The 15th International Symposium on Wireless Personal Multimedia Communications

(WPMC 2012)

Taipei, Taiwan
24-27 September 2012
Monday, September 24

08:50 - 10:20

**T1-1: Tutorial 1**
Small Cells Standardization in LTE Advanced
Room: 2F Convention Hall
Chair: Hsuan-Jung Su (National Taiwan University, Taiwan)

**WS1-1: WWSMC**
Room: 14F Conference Room

10:20 - 10:40

**B1: Coffee Break**

10:40 - 12:10

**T1-2: Tutorial 1**
Small Cells Standardization in LTE Advanced
Room: 2F Convention Hall
Chair: Hsuan-Jung Su (National Taiwan University, Taiwan)

**WS1-2: WWSMC**
Room: 14F Conference Room

12:10 - 13:20

**L1: Lunch**
Room: 1F Garden Cafeteria

13:20 - 14:50

**T2-1: Tutorial 2**
Perpetual Wireless Video Camera for Internet-of-Things
Room: 2F Convention Hall
Chair: Hsuan-Jung Su (National Taiwan University, Taiwan)

**WS1-3: WWSMC**
Room: 14F Conference Room
The 15th International Symposium on Wireless Personal Multimedia Communications

14:50 - 15:10

B2: Coffee Break

15:10 - 16:40

T2-2: Tutorial 2
Perpetual Wireless Video Camera for Internet-of-Things
Room: 2F Convention Hall
Chair: Hsuan-Jung Su (National Taiwan University, Taiwan)

WS1-4: WWSMC
Room: 14F Conference Room
Tuesday, September 25

08:50 - 10:20

**O1: Opening**
Room: 2F Convention Hall
Chair: Kwang-Cheng Chen (National Taiwan University, Taiwan)

Privacy - Utility Tradeoffs in Smart Grid Communications
H. Vincent Poor (Princeton University, USA)

10:20 - 10:40

**B3: Coffee Break**

10:40 - 11:25

**K1: Keynote Speech 1**
Room: 2F Convention Hall
Chair: Nen-Fu Huang (National Tsing Hua University, Taiwan)

The Dawn of a New Era in Warfare - Cyber Warfare - Threats, Challenges & State of the Art
Parag Pruthi (CEO and Founder of NIKSUN, USA)

11:25 - 12:10

**K2: Keynote Speech 2**
Room: 2F Convention Hall
Chair: Nen-Fu Huang (National Tsing Hua University, Taiwan)

A Look into the Future of Wireless Communications
Khaled B. Letaief (The Hong Kong University of Science and Technology, Hong Kong)

12:10 - 13:20

**L2: Lunch**
Room: 1F Garden Cafeteria
13:20 - 14:50

**AS1: Applications and Service 1**
Experimental Trials and Development
Room: R202
Chair: Tai-Lin Chin (National Taiwan University of Science and Technology, Taiwan)

**13:20 Traffic Engineering for Power Efficient Smartphone Communications**
Chang-Hung Hsieh (National Taiwan University, Taiwan); Yu-Yu Chen (National Taiwan University, Taiwan); Chih-Chieh Yang (National Taiwan University, Taiwan); Shih-Lung Chao (National Taiwan University, Taiwan); Hung-Yu Wei (National Taiwan University, Taiwan)

**13:38 Interference Evaluation of Terrestrial Mobile Terminals and Base Stations Using an Aircraft for Sharing Satellite and Terrestrial Mobile Communication System**
Hiroyuki Tsuji (NICT, Japan); Yoshiyuki Fujino (National Institute of Information and Communications Technology, Japan)

**13:56 Requirements on Naming Schemes Design for Future Wireless Internet**
Nahla Abid (Orange Labs, France); Philippe Bertin (Orange Labs, France); Jean-Marie Bonnin (Institut Mines Telecom / Telecom Bretagne & IRISA, France)

**14:14 Online Dictionary Learning Based Intra-Frame Video Coding Via Sparse Representation**
Yipeng Sun (Tsinghua University, P.R. China); Mai Xu (Tsinghua University, P.R. China); Xiaoming Tao (Tsinghua University, P.R. China); Jianhua Lu (Tsinghua University, P.R. China)

**IV1: Invited 1**
Disaster-Resilient Networks (1)
Room: 2F Convention Hall
Chair: Vishwanath Sinha (The LNM Institute of Information Technology Jaipur, India)

**13:20 Crowdsourcing Support System for Disaster Surveillance and Response**
Edward T.-H. Chu, Prof. (National Yunlin University of Science and Technology, Taiwan); Yi-Lung Chen (National Yunlin University of Science and Technology, Taiwan); Jyun-You Lin (National Yunlin University of Science and Technology, Taiwan); Jane Win-Shih Liu (Institute of Information Science, Academia Sinica, Taiwan)
13:38 Disaster-Tolerant Dependable Wireless Network  26
Ryu Miura (NICT, Japan); Masugi Inoue (National Institute of Information and Communications Technology, Japan); Yasunori Owada (National Institute of Information and Communications Technology, Japan); Hiroyuki Tsuji (NICT, Japan); Shinsuke Hara (Osaka City University, Japan)

13:56 Multi-AP Cooperative Diversity for Disaster-resilient Wireless LAN  27
Fumiyuki Adachi (Tohoku University, Japan); Shinya Kumagai (Tohoku University, Japan)

14:14 Controlling Networks with an Intelligent Power System  29
Hirohito Yamada (Tohoku University, Japan)

14:32 57-66GHz Wireless PAN Systems N/A
Masashi Nakagawa (Ministry of Internal Affairs and Communications, Japan)

WC1: Wireless Communications 1
Cognitive Radios (1)
Room: R201
Chair: Pin-Hsun Lin (National Taiwan University, Taiwan)

13:20 A Study on Channel Prediction for Dynamic Spectrum Control Aided Spectrum Sharing  30
Quang Thang Duong (Osaka University, Japan); Shinsuke Ibi (Osaka University, Japan); Seiichi Sampei (Osaka University, Japan)

13:38 Degree of Polarization Spectrum Sensing Algorithm for Cognitive Radios  35
Lin Lin (Beijing University of Posts and Telecommunications, P.R. China); Caili Guo (Beijing University of Posts and Telecommunications, P.R. China); Feng Chunyan (Beijing University of Posts and Telecommunications, P.R. China); Xiaobin Wu (Beijing University of Posts and Telecommunications, P.R. China)

13:56 A Novel Interference Avoidance Scheme Based on Blind Polarization Signal Processing for Cognitive Femtocell Network  40
Xiaolin Lin (Beijing University of Posts and Telecommunications, P.R. China); Caili Guo (Beijing University of Posts and Telecommunications, P.R. China); Zhimin Zeng (Beijing University of Posts and Telecommunications, P.R. China); Dongming Li (Beijing University of Posts and Telecommunications, P.R. China)
14:14 An Alternative Implementation of a Cyclostationary Detector  45
Francisco Paisana (Instituto Superior Técnico & Aalborg Universitet, Denmark); Neeli Rashmi Prasad (Center for TeleInfrastructure (CTIF), Denmark); António J. Rodrigues (IT / Instituto Superior Técnico, Portugal); Ramjee Prasad (Aalborg University, Denmark)

14:32 An Enhanced Feature Detection Method for DTV Signals  50
Chunyi Song (National Institute of Information and Communications Technology, Japan); Hiroshi Harada (National Institute of Information & Communications Technology (NICT), Japan)

WN1: Wireless Networks 1
VANET
Room: R203
Chair: Chun-Cheng Lin (National Chiao Tung University, Taiwan)

13:20 An Adaptive and Reliable MAC Mechanism for IEEE 1609.4 and 802.11p VANETs  55
Guo Jinjie (Beijing University of Posts and Telecommunications, P.R. China); Huo Yiding (Beijing University of Posts and Telecommunications, P.R. China); Hu Chang (Beijing University of Posts and Telecommunications, P.R. China); Liang Tianning (Beijing University of Posts and Telecommunications, P.R. China); Yu Liu (Beijing University of Posts and Telecommunications, P.R. China); Lin Zhang (Beijing University of Posts and Telecommunications, P.R. China)

13:38 Network Coded File Sharing in Vehicular Ad-Hoc Networks  60
Tai-Lin Chin (National Taiwan University of Science and Technology, Taiwan); Yeong-Sheng Chen (National Taipei University of Education, Taiwan); Hsing-Chang Du (National Taiwan University of Science and Technology, Taiwan); Yu-Shan Li (National Taiwan University of Science and Technology, Taiwan); Wan-Chen Chuang (National Taiwan University of Science and Technology, Taiwan)

13:56 Information Sharing Service in VANETs with Enhanced Two-Tier P2P Communications  65
Guo Jinjie (Beijing University of Posts and Telecommunications, P.R. China); Hu Chang (Beijing University of Posts and Telecommunications, P.R. China); Huo Yiding (Beijing University of Posts and Telecommunications, P.R. China); Yu Liu (Beijing University of Posts and Telecommunications, P.R. China); Lin Zhang (Beijing University of Posts and Telecommunications, P.R. China)
14:14 Affinity Propagation with File Similarity Based Clustering for P2P File Sharing in VANET
Hung-Chin Jang (National Chengchi University, Taiwan); Li-Ji Tzeng (National Chengchi University, Taiwan)

14:50 - 15:10
B4: Coffee Break

15:10 - 16:40
P1: Panel Session 1
Reunion for the birth of cognitive radio
Room: 2F Convention Hall
Chair: Kwang-Cheng Chen (National Taiwan University, Taiwan)

IV2: Invited 2
M2M and D2D Communications
Room: R203
Chair: Tony Q. S. Quek (Singapore University of Technology and Design (SUTD) & Institute for Infocomm Research, Singapore)

15:10 Intelligent Resource Management for Device-to-Device (D2D) Communications in Heterogeneous Networks
Ang-Hsun Tsai (National Chiao Tung University, Taiwan); Li-Chun Wang (National Chiao Tung University, Taiwan); Jane-Hwa Huang (National Chi Nan University, Taiwan); Tzu-Ming Lin (ITRI, Taiwan)

15:28 Exploiting Spatial Reuse Gain Through Joint Mode Selection and Resource Allocation for Underlay Device-to-Device Communications
Hung-Yun Hsieh (National Taiwan University, Taiwan); Cheng-Pang Chien (National Taiwan University, Taiwan); Yu-Chung Chen (National Taiwan University, Taiwan)

15:46 Device-to-Device Assisted Downlink Broadcast Channel in Cellular Networks
Chun-Che Chien (National Taiwan University, Taiwan); Hsuan-Jung Su (National Taiwan University, Taiwan); Hsueh-Jyh Li (National Taiwan University, Taiwan)
16:04 **Opportunistic Routing with Adaptive Harvesting-aware Duty Cycling in Energy Harvesting WSN**  90
Sanam Shirazi Beheshtiha (Amirkabir University of Technology, Iran); Hwee Pink Tan (Institute for Infocomm Research, Singapore); Masoud Sabaei (Amirkabir University of Technology, Iran)

16:22 **Effect of Data Aggregation in M2M Networks**  95
Shin-Yeh Tsai (National Cheng Kung University, Taiwan); Sok-Ian Sou (National Cheng Kung University, Taiwan); Meng-Hsun Tsai (National Cheng Kung University, Taiwan)

16:40 **Machine-to-Machine Communications as a New Revenue Source of Network Operators**  100
Hiroshi Saito (NTT & NTT Service Integration Laboratories, Japan)

**SSR1: Systems, Standards, and Regulations 1**
International Standards
Room: R202
Chair: Ai-Chun Pang (National Taiwan University, Taiwan)

15:10 **Rural, Poor and Catastrophic ICT Area Standardization and Modeling**  103
Dipashree Bhalerao (Aalborg University, India); M. Tahir Riaz (Aalborg University, Denmark); Ole B Madsen (Aalborg University, Denmark); Ramjee Prasad (Aalborg University, Denmark)

15:28 **A New Standard Activity in IEEE 802.22 Wireless Regional Area Networks: Enhancement for Broadband Services and Monitoring Applications in TV Whitespace**  108
Chang-Woo Pyo (NICT, Japan); Xin Zhang (National Institute of Information and Communication Technology, Singapore); Chunjyi Song (National Institute of Information and Communications Technology, Japan); Ming-Tuo Zhou (National Institute of Information and Communications Technology, Singapore); Hiroshi Harada (National Institute of Information & Communications Technology (NICT), Japan)

15:46 **Chirp Pulse Compression in Non-Coherent Impulse-Radio Ultra-Wideband Detection Without Waveform Signature Estimation**  113
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Kentaro Ishizu (National Institute of Information and Communications Technology, Japan); Homare Murakami (National Institute of Information and Communications Technology, Japan); Hiroshi Harada (National Institute of Information & Communications Technology (NICT), Japan)

16:22 Prototype of UHF Converter for TV White-space Utilization  123
Takeshi Matsumura (National Institute of Information and Communications Technology (NICT), Japan); Hiroshi Harada (National Institute of Information & Communications Technology (NICT), Japan)

WC2: Wireless Communications 2
Cognitive Radios (2)
Room: R201
Chair: Ping-Cheng Yeh (National Taiwan University, Taiwan)

15:10 Stochastic Duty Cycle Model Based on Measurement for Cognitive Radio  128
Kishor Patil (Aalborg University, Denmark); Knud Erik Skouby (Aalborg University, Denmark); Ramjee Prasad (Aalborg University, Denmark)

15:28 Outage Probability of Cognitive Relay Network with Transmit Power and Interference Constraints  133
Tao Yi (Beijing University of Posts and Telecommunications, P.R. China); Li Guo (Beijing University of Posts and Telecommunications, P.R. China); Jiaru Lin (Beijing University of Posts and Telecommunications, P.R. China)

Aravind Kailas (University of North Carolina at Charlotte, USA); Nadine Pari (Federal University of Parana, Brazil); Michele Nogueira (Federal University of Parana, Brazil)

16:04 M-GCF: Multicolor-Green Conflict Free Scheduling Algorithm for WSN  143
Pranav Pawar (University of Aalborg, India); Rasmus Hjorth Nielsen (Aalborg University & Center for TeleInfrastruktur, Denmark); Neeli Rashmi Prasad (Center for TeleInfrastructure (CTIF), Denmark); Shingo Ohmori (CTIF-Japan, Aalborg University & YRP International Alliance Institute, Japan); Ramjee Prasad (Aalborg University, Denmark)
An Opportunistic Network Coding Cooperative Scheme for Wireless Uplink Multi-Relay Cooperative Networks

Weiyan Geng (Beijing University of Posts and Telecommunications, P.R. China); Tiejun Lv (Beijing University of Posts and Telecommunications, P.R. China)

18:30 - 21:00

W1: Welcome Reception
Room: 14F Conference Room
Wednesday, September 26

08:50 - 10:20

IV3: Invited 3
Advanced Communication Technologies
Room: R203
Chair: Chun-Ting Chou (National Taiwan University, Taiwan)

08:50 Development of a Self-Sustainable Autonomous Environmental Monitoring System 153
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08:50 - 09:35

K3: Keynote Speech 3
Room: 2F Convention Hall
Chair: Hsuan-Jung Su (National Taiwan University, Taiwan)
Spectrum sensing under uncertain channel modeling
Ezio Biglieri (UCLA, USA)

09:35 - 10:20

K4: Keynote Speech 4
Room: 2F Convention Hall
Chair: Hsuan-Jung Su (National Taiwan University, Taiwan)
A Geometric Method for Networks and More
Lizhong Zheng (MIT, USA)

10:20 - 10:40

B5: Coffee Break

10:40 - 12:10

IV4: Invited 4
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Room: R203
Chair: Chun-Ting Chou (National Taiwan University, Taiwan)

10:40 A Trust and Distrust Mechanism for a Social Network-based Recommendation System 172
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10:58 Authentication Using Graphical Password in Cloud 177
Minghuang Guo (Shih Hsin University, Taiwan); Horng-Twu Liaw (Shih Hsin University, Taiwan); Li-Lin Hsiao (Shih Hsin University, Taiwan); Chih-Yuan Huang (Shih Hsin University, Taiwan); Chih-Ta Yen (National Taiwan University of Science and Technology, Taiwan)
11:16 **Data Processing with Time Constraint Using Prediction Algorithm in Mobile Environment** 182  
Ding-Jung Chiang (Taipei Chengshih University of Science and Technology, Taiwan); Ching-Sheng Wang (Aletheia University, Taiwan); Chien-Liang Chen (Aletheia University, Taiwan); Der-Jiunn Deng (National Changhua University of Education, Taiwan)

11:34 **Identity Establishment and Capability Based Access Control (IECAC) Scheme for Internet of Things** 187  
Parikshit Narendra Mahalle (Aalborg University, Denmark); Bayu Anggorojati (Aalborg Universitet, Denmark); Neeli Rashmi Prasad (Center for TeleInFrastructure (CTIF), Denmark); Ramjee Prasad (Aalborg University, Denmark)

10:40 - 11:25  
**K5: Keynote Speech 5**  
Room: 2F Convention Hall  
Chair: Hsiao-Hwa Chen (National Cheng Kung University, Taiwan)  
**Depolarization in Wireless Channels**  
Gordon L. Stüber (Georgia Institute of Technology, USA)

10:40 - 12:10  
**WN2: Wireless Networks 2**  
Sensor Networks  
Room: R202  
Chair: Kuo-Chang Ting (Minghsin University of Science and Technology, Hsinchu, Taiwan)

10:40 **Barrier Coverage with Optimized Quality for Wireless Sensor Networks** 192  
Yung-Liang Lai (Taoyuan Innovation Institute of Technology, Taiwan); Jehn-Ruey Jiang (National Central University, Taiwan)

10:58 **Distributed Scheduling for Cooperative Tracking in Hierarchical Wireless Sensor Networks** 197  
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11:34 An Efficient Scheduling and Random Access Hybrid Medium Access Control Protocol for Underwater Sensor Networks  207
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11:52 A Dynamic Channel Switching Mechanism Based on Vehicle Density  212
Huo Yiding (Beijing University of Posts and Telecommunications, P.R. China); Guo Jinjie (Beijing University of Posts and Telecommunications, P.R. China); Rui Zou (Beijing University of Posts and Telecommunications, P.R. China); Hongtao Zhang (Beijing University of Posts and Telecommunications, P.R. China); Yu Liu (Beijing University of Posts and Telecommunications, P.R. China); Lin Zhang (Beijing University of Posts and Telecommunications, P.R. China)

11:25 - 12:10
K6: Keynote Speech 6
Room: 2F Convention Hall
Chair: Hsiao-Hwa Chen (National Cheng Kung University, Taiwan)
Advanced High Quality Media: Trend and Applications
Naohisa Ohta (Keio University, Japan)

12:10 - 13:20
L3: Lunch
Room: 1F Garden Cafeteria

13:20 - 14:50
IV5: Invited 5
Disaster-Resilient Networks (2)
Room: 2F Convention Hall
Chair: Yeong-Sheng Chen (National Taipei University of Education, Taiwan)
13:20 Multi-hop Communication and Multi-protocol Gateway by Using Plural ITS
Takashi Ohyama (OKI Electric Industry Co., Ltd., Japan); Yutaka Kaneko (OKI Electric Industry Co., Ltd., Japan); Kinya Asano (OKI Electric Industry Co., Ltd., Japan); Masaharu Hamaguchi (Oki Electric Industry Co., Ltd., Japan)

13:38 Rapid Recovery of Base Station Backhaul by the Neighbor Regional Wireless Access Network and Its Extension with the Multi-hop Wireless LAN Relay
Yoji Kishi (KDDI Corporation, Japan)

13:56 Resource Utilization on CWC-Supported Long-Lived IEEE 802.15.4g/4e SUN for Disaster Radio
Fumihide Kojima (National Institute of Information and Communications Technology, Japan); Hiroshi Harada (National Institute of Information & Communications Technology (NICT), Japan)

14:14 RRBS: Reliable Broadcasting Over Unreliable Wireless Links in Resilient Ad-Hoc Networks
Jung-Chun Kao (National Tsing Hua University, Taiwan); Fu-Wen Chen (National Tsing Hua University, Taiwan)

SSR2: Systems, Standards, and Regulations 2
Mobile Cellular Systems
Room: R201
Chair: Hwang-Cheng Wang (National Ilan University, Taiwan)

13:20 Performance Evaluation of Capacity Based CoMP Handover Algorithm for LTE-Advanced
Cheng-Chung Lin (University of Technology Sydney, Australia); Kumbesan Sandrasegaran (University of Technology, Sydney, Australia); Xinning Zhu (Beijing University of Posts and Telecommunications, P.R. China); Zhuliang Xu (University of Technology, Sydney, Australia)

13:38 Performance Evaluation of Intra-Site Coordinated Multi-Point Transmission with Inter-cell Phase Information in 3GPP LTE-A
Chen-Yin Liao (Chunghwa Telecom Co., Ltd., Taiwan); Hsin-Kai Huang (Chunghwa Telecom Co., Ltd., Taiwan)
13:56 Deployment Analysis and Optimization of Macro-Pico Heterogeneous Networks in LTE-A System  246
Peng Tian (Beijing University of Posts and Telecommunications & Key Laboratory of Universal Wireless Communications, Ministry of Education, P.R. China); Hui Tian (Beijing University of Posts & Telecommunications, P.R. China); Liqi Gao (Beijing University of Posts & Telecommunications, P.R. China); Jing Wang (DOCOMO Beijing Communications Laboratories, P.R. China); Xiaoming She (DOCOMO Beijing Communications Laboratories, P.R. China); Lan Chen (DOCOMO Beijing Communications Laboratories, P.R. China)

14:14 Optimization of Time-to-Trigger Parameter on Handover Performance in LTE High-speed Railway Networks  251
Yifan Zhang (Beijing University of Posts and Telecommunications, P.R. China); Muqing Wu (BUPT, P.R. China); Shunming Ge (Beijing University of Posts and Telecommunications, P.R. China); Linlin Luan (Beijing University of Posts and Telecommunications, P.R. China); Ankang Zhang (Beijing University of Posts and Telecommunications, P.R. China)

WC3: Wireless Communications 3
Communication and Coding
Room: R205
Chair: Shih-Chun Lin (National Taipei University of Technology, Taiwan)

13:20 LMMSE Detection of OFDM Signals in Time-Varying Channels with Partial Whitening of Intercarrier Interference and Soft Decision Feedback  256
Hai-wei Wang (National Chiao Tung University, Taiwan); David Lin (National Chiao Tung University, Taiwan); Tzu-Hsien Sang (National Chiao Tung University, Taiwan)

13:38 Performance Comparisons of Localized and Distributed Transmissions Using Iterative Decision-Directed Channel Estimation in DFT-Precoded OFDMA  261
Keita Miwa (Tokyo City University, Japan); Teruo Kawamura (NTT DOCOMO, INC., Japan); Nobuhiko Miki (NTT DOCOMO, INC., Japan); Mamoru Sawahashi (Tokyo City University, Japan)

13:56 Link-Level Performance of Star 32/64QAM Schemes Using Frequency Domain Equalizer for DFT-Precoded OFDMA  266
Chihiro Mori (Tokyo City University, Japan); Teruo Kawamura (NTT DOCOMO, INC., Japan); Nobuhiko Miki (NTT DOCOMO, INC., Japan); Mamoru Sawahashi (Tokyo City University, Japan)
14:14 Band Edge Filters Perform Non Data-Aided Carrier and Timing Synchronization of Software Defined Radio QAM Receivers  271
Frederic j harris (San Diego State Univ, USA); Elettra Venosa (San Diego State University, USA); Xiaofei Chen (San Diego State University, USA); Chris Dick (Xilinx, USA)

14:32 SNR Estimation Techniques for Low SNR Signals  276
Frederic j harris (San Diego State Univ, USA); Chris Dick (Xilinx, USA)

WC4: Wireless Communications 4
MIMO Communications (1)
Room: R202
Chair: Wei-Ho Chung (Academia Sinica, Taiwan)

13:20 Simple Zero Interference Transmissions to Users with Rank Deficient Channels  281
Helka-Liina Määttänen (Renesas Mobile Europe, Finland); Olav Tirkkonen (Aalto University, Finland)

13:38 Adaptive One-Way and Two-Way Relaying for MIMO Relay Networks  286
Sho Mukai (Yokohama National University, Japan); Fumie Ono (National Institute of Information and Communications Technology, Japan); Hideki Ochiai (Yokohama National University, Japan); Ryu Miura (NICT, Japan)

13:56 I/Q Imbalance Compensation in Precoded MIMO-OFDMA Systems  291
Udesh Oruthota (Aalto University, Finland); Olav Tirkkonen (Aalto University, Finland)

14:14 Joint Precoding for Two Way AF MIMO Relays in Frequency Selective OFDM Channels  296
Nithin James (Indian Institute Of Technology, Madras, India); Rajeshwari S. S (Indian Institute Technology, India); Devendra Jalihal (Indian Institute of Technology Madras, India); K Giridhar (Indian Institute of Technology, Madras, India)

14:32 Effects of Open-loop Transmit Diversity Schemes with Four Antennas on Control Signals Using Cyclic-Shift CDMA  301
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WN3: Wireless Networks 3
Cooperative Networks
Room: R203
Chair: Kuo-Chang Ting (Minghsin University of Science and Technology, Hsinchu, Taiwan)

13:20 Optimizing for High Channel Capacity of Multiple-Hop MIMO Relay System with MAC-PHY Cross Layer  306
Pham Thanh Hiep (Yokohama national university, Japan); Ryuji Kohno (Yokohama National University, Japan)

13:38 Performance Analysis of Packet Cooperative Cellular Relaying Networks  311
Hyungseok Yu (Georgia Institute of Technology, USA); Gordon Stüber (Georgia Institute of Technology, USA)

13:56 Finding Optimized Positioning for Fixed Relay Stations in a Cooperative LTE Network  316
André Martins (Instituto de Telecomunicações and Instituto Superior Técnico, Portugal); António J. Rodrigues (IT / Instituto Superior Técnico, Portugal); Pedro Vieira (Instituto de Telecomunicações and ISEL, Portugal)

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James Ho (University of Waterloo, Canada); Pin-Han Ho (University of Waterloo, Canada)

14:50 - 15:10
B6: Coffee Break

15:10 - 16:40
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CONASENSE
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Chair: Ramjee Prasad (Aalborg University, Denmark)

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Chair: Fang-Chang Kuo (National Ilan University, Taiwan)
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15:46 A Multi-Path Data Exclusion Model for RSSI-based Indoor Localization 336
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15:46 Recovery Techniques for Images and Videos with Missing Data in Disaster Situation 352
Masayuki Kawamata (Tohoku University, Japan); Shuhei Sakamoto (Tohoku University, Japan); Masahide Abe (Tohoku University, Japan)

16:04 SensorFly: Enabling Groups of Minimalistic Semi-Controllable Flying Sensing Devices 353
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16:22 Disaster and Emergency Management System 363
Fang-Chu Chen (Computer and Communications Labs, ITRI, Taiwan); Rui-Yen Chang (Industrial Technology Research Institute & Industrial Technology Research Institute, Taiwan); Wan-Yi Lin (Industrial Technology Research Institute, Taiwan); Sheng Hui Chen (Engineer, Taiwan); YuCheng Chen (Engineer, Taiwan); Chin Nung Li (Project Manager, Taiwan)

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Green Communications
Room: R201
Chair: I-Wei Lai (Academia Sinica, Taiwan)

15:10 A Polarization-Amplitude-Phase Modulation Scheme for the Power Amplifier Energy Efficiency Enhancement 369
Dong Wei (Beijing University of Posts and Telecommunications, P.R. China); Feng Chunyan (Beijing University of Posts and Telecommunications, P.R. China); Caili Guo (Beijing University of Posts and Telecommunications, P.R. China)

15:28 Impact of Site Power Modeling on Heterogeneous Deployment in Radio Access Networks 374
Chih-Hsuan Tang (Chunghwa Telecom, Taiwan); Chin-Wei Lin (Chunghwa Telecom, Taiwan); Chi-En Wu (Chunghwa Telecom, Taiwan); Chen-Yin Liao (Chunghwa Telecom Co., Ltd., Taiwan)
15:46 Clustering Based Power Saving Algorithm for Self-Organized Sleep Mode in Femtocell Networks 379
Wei Li (Beijing University of Posts and Telecommunications, P.R. China); Wei Zheng (BUPT, P.R. China); YuanBao Xie (Beijing University of Posts and Telecommunications, P.R. China); Xiangming Wen (Beijing University of Posts and Telecommunications, P.R. China)

16:04 Accurate Analysis of Delay and Power Consumption of LTE DRX Mechanism with a Combination of Short and Long Cycles 384
Hwang-Cheng Wang (National Ilan University, Taiwan); Chih-Cheng Tseng (National Ilan University, Taiwan); Guan-Yun Chen (National Ilan University, Taiwan); Fang-Chang Kuo (National Ilan University, Taiwan); Kuo-Chang Ting (Minghsin University of Science and Technology, Hsinchu, Taiwan)

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Chair: Wei-Ho Chung (Academia Sinica, Taiwan)

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15:28 Impact of Multi-beam Antenna Amplitude Tapering on Co-Channel Interference and Backhaul Throughput Density 394
Nizabat Khan (Universite Catholique de Louvain, Belgium); Tao Jiang (University of York, United Kingdom); David Grace (University of York, United Kingdom); Alister G. Burr (University of York, United Kingdom); Claude Oestges (Université Catholique de Louvain, Belgium)

15:46 A Multi-Mode Space-Time Coded MIMO System Using Lattice-Reduction Aided Detection 399
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16:22 Iterative Overlap QRM-MLBD for Single-Carrier MIMO Transmission Without CP Insertion  409
Hideyuki Moroga (Tohoku University, Japan); Tetsuya Yamamoto (Tohoku University, Japan); Fumiyuki Adachi (Tohoku University, Japan)

18:30 - 21:00
W2: Award Banquet
Venue: W-Hotel 8F Mega-Room 1 (10 Zhongxiao East Road, Sec 5, Xinyi District, Taipei.)
Shuttle Bus to Award Banquet site will be leaving at 17:30 in front of Howard International House.
# Thursday, September 27

**08:50 - 09:35**

**K7: Keynote Speech 7**  
**Room:** 2F Convention Hall  
**Chair:** Phone Lin (National Taiwan University, Taiwan)  
**Monetizing MBB with LTE - network deployment and strategies**  
Nigel Chan (Nokia Siemens Networks, Greater China)

**08:50 - 10:20**

**WC7: Wireless Communications 7**  
**Radio Propagation**  
**Room:** R203  
**Chair:** Ying-Ren Chien (National I-Lan University, Taiwan)

**08:50 A VLF to UHF Propagation Model for Evaluation of High-Speed Railway Electromagnetic Emissions in Outside World**  
Pedro Vieira (Instituto de Telecomunicações and ISEL, Portugal); Nuno Cota (Instituto Superior de Engenharia de Lisboa, Portugal); António J. Rodrigues (IT / Instituto Superior Técnico, Portugal)

**09:08 Small-Scale Statistics of Fixed Relay Polarimetric Links Using Narrow-Beamwidth Antennas At 3.5 GHz**  
Nizabat Khan (Université Catholique de Louvain, Belgium); Claude Oestges (Université Catholique de Louvain, Belgium)

**09:26 Power Allocation for Indoor Distributed Antenna System Based on Path Loss Prediction At 6 GHz**  
Liang Xin (Beijing University of Posts and Telecommunications, P.R. China); Jianhua Zhang (Beijing University of Posts and Telecommunications, P.R. China); Xiaofan Li (Beijing University of Posts and telecommunications, P.R. China)

**09:44 Power Coverage and Multipath Diversity for Indoor Distributed Antenna System Based on Wideband Channel Measurement At 6 GHz**  
Liang Xin (Beijing University of Posts and Telecommunications, P.R. China); Jianhua Zhang (Beijing University of Posts and Telecommunications, P.R. China); Fei Xiong (Beijing University of Post and Telecommunication, P.R. China); Yanliang Sun (Beijing University of Posts and Telecommunications, P.R. China); Nan Sheng (Beijing University of Posts and Telecommunications, P.R. China)
10:02 **UHF RFID PIFA Array Tag Antenna for Human Body Applications**  434
Min-Chuan Tsai (Department of Electronic Engineering, National Ilan University, Taiwan); Ian Guang Li (SA, Taiwan); Chien-Wen Chiu (National Ilan University, Taiwan); Hwang-Cheng Wang (National Ilan University, Taiwan)

09:35 - 10:20

**K8: Keynote Speech 8**
Room: 2F Convention Hall
Chair: Phone Lin (National Taiwan University, Taiwan)
**MAC in Motion: Delivering Differential Services in Drive-Thru Internet**
Sherman Shen (University of Waterloo, Canada)

10:20 - 10:40

**B7: Coffee Break**

10:40 - 12:10

**AS3: Applications and Service 3**
Mobile Multimedia
Room: R202
Chair: Ray-Guang Cheng (National Taiwan University of Science and Technology, Taiwan)

10:40 **A Model for Evaluating QoE of Mobile Internet Services**  438
Yi Luo (Beijing University of Posts and Telecommunications, P.R. China); Guochu Shou (Beijing University of Posts and Telecommunications, P.R. China); Yihong Hu (Beijing University of Posts and Telecommunications, P.R. China); Zhigang Guo (Beijing University of Posts and Telecommunications, P.R. China)

10:58 **A Joint Source-Channel Decoder for H.264 SPS and PPS Headers**  443
Kai Yen (Institute for Infocomm Research, Singapore); Sumei Sun (Institute for Infocomm Research, Singapore); Ubolthip Sethakaset (Institute for Infocomm Research, Singapore); Peng Hui Tan (Institute for Infocomm Research, Singapore); Zhengguo Li (Institute for Infocomm Research, Singapore); Jinghong Zheng (Institute for Infocomm Research, Singapore)
11:16 An Empirical Investigation Into CDMA Network Traffic Classification Based on Feature Selection  448
Yang Jie (Beijing University of Posts and Telecommunications, P.R. China); Zheng Ma (Beijing University of Posts and Telecommunications, P.R. China); Chao Dong (Beijing University of Posts and Telecommunications, P.R. China); Gang Cheng (Microsoft Corporation, P.R. China)

11:34 A Novel Secure Wireless Communication Using Side Information From Spatially Distributed Nodes in Private Wireless Network  453
Hiroki Matoba (Osaka University & Osaka University, Japan); Shinichi Miyamoto (Osaka University, Japan); Seiichi Sampei (Osaka University, Japan)

Vandana Rohokale (CTIF, Aalborg University & Sinhgad Institute of Technology, Lonavala, Maharashtra, India, India); Neeli Rashmi Prasad (Center for TeleInFrastruktur (CTIF), Denmark); Ramjee Prasad (Center for TeleInFrastruktur (CTIF), Aalborg University, Denmark)

10:40 - 11:25
K9: Keynote Speech 9
Room: 2F Convention Hall
Chair: Der-Jiunn Deng (National Changhua University of Education, Taiwan)
Security and Network Performance for Wireless Ad Hoc Networks
Yuguang “Michael” Fang (University of Florida, USA)

10:40 - 12:10
WC8: Wireless Communications 8
Channel Modeling and Signal Processing Techniques (1)
Room: R203
Chair: Ying-Ren Chien (National I-Lan University, Taiwan)

10:40 The Impulsive Noise Reduction Using It’s Replica Signal Under Class-A Impulsive Channel  463
Takuya Kitamura (Tokyo University of Science, Japan); Hiroshi Ando (Tokyo University of Science, Japan); Kohei Ohno (Tokyo University of Science, Japan); Makoto Itami (Tokyo University of Science, Japan)
10:58 Theoretical Polarized Channel Model and Analysis of XPD and Polarization Correlation Under Narrowband Macrocell Environment
Xiaobin Wu (Beijing University of Posts and Telecommunications, P.R. China); Caili Guo (Beijing University of Posts and Telecommunications, P.R. China); Feng Chunyan (Beijing University of Posts and Telecommunications, P.R. China); Lin Lin (Beijing University of Posts and Telecommunications, P.R. China)

11:16 Low-speed ADC Sampling Based High-resolution Compressive Channel Estimation
Guan Gui (Tohoku University, Japan); Aihua Kuang (School of Electronics and Information Engineering of Zhengzhou, P.R. China); Ling Wang (University of Electronic Science and Technology of China, P.R. China)

11:34 Network Video Quality Assessment Based on Measuring Salient Video Features
Zhiming Shi (Beijing University of Posts and Telecommunications, P.R. China)

11:52 Robust Transceiver Optimization for Non-Regenerative MIMO Relay Systems
Qi Sun (Beijing University of Posts and Telecommunications, P.R. China); Lihua Li (Beijing University of Posts and Telecommunications, P.R. China)

11:25 - 12:10
K10: Keynote Speech 10
Room: 2F Convention Hall
Chair: Der-Jiunn Deng (National Changhua University of Education, Taiwan)
BAN of Things and Dependable Wireless M2M
Ryuji Kohno (Yokohama National University, Japan)

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13:20 - 14:50
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13:20 Towards Throughput Optimization of Wireless Mesh Networks in Disaster Areas 488
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13:38 Packet Loss Concealment of VoIP Under Severe Loss Conditions 489
Akinori Ito (Tohoku University, Japan); Takeshi Nagano (Tohoku University, Japan)

13:56 Multiband Antenna for Disaster-resilient Wireless Networks 491
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14:14 Compression of Scene Images by Region Segmentation and Text Detection 493
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14:32 Distributed Service Recovery for Real-Time Pub/Sub Services on Disaster Management 494
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WC9: Wireless Communications 9
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Room: R201
Chair: Yao-Win Peter Hong (National Tsing Hua University, Taiwan)

13:20 Latency Impacts of Different Parallelism Levels in Data-Flow Architectures 500
Markus Petri (IHP, Germany)

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14:14 A Non-invasive Detection of Respiration by Using Ultra Wideband Signals  514
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14:32 A Space-Time Block Code with Temporal and Spatial Modulation  519
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Room: R203
Chair: Shao-Yu Lien (National Taiwan University, Taiwan)

13:20 PIB with Rate Selection for Multicast Broadcast Service in Relay System  524
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13:38 A Listening Power-Saving Mechanism in MAC Layer for the DCF of 802.11n  529
Kuo-Chