchev (FOKUS Fraunhofer Institute for Open Communication Systems, Germany); Panagiotis Gouvas (National Technical University of Athens, Greece)  
pp. 498-502

## **Management of P2P Networks and Ad-Hoc Networks (B)**

A Simple Packet Authentication Mechanism Based on Stateless Core Approach

Shuai Hao (Beijing University of Posts and Telecommunications, P.R. China); Xiaohong Huang (Beijing University of Posts and Telecommunications, P.R. China); Yan Ma (Beijing University of Posts and Telecommunications, P.R. China)  
pp. 503-507

Trust Management for Collusion Prevention in Mobile Ad Hoc Networks

Marcin Seredynski (University of Luxembourg, Luxembourg); Pascal Bouvry (University of Luxembourg, Luxembourg)

pp. 508-513

An Analytical Model of the Service Provisioning Time within the Harmony Network Service Plane  
Alexander Willner (University of Bonn, Germany); Jordi Ferrer Riera (Fundació i2CAT, Internet i Innovació Digital a Catalunya, Spain); Joan A. Garcia-Espin (Fundació i2CAT, Internet i Innovació Digital a Catalunya, Spain); Sergi Figuerola (Fundació i2CAT, Internet i Innovació Digital a Catalunya, Spain); Marc De Leenheer (Ghent University, Belgium); Chris Develder (Ghent University - IBBT, Belgium)

pp. 514-518

Topology Investigation of a large-Scale P2P VoD Overlay Network based on Active Measurement  
Bing Li (Tianjin University, P.R. China); Maode Ma (Nanyang Technological University, Singapore); Zhigang Jin (Tianjin University, P.R. China); Dongxue Zhao (Tianjin University, P.R. China)

pp. 519-523

Distributed Energy Self-Adaptation in ad hoc Networks

Patricia Ruiz (, Luxemburg); Pascal Bouvry (University of Luxembourg, Luxemburg)

pp. 524-528

## **Keynote Talk and Panel Discussion**

### **Wireless Sensor Network**

Energy Efficient Routing for Wireless Sensor Networks in Urban Environments

Sanjay Dhurandher (NSIT, University of Delhi, India); Mohammad S. Obaidat (Monmouth University, USA); Deepank Gupta (Netaji Subhas Institute of Technology, India); Nidhi Gupta (Netaji Subhas Institute of Technology, India); Anupriya Asthana (Netaji Subhas Institute of Technology, India)

pp. 1523-1527

A Robust Pair-wise and Group Key Management Protocol for Wireless Sensor Network

Md. Musfiq Rahman (Dalhousie University, Canada); Srinivas Sampalli (Dalhousie University, Canada); Sajid Hussain (Fisk University, USA)

pp. 1528-1532

A Scalable and Efficient Key Establishment Protocol for Wireless Sensor Networks

Ali Fanian (Isfahan University of Technology, Iran); Mehdi Berenjkoob (IUT, Iran); Hossein Saidi (Isfahan University of Technology, Iran); T. Aaron Gulliver (University of Victoria, Canada)

pp. 1533-1538

Efficient Key Management in Sensor Networks

Abhishek Parakh (Oklahoma State University, USA); Subhash Kak (Oklahoma State University, USA)

pp. 1539-1544

### **Advanced Sensor Integration Technology 02**

An Ultra Wideband Communication Channel Model for the Human Abdominal Region

Stig Støa (Rikshospitalet University Hospital, Norway); Raul Chavez-Santiago (Rikshospitalet University Hospital, Norway); Ilangko Balasingham (Norwegian University of Science & Technology, Norway)

pp. 246-250

A Large Scale Content-Based Network Considering Publish/Process/Subscribe

Hideya Ochiai (The University of Tokyo, Japan); Shingo Kimura (Nara Institute of Science and Technology, Japan); Kazutoshi Fujikawa (Nara Institute of Science and Technology, Japan); Hideki Sunahara (Keio University, Japan)

pp. 251-255

A Novel Gait Recognition Analysis System based on Body Sensor Networks for Patients with Parkinson's Disease

Shancang Li (Swansea University, United Kingdom); Jue Wang (Xi'an Jiaotong University, P.R. China)

pp. 256-260

### **Complex & Communication Networks 2**

Social Network Aware Routing and Prefetching on Dual-Mode Wireless Networks

L. Richard Carley (Carnegie Mellon University, USA); Kathleen Carley (CMU, USA)  
pp. 383-388

Impact of complex network properties on routing in backbone networks

Philippe Giabbanelli (Simon Fraser University, Canada)  
pp. 389-393

A New Power Law in Topology Discovery Based on Shortest-path

Yahui Wang (Beihang University, P.R. China); Danning Wang (Beihang University, P.R. China);  
Mingming Chen (Beihang University, P.R. China); Shiyao Qian (State Key Lab. of Software  
Development Environment, Beihang University, P.R. China); Ke Xu (State Key Lab. of Software  
Develop Environment Beihang University, P.R. China)  
pp. 394-399

Deriving Network Topologies from Real World Constraints

Mahmood A Hameed (University of Kansas, USA); Abdul Jabbar (The University of Kansas, USA);  
Egemen K Çetinkaya (University of Kansas, USA); James P. G. Sterbenz (University of Kansas &  
Lancaster University (UK), USA)  
pp. 400-404

## **Performance vs. Energy Trade-Offs**

On the Transmission-Computation-Energy Tradeoff in Wireless and Fixed Networks

Peter Rost (NEC Laboratories Europe, Germany); Gerhard Fettweis (Technische Universität Dresden,  
Germany)  
pp. 1394-1399

Joint Bandwidth-Power Allocation for Energy Efficient Transmission in Multi-user Systems

Shunqing Zhang (Huawei Technologies, Co. Ltd., P.R. China); Yan Chen (Huawei, P.R. China);  
Shugong Xu (Huawei, P.R. China)  
pp. 1400-1405

Bit per Joule Efficiency of Cooperating Base Stations in Cellular Networks

Albrecht J Fehske (Technische Universität Dresden, Germany); Patrick Marsch (Technische Universität  
Dresden, Germany); Gerhard Fettweis (Technische Universität Dresden, Germany)  
pp. 1406-1411

What Can Green Hybrid Optical Circuit Architecture Achieve?

Katsushi Kobayashi (RIKEN, Japan); Dai Mochinaga (Mitsubishi Research Institute, Japan); Ichiro  
Murase (MRI (Mitsubishi Research Insititute), Japan); Tomohiro Kudoh (AIST, Japan)  
pp. 1412-1416

Greening the Availability Design of Optical WDM Networks

Burak Kantarci (University of Ottawa, Canada); Hussein Mouftah (University of Ottawa, Canada)  
pp. 1417-1421

## **ID/Locator Separation & Overlay Networks**

Context-Aware Location in the Internet of Things

Federico Andreini (Intecs S.p.A., Italy); Claudio Cicconetti (Intecs S.p.A., Italy); Flavio Crisciani (Intecs  
S.p.A., Italy); Raffaella Mambrini (Intecs S.p.A., Italy)  
pp. 300-304

On The Change Rate of Identifier (ID)-to-locator Mappings in Networks with ID/Locator Separation

Luo Hongbin (Beijing Jiaotong University, P.R. China); Zhang Hongke (Beijing Jiaotong University, P.R.  
China); Chunming Qiao (State University of New York at Buffalo, USA)  
pp. 305-309

On the Cost of Supporting Mobility and Multihoming

Vatche Ishakian (Boston University, USA); Ibrahim Matta (Boston University, USA); Joseph Akinwumi  
(Boston University, USA)  
pp. 310-314

Self transforming to power law topology for overlay networks

Suyong Eum (OSAKA University, Japan); Shin'ichi Arakawa (Osaka University, Japan); Murata

Masayuki (Osaka University, Japan)  
pp. 315-320

## Diversity Techniques

- Experimental evaluation of transmitter and receiver diversity in a terrestrial FSO link  
Jaime A. Anguita (University of the Andes, Chile); Jaime Cisternas (University of the Andes, Chile)  
pp. 1005-1009
- Selection Diversity for Wireless Optical Communications with Non-coherent Detection without CSI  
Hassan Moradi (University of Oklahoma, USA); Hazem Refai (Oklahoma University, USA); Peter LoPresti (Tulsa University, USA); Mohammed Atiquzzaman (University of Oklahoma, USA)  
pp. 1010-1014
- Diversity Gains for MIMO Wireless Optical Intensity Channels With Atmospheric Fading and Misalignment  
Ahmed A. Farid (McMaster University, Canada); Steve Hranilovic (McMaster University, Canada)  
pp. 1015-1019
- A New Scheme on Time-diversity Atmospheric OCDMA System over Atmospheric Turbulence Channels  
Peng Liu (WASEDA University, Japan); Tien Dat Pham (Waseda University, Japan); Kazuhiko Wakamori (Waseda University, Japan); Mitsuji Matsumoto (Waseda University, Japan)  
pp. 1020-1025
- Field Conjugation Adaptive Arrays in Atmospheric Coherent Optical Links  
Aniceto Belmonte (Technical University of Catalonia UPC, Spain); Joseph Kahn (Stanford University, USA)  
pp. 1026-1030

## 11:00 AM - 12:40 PM

### Ubiquitous networks

- Context-aware Media Player (CaMP): Developing context-aware applications with Separation of Concerns  
Nearchos Paspallis (University of Cyprus, Cyprus); Achilleas Achilleos (University of Cyprus, Cyprus); Konstantinos Kakousis (University of Cyprus, Cyprus); George Papadopoulos (University of Cyprus, Cyprus)  
pp. 1684-1689
- Towards Congestion-Aware All-to-All Information Dissemination in Mobile Ad-Hoc Networks  
Albana Gaba (Vrije Universiteit Amsterdam, The Netherlands); Spyros Voulgaris (Vrije Universiteit, The Netherlands); Maarten van Steen (VU University Amsterdam, The Netherlands)  
pp. 1690-1695
- Interference Aware Multipath Routing Protocol for Wireless Sensor Networks  
Zijian Wang (Beihang University, P.R. China); Jun Zhang (Beihang University, Algeria)  
pp. 1696-1700
- A Measurement Allocation Scheme for Reliable Data Gathering in Spatially Correlated Sensor Networks  
Sang-Seon Byun (Norwegian University of Science and Technology, Norway); Ilango Balasingham (Norwegian University of Science & Technology, Norway)  
pp. 1701-1706
- Content Caching and Replication Schemes for Peer-to-Peer File Sharing in Wireless Mesh Networks  
Amr G M Al Asaad (The University of British Columbia, Canada); Sathish Gopalakrishnan (University of British Columbia, Canada); Victor CM Leung (The University of British Columbia, Canada)  
pp. 1707-1711

## 2:00 PM - 3:30 PM

## **Radio Resource Management in Wireless Networks**

### **A Coordinated Scheduling Strategy in Multi-Cell OFDM Systems**

Li Chen (Beijing University of Posts and Telecommunications, P.R. China); Lei Cao (Beijing University of Posts and Telecommunications, P.R. China); Xin Zhang (Beijing University of Posts and Telecommunications, P.R. China); Dacheng Yang (Beijing University of Posts and Telecommunications, P.R. China)  
pp. 1197-1201

### **Proportional Fair Scheduling with Probabilistic Interference Avoidance in the Uplink of Multicell OFDMA Systems**

Elias Yaacoub (Qatar University Wireless Innovations Center (QUWIC), Qatar); Zaher Dawy (American University of Beirut, Lebanon)  
pp. 1202-1206

### **Radio Resource Management for Churn Rate Control in Cellular Data Operators**

Francisco Rafael Marques Lima (Wireless Telecom Research Group (GTEL), Brazil); Francisco R. P. Cavalcanti (Federal University of Ceará, Brazil); Raimundo Abreu Neto (Federal University of Ceara, Brazil)  
pp. 1207-1211

### **Cross-Layer Resource Allocation for Downlink Access Using Instantaneous Fading and Queue Length Information**

Luis M. Lopez-Ramos (Universidad Rey Juan Carlos, Spain); Antonio G. Marques (Universidad Rey Juan Carlos, Spain); Antonio J. Caamaño (Rey Juan Carlos University of Madrid, Spain); F. Javier Ramos (Rey Juan Carlos University, Spain)  
pp. 1212-1216

### **Adaptive Resource Allocation and Dynamic Call Admission Control in Wireless Networks**

Georgios Tsiropoulos (Wireless and Satellite Communication Group, Greece); Dimitrios Stratogiannis (Wireless and Sattelite Communications Group, Greece); Thomas Lagkas (University of Western Macedonia, Kozani, Greece); Periklis Chatzimisios (Alexander TEI of Thessaloniki, Greece); Panayotis Cottis (National Technical University of Athens, Greece)  
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## **QoS Provision for Wireless Networks**

### **Robust Worst-Case Design for Optimizing Average Performance in OFDM using Quantized CSI**

Ana Belén Rodríguez-González (Rey Juan Carlos University, Spain); Luis M. Lopez-Ramos (Universidad Rey Juan Carlos, Spain); Antonio G. Marques (Universidad Rey Juan Carlos, Spain); F. Javier Ramos (Rey Juan Carlos University, Spain); Antonio J. Caamaño (Rey Juan Carlos University of Madrid, Spain)  
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### **Multi-objective Reliable Multipath Routing for Wireless Sensor Networks**

Hind Alwan (University, Canada); Anjali Agarwal (Concordia University, Canada)  
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### **DMQR: A Spatial Routing Protocol to Enable VoIP over High-Mobility Wireless Multihop Networks**

Amir Aminzadeh Gohari (University of California, Santa Barbara, USA); Volkan Rodoplu (University of California, Santa Barbara, USA)  
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### **Controlled Random Access with Multipacket Reception and Traffic Uncertainty**

Majid Ghanbarinejad (University of Alberta, Canada); Christian Schlegel (University of Alberta, Canada)  
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### **Towards a QoS-Aware IEEE 802.16 Downlink Sub-Frame Mapping Scheme**

Panagiotis Sarigiannidis (Aristotle University Thessaloniki, Greece); Malamati D Louta (University of Western Macedonia, Greece); Dimitrios Stratogiannis (Wireless and Sattelite Communications Group, Greece); Georgios Tsiropoulos (Wireless and Satellite Communication Group, Greece)  
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## **Propagation, Modeling and Physical Layer Security in Wireless Networks**



- Security Solution Suitability Analysis using Modified Multiplicative Analytic Hierarchy Process  
Zoltan Faigl (Budapest University of Technology and Economics, Hungary); Stefan Lindskog (Karlstad University, Sweden); Anna Brunstrom (Karlstad University, Sweden)  
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- Masked-OFDM: A Physical Layer Encryption for Future OFDM Applications  
Arsenia Chorti (Middlesex University, United Kingdom)  
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- Likelihood-Ratio Propagation and Consensus in Wireless Networks with Markov Random Field Models  
Federico Penna (Politecnico di Torino, Italy); Roberto Garello (Politecnico di Torino, Italy); Maurizio A. Spirito (ISMB, Italy)  
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- Indoor Mobility Modelling  
Raphael Ernst (University of Bonn, Germany); Nils Aschenbruck (University of Bonn, Germany); Peter Martini (University of Bonn, Germany)  
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## **Multimedia Service**

- Implementation and Optimization of Multimedia Framework on Heterogeneous Multi-core Platform  
Yu-Lin Wang (National Cheng Kung University, Taiwan); Sung-Yen Chang (National Cheng Kung University, Taiwan); Shih-Chieh Chen (Industrial Technology Research Institute, Taiwan); Yueh-Min Huang (National Cheng Kung University, Taiwan)  
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- Routing-aware Multiple Description Coding with Multipath Transport for Video Delivered over Mobile Ad-hoc Networks  
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- A Research of Resource Allocation Algorithm in Multi-media Heterogeneous Cognitive OFDM System  
Dawei Sun (Nanjing University of Posts and telecommunications, P.R. China); Baoyu Zheng (Nanjing University of Posts and Telecommunications, P.R. China); JingWu Cui (Nanjing University of Posts And Telecomm, P.R. China); Sulan Tang (Nanjing University of Posts and Telecommunications, P.R. China)  
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## **Multimedia Computing**

- A Scheduling Strategy for P2P-TV Systems using Scalable Video Coding  
Rossella Fortuna (Politecnico di Bari, Italy); Luigi Alfredo Grieco (Politecnico di Bari, Italy); Gennaro Boggia (Politecnico di Bari, Italy); Pietro Camarda (Politecnico di Bari, Italy)  
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- A New Joint Source and Channel Coding Scheme for Packet-based Scalable Multimedia Streams  
Chen Chi (Tsinghua University, P.R. China); Yu Zhang (Tsinghua University, P.R. China); Yaosheng Fu (Tsinghua University, P.R. China); Zhixing Yang (Tsinghua University, P.R. China)  
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- A Novel Combined Packet Scheduling and Call Admission Control for Video Streaming over WiMAX Network  
Wan Kim (POSTECH (Pohang University of Science and Technology), Korea); Hwangjun Song (POSTECH (Pohang University of Science and Technology), Korea)  
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## **2:00 PM - 3:00 PM**

### **Keynote speech 2**

Keynote 2: Self-Managing Future Internet, and a wake-up call to Standardization in Autonomic Computing,

Autonomic Networking and Self-Management  
Ranganai Chaparadza (Fraunhofer Fokus, Germany)

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### **Mobility in Multihop Wireless Networks**

A Multi-layer Approach for Seamless Soft Handoff in Mobile Ad Hoc Networks

Hui Zeng (Intelligent Automation, Inc., USA); Jason Hongjun Li (Intelligent Automation Inc., USA); Subir Das (Telcordia Technologies, USA); Anthony McAuley (Telcordia Technologies, USA); John Lee (Telcordia Technologies, Inc., USA); Thomas Stuhmann (Army CERDEC, USA); Mario Gerla (University of California at Los Angeles, USA)

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An IEEE 802.21-based Approach for Seamless Wireless Mobile Integration Using QoS-aware Paths supporting Unidirectional Links

Mathias Kretschmer (Fraunhofer FOKUS, Germany); Gheorghita Ghinea (Brunel University, United Kingdom)

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Redefining Link Duration: Making Routing Sensitive to Mobility

Namusale Chama (SITI, University Lusofona, Portugal); Rute C. Sofia (SITI, Universidade Lusófona, Portugal)

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On the Effects of Mobility for Efficient Broadcast Data Dissemination in I2V Networks

Stefano Busanelli (University of Parma, Italy); Gianluigi Ferrari (University of Parma, Italy); Vito Andrea Giorgio (University of Parma, Italy)

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Lightweight Security Solution for Host-Based Mobility & Multi-Homing Protocols

Georg Hampel (Bell Labs, Alcatel-Lucent, USA); Vladimir Kolesnikov (Bell Labs, USA)

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### **Trust Management**

Network Intrusion Detection Based on LDA for Payload Feature Selection

Zhiyuan Tan (University of Technology, Sydney, Australia); Aruna Jamdagni (University of Technology Sydney, Australia); Xiangjian He (University of Technology, Sydney, Australia); Priyadarsi Nanda (University of Technology, Sydney, Australia)

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Securing Vehicular Networks: A Reputation and Plausibility Checks-based Approach

Sanjay Dhurandher (NSIT, University of Delhi, India); Mohammad S. Obaidat (Monmouth University, USA); Amrit Jaiswal (University of Delhi, India); Ankur Tyagi (Eigen Technologies Private Limited, India); Akanksha Tiwari (University of Delhi, India)

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Accurate Signature Generation for Polymorphic Worms Using Principal Component Analysis

Mohssen Mohammed (University of Cape Town, South Africa); H Anthony Chan (Huawei Technologies, USA); Neco Ventura (University of Cape Town, South Africa)

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### **Security and Privacy**

Using Broadcast to Protect User Privacy in Location-based Applications

Fuyu Liu (University of Central Florida, USA); Georgiana Hamza-Lup (Florida Atlantic University, USA); Kien Hua (University of Central Florida, USA)

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Distributed First Stage Detection for Node Capture

Wei Ding (Austin Peay State University, USA); Yingbing Yu (Austin Peay State University, USA);

Sumanth Yenduri (University of Southern Mississippi, USA)

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A Security Enhanced Authentication and Key Distribution Protocol for Wireless Networks

Chao Lv (Xidian University, P.R. China); Maode Ma (Nanyang Technological University, Singapore); Hui Li (Xidian University, P.R. China); Jianfeng Ma (Xidian University, P.R. China)

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Autonomous DNSSEC: Secured Pseudo DNS Domains for Personal Networks

Ayumu Kubota (KDDI R&D Laboratories Inc., Japan); Yutaka Miyake (KDDI R&D Laboratories Inc., Japan)

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### **Advanced Sensor Integration Technology 03**

An Evolutionary Approach for Non-Uniform Coverage Control in Wireless Sensor Networks

Nejla Essaddi (Carthage University, Tunisia); Mohamed Hamdi (Carthage University, Tunisia);

Noureddine A. Boudriga (University of Carthage, Tunisia); Sami Habib (Kuwait University, Kuwait)

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Compressed Sensing for Efficient Random Routing in Multi-hop Wireless Sensor Networks

Xiao Wang (Zhejiang University, P.R. China); Zhifeng Zhao (Zhejiang University, P.R. China); Yu Xia (Zhejiang University, P.R. China); Honggang Zhang (Zhejiang University, P.R. China)

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The Scheme of Mitigating the Asymmetric Links Problem in Wireless Sensor Networks

Yuanfang Chen (Dalian University of Technology, P.R. China); Mingchu Li (Dalian University of Technology, Canada); Lei Shu (Osaka University, Japan); Lei Wang (Dalian University of Technology, P.R. China); Trung Q. Duong (Blekinge Institute of Technology, Sweden)

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### **Complex & Communication Networks 3**

Simulated Annealing based Weight Assignment Scheme for Load Balanced Fast IP Local Failure Recovery

Po-Kai Tseng (Academia Sinica, Taiwan); Wei-Ho Chung (Academia Sinica, Taiwan)

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Population Distribution Effects in Backbone Network Cost

Dimitris Maniatakis (University of Athens, Greece); Dimitris Varoutas (University of Athens, Greece)

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Stochastic Approximate Dynamic Programming with Link Estimation for High Quality Path Selection in Wireless Mesh Networks

Talmay B Oliveira (University of Cincinnati, USA); Dharma P Agrawal (University of Cincinnati, USA)

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Hospital: Host and Network System Profiler and Internet Traffic Analyzer

Esam A Sharafuddin (University of Minnesota, USA); Nan Jiang (University of Minnesota, USA); Yu Jin (University of Minnesota, USA); Zhi-Li Zhang (University of Minnesota, USA)

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### **Green Routing**

Energy-Aware Routing: a Reality Check

Dario Rossi (TELECOM ParisTech, France); Aruna Prem Bianzino (Telecom ParisTech (École nationale supérieure des télécommunications), France); Jean-Louis Rougier (TELECOM ParisTech, France);

Claude Chaudet (Telecom Paristech, France); Federico Larroca (Universidad de la República, Uruguay)

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Power-aware Routing with Rate-adaptive Network Elements

Spyridon Antonakopoulos (Bell Labs, Alcatel-Lucent, USA); Steven Fortune (Bell Laboratories, Alcatel-Lucent, USA); Lisa Zhang (Bell Labs, Lucent Technologies, USA)

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A Sensor Network to Profile the Electrical Power Consumption of Computer Networks

Ricardo Lent (Imperial College London, United Kingdom)

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Dynamic Transmission Capacity Control Schemes for Power Saving using a Mixture of the History and the Latest Information

Yutaka Fukuda (Kyushu Institute of Technology, Japan); Takeshi Ikenaga (Kyushu Institute of Technology, Japan); Yuji Oie (Kyushu Institute of Technology, Japan)

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Reduced dimensional power optimization using class AB and G line drivers in DSL

Mamoun Guenach (Bell Laboratories, Alcatel-Lucent, Antwerp, Belgium); Carl Nuzman (Bell Labs, Alcatel-Lucent, USA); Koen Hooghe (Bell Labs, Alcatel-Lucent, Belgium); Jochen Maes (Alcatel-Lucent, Belgium); Michael Peeters (Alcatel-Lucent, Belgium)

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## **Routing and Related Issues**

RAIDER: Responsive Architecture for Inter-Domain Economics and Routing

Nirmala Shenoy (University of Rochester, USA); Murat Yuksel (University of Nevada - Reno, USA);

Aparna Gupta (Rensselaer Polytechnic Institute, USA); Koushik Kar (Rensselaer Polytechnic Institute, USA); Victor Perotti (Rochester Institute of Technology, USA); Manish Karir (Merit Network Inc., USA)

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Value Flows: Inter-Domain Routing over Contract Links

Hasan T Karaoglu (University of Nevada - Reno, USA); Murat Yuksel (University of Nevada - Reno, USA)

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Multicast Forwarding Plane in Future Networks: Source Routing Has a Competitive Edge

Takeru Inoue (NTT Network Innovation Laboratories, Japan); Yohei Katayama (NTT Network Innovation Laboratories, Japan); Hiroshi Sato (NTT, Japan); Takahiro Yamazaki (NTT Network Innovation Laboratories, Japan); Noriyuki Takahashi (NTT, Japan)

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NPLA: Network Prefix Level Authentication

Ming Li (Helsinki University of Technology, Finland); Yong Cui (Tsinghua University, P.R. China); Matti Siekkinen (Aalto University, Finland); Antti Ylä-Jääski (Helsinki University of Technology, Finland)

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## **System Performance I**

Low-Complexity Blind Timing Synchronization for ACO-OFDM-Based Optical Wireless Communications

Martino Freda (Interdigital, Canada); Joseph Murray (InterDigital, Inc., USA)

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Wireless Ultraviolet Network Models and Performance in Noncoplanar Geometry

Leijie Wang (University of California, Riverside, USA); Yiyang Li (University of California, Riverside, USA); Zhengyuan Xu (University of California, Riverside, USA); Brian Sadler (Army Research Laboratory, USA)

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Visible-light communication system enabling 73 Mb/s data streaming

Olivier Bouchet (France Télécom, Orange Labs, France); Mike Wolf (Ilmenau University of Technology, Germany); Thomas Kamalakis (University of Athens, Greece); Klaus-Dieter Langer (Heinrich-Hertz-Institut, Germany); Stefan Nerreter (Siemens AG, Germany); Joachim W. Walewski (Siemens Corporate Technology, Germany); Liane Grobe (Ilmenau University of Technology, Germany); Pascal Porcon (France Télécom, Orange Labs, France); Georgia Ntogari (National Kapodistrian University of Athens, Greece); Luz Fernández (Fraunhofer HHI, Germany); Eric Gueutier (Apside, France); Jelena Vucic (Fraunhofer Heinrich-Hertz Institut, Germany)

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High data-rate infra-red optical wireless communications: implementation challenges

Dominic O'Brien (Oxford University, United Kingdom); Hoa Le Minh (Northumbria University, United

Kingdom); Grahame Faulkner (University of Oxford, United Kingdom); Mike Wolf (Ilmenau University of Technology, Germany); Liane Grobe (Ilmenau University of Technology, Germany); Jianhui Li (Ilmenau University of Technology, Germany); Olivier Bouchet (France Télécom, Orange Labs, France)  
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Demonstration of high-speed data transmission using MIMO-OFDM visible light communications  
Ahmad Helmi Azhar (University of Oxford, United Kingdom); Tuan-Anh Tran (University of Oxford, United Kingdom); Dominic O'Brien (Oxford University, United Kingdom)  
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### **Ubiquitous networks (3)**

A model for the design of Wireless Sensor Networks using Geographic Routing  
Anna Lina Ruscilli (Scuola Superiore Sant'Anna, Italy); Gabriele Cecchetti (Scuola Superiore S. Anna, Pisa, Italy); Sathish Gopalakrishnan (University of British Columbia, Canada); Giuseppe Lipari (Scuola Superiore S. Anna, Italy)  
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Inter-Mobility Support in Controlled 6LoWPAN Networks  
Zinon Zinonos (University of Cyprus, Cyprus); Vasos Vassiliou (University of Cyprus, Cyprus)  
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Vertical Handoff Algorithms - A New Approach for Performance Evaluation  
Alexander Garcia Davalos (Universidad Autonoma de Occidente, Colombia); Andres Navarro (Universidad Icesi, Colombia); Fabio Guerrero (Universidad del Valle, Colombia)  
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ESAP: Efficient and Scalable Authentication Protocol with Conditional Privacy for Secure Vehicular Communications  
Hesiri Weerasinghe (Oakland University, USA); Huirong Fu (Oakland University, USA)  
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### **Ubiquitous computing (4)**

Bridging communications and the physical world: Sense Everything, Control Everything  
Omer Boyaci (Columbia University, USA); Victoria Beltran (Technical University of Catalonia (UPC), Spain); Henning Schulzrinne (Columbia University, USA)  
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Box-Cox transformation as an alternative method for modeling video-on-demand popularity  
María Teresa González Aparicio (University of Oviedo, Spain); Roberto Garcia (University of Oviedo, Spain); Xabiel García Pañeda (University of Oviedo, Spain); David Melendi (University of Oviedo, Spain); Sergio Cabrero (University of Oviedo, Spain)  
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A Novel IP Routing/Signaling Based Service Provisioning Concept for Ubiquitous Grid Networking Environment  
Daisuke Ishii (Keio University, Japan); Kenta Nakahara (Keio University, Japan); Satoru Okamoto (Keio University, Japan); Naoaki Yamanaka (Keio University, Japan)  
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Relationship Analysis between User's Contexts and Real Input Words through Twitter  
Yutaka Arakawa (Kyushu University, Japan); Shigeaki Tagashira (Kyushu University, Japan); Akira Fukuda (Kyushu University, Japan)  
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### **Management of Converged Fixed/Wired, Grids, Cloud Computing, and Content Delivery Networks (A)**

#### A Novel Autonomic Architecture for QoS Management in Wired Network

Haiyan Zhang (Beijing University of Posts and Telecommunications, P.R. China); Mincheng Zhao (Beijing University of Posts and Telecommunications, P.R. China); Wang Wendong (National Key Lab of Switching and Networking, Beijing University of Posts and Telecommunications, P.R. China); Gong Xiangyang (Beijing University of Posts and Telecommunications P.R. China, P.R. China); Xirong Que (Institute of Networking Technology, P.R. China)

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#### Prediction of Performance Degradation in Telecommunication Networks Using Joint Clustering and Association Analysis

Ala I Al-Fuqaha (Western Michigan University, USA); Ammar Rayes (Cisco / San Jose State University, USA)

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### **Management of Wireless/Heterogeneous Wireless Networks (A)**

#### Pricing for QoS-Based Wireless Data Services and its Impact on Radio Resource Management

Patrick Hosein (Wireless Consultant, USA)

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#### Autonomic Mobility and Resource Management Over an Integrated Wireless Environment - A GANA Oriented Architecture

Giorgos Aristomenopoulos (National Technical University of Athens / Institute of Com. and Computer Syst., Greece); Timotheos Kastrinogiannis (National Technical University of Athens, Greece); Zhaojun Li (Fujitsu Laboratories of Europe, United Kingdom); Mick Wilson (Fujitsu Lab. of Europe, United Kingdom); Juan Manuel González (Telefónica Investigación y Desarrollo, Spain); José Antonio Lozano-López (Telefónica I+D, Spain); Yuhong Li (Beijing University of Posts and Telecommunications, P.R. China); Vassilios Kaldanis (ICCS/NTUA, Technical University of Athens, Greece); Symeon Papavassiliou (Institute of Comm. and Comp. Systems/National Technical University of Athens, Greece)

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### **Management Frameworks and Paradigms, and Network Evolution Towards Self-Managing Future Multi-Service Networks (A)**

#### The Self-Managing Future Internet powered by the current IPv6 and Extensions to IPv6 towards "IPv6++"—a viable Roadmap Scenario for the Internet Evolution Path

Ranganai Chaparadza (Fraunhofer Fokus, Germany); Symeon Papavassiliou (Institute of Comm. and Comp. Systems/National Technical University of Athens, Greece); Said Soulhi (Ericsson, Sweden); Jianguo Ding (University of Luxembourg, Luxembourg)

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#### Reducing Excess Processes of Router Control Requests in OSS for Managing Large-scale IP Network

Kosuke Sakata (NTT, Japan); Tatsuyuki Kimura (Nippon Telegraph and Telephone Co., Japan); Yoshihiro Otsuka (NTT, Japan)

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### **Energy Analysis and Power Management in Wireless Networks**

#### An Energy Analysis of IEEE 802.15.6 Scheduled Access Modes

Christos Tachtatzis (WiSAR Lab - Letterkennt Institute of Technology, Ireland); Fabio Di Franco (LYIT,

Ireland); David Tracey (WiSAR Lab - Letterkenny Institute of Technology, Ireland); Nick Francis Timmons (Letterkenny Institute of Technology, Ireland); Jim Morrison (WiSAR Lab - Letterkenny Institute of Technology, Ireland)

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Energy and throughput efficiency in wireless multihop networks

Dimitrios D. Vergados (University of Piraeus, Greece); Angeliki Sgora (University of Piraeus, Greece); Dimitrios J. Vergados (National Technical University of Athens, Greece)

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Local Information-Based Power Management in a Delay Tolerant Network

Clement Kam (University of California--San Diego, USA); Curt Schurgers (Earth, USA)

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A Traffic-adaptive MAC Protocol for WBAN

Kyung Sup Kwak (Inha University, Korea); Sana Ullah (Inha University, Korea)

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## **Multimedia Traffic and Network**

Cross-layer Link Rate Adaptation for High Performance Multimedia Broadcast over WLANs

Chen Xi (Tsinghua University, P.R. China); Wan YunHeng (Tsinghua University, P.R. China); Jianhua Lu (Tsinghua University, P.R. China)

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Bandwidth Allocation for Best Effort Traffic to Achieve 100% Throughput

Masoumeh Karimi (Technological University of America (TUA), USA); Zhuo Sun (Florida International University, USA); Deng Pan (Florida International University, USA)

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On the Dependence of Burst Losses on the Packet Inter-Arrival Times in VoIP

Murali Krishna Kadiyala (Wichita State University, USA); Ravi Pendse (Wichita State University, USA); Kamesh Namuduri (University of North Texas, USA)

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## **Management of Converged Fixed/Wired, Grids, Cloud Computing, and Content Delivery Networks (B)**

Grid Appliance -- On the Design of Self-Organizing, Decentralized Grids

David I Wolinsky (University of Florida, USA); Arjun Prakash (University of Florida, USA); Renato Figueiredo (University of Florida, USA)

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User-level Virtual Networking Mechanisms to Support Virtual Machine Migration Over Multiple Clouds

Mauricio Tsugawa (University of Florida, USA); Pierre Riteau (Université de Rennes 1, France); Andrea Matsunaga (University of Florida, USA); Jose Fortes (University of Florida, USA)

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Networked Cloud Orchestration: A GENI Perspective

Iliia Baldine (RENCI (Renaissance Computing Institute), USA); Jeff Chase (Duke University, USA); Yufeng Xin (Renaissance Computing Institute (RENCI), USA); David Irwin (University of Massachusetts, Amherst, USA); Varun Marupadi (Duke University, USA); Anirban Mandal (Renaissance Computing Institute (RENCI), USA); Chris Heermann (Renaissance Computing Institute, UNC-CH, USA); Aydan Yumerefendi (Duke University, USA)

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Distributed Management for Load Balancing in Content Delivery Networks

Sabato Manfredi (University of Naples, Italy); Francesco Oliviero (Federico II University of Napoli, Italy); Simon Pietro Romano (University of Napoli Federico II, Italy)

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In-packet Bloom filter based data center networking with distributed OpenFlow controllers

Carlos Alberto Bráz Macapuna (State University of Campinas, Brazil); Christian Esteve Rothenberg (University of Campinas, Brazil); Maurício Ferreira Magalhães (State University of Campinas, Brazil)

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## **Management of Wireless/Heterogeneous Wireless Networks (B)**

### Configuration Management for DTNs

Robert G Cole (US Army CERDEC, USA); Amitabh Mishra (Johns Hopkins University, USA); Sachin Kumar (Johns Hopkins University, USA)  
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### A Platform for Realistic Online Vehicular Network Management

Yoann Pigné (University of Luxembourg, Luxembourg); Grégoire Danoy (University of Luxembourg, Luxembourg); Pascal Bouvry (University of Luxembourg, Luxembourg)  
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### On Utility-Based Network Management

Elena Meshkova (RWTH Aachen University, Germany); Janne Riihijärvi (RWTH Aachen University, Germany); Andreas Achtzehn (RWTH Aachen University, Germany); Petri Mähönen (RWTH Aachen University, Germany)  
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### QoS-Guaranteed Admission Control for OFDMA-based Systems

M. V. Ramkumar (Aalborg University, Denmark); Bayu Anggorojati (Aalborg Universitet, Denmark); Andrei Lucian Stefan (Aalborg University, Denmark); Neeli Rashmi Prasad (Center for TeleInfrastructure (CTIF), Denmark); Ramjee Prasad (Center for TeleInfrastruktur (CTiF), Aalborg University, Denmark)  
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### Joint Call Admission Control Algorithm for Reducing Call Blocking/dropping Probability in Heterogeneous Wireless Networks Supporting Multihoming

Olabisi Emmanuel Falowo (University of Cape Town, South Africa)  
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## **Management Frameworks and Paradigms, and Network Evolution Towards Self-Managing Future Multi-Service Networks (B)**

### A Trust Management Architecture for Autonomic Future Internet

Vassilis Merikoulias (Institute of Comm. and Comp. Systems / National Technical University of Athens, Greece); Vassiliki Pouli (Institute of Comm. and Comp. Systems / National Technical University of Athens, Greece); Yacine Rebahi (Fraunhofer Institut Fokus, Berlin, Germany); Sheila Becker (University Luxembourg, Luxembourg); Krzysztof Cabaj (Warsaw University of Technology, Poland); Giorgos Aristomenopoulos (National Technical University of Athens / Institute of Com. and Computer Syst., Greece); Symeon Papavassiliou (Institute of Comm. and Comp. Systems/National Technical University of Athens, Greece)  
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### Autonomicity in Virtual Private Network Provisioning for Enterprises

András Zahemszky (Ericsson Research, Finland); Petri Jokela (Ericsson, Finland); Tony Jokikyyny (Ericsson, Finland)  
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### SLA Based Business-Driven Adaptive QoS Maintenance Mechanism for Multi-tier Service in Virtualized IT Environment

Fei Gao (Beijing University of Posts & Telecommunications, P.R. China); Qiu Xue-song (Beijing University of Posts and Telecommunications, P.R. China); Luoming Meng (Beijing University of Posts and Telecommunications, P.R. China)  
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### Design and Implementation of Real-Time Communication Components based Open Multimedia Conferencing Web Service over Converged Networks

Bo Cheng (Beijing University of Posts & Telecommunications, P.R. China); Shicheng Zhang (Beijing University of Posts & Telecommunications, P.R. China); Xiaoxiao Hu (Beijing University of Posts & Telecommunications, P.R. China); Junliang Chen (Beijing University of Posts & Telecommunications, P.R. China)  
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### Enabling autonomicity in the future networks

Csaba Simon (Budapest University of Technology and Economics, Hungary); Ranganai Chaparadza (Fraunhofer Fokus, Germany); Peter Benko (Ericsson Research, Hungary); Domonkos Asztalos (Ericsson.Hungary Ltd, Hungary); Vassilios Kaldanis (ICCS/NTUA, Technical University of Athens, Greece)

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### Managing Internet Protocol Routing for Low Power Lossy Networks

James Pope (George Mason University, USA); Robert Simon (George Mason University, USA)

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## Mobility Effects

### Dynamic Tracking Area List Configuration and Performance Evaluation in LTE

Sara Modarres Razavi (Linköping University, Sweden); Di Yuan (Linköping University, Sweden); Fredrik Gunnarsson (Ericsson Research, Sweden); Johan Moe (Ericsson Research, Sweden)

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### Scalable Certificate Revocation List Distribution in Vehicular Ad Hoc Networks

Michael Nowatkowski (United States Military Academy at West Point, USA); Henry Owen (Georgia Institute of Technology, USA)

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### Cluster-Based Time-Domain Channel Prediction for Dynamic Wireless Communications

Viet-Ha Pham (The University of Western Ontario, Canada); Xianbin Wang (University of Western Ontario, Canada); Jay Nadeau (The University of Western Ontario, Canada); Jean-Yves Chouinard (Laval University, Canada)

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### Cell Searching and DoA Estimation Methods for OFDM-based Mobile Relay Stations with a ULA

Yo Han Ko (Chung-Ang University, Korea); Chang Hwan Park (Chung-Ang University, Korea); Won Young Yang (Chung-Ang University, Korea); Yong Soo Cho (Chung-Ang University, Korea)

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### Quantization Scheme for Energy Detector of Soft Decision Cooperative Spectrum Sensing in Cognitive Radio

Yuuki Tani (Chiba Institute of Technology, Japan); Takahiko Saba (Chiba Institute of Technology, Japan)

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## Web and Pervasive Technologies

### Anonymous Web Browsing through Predicted Pages

Shui Yu (Deakin University, Australia); Theerasak Thapngam (Deakin University, Australia); Hou In Tse (Deakin University, Australia); Jilong Wang (Tsinghua University, P.R. China)

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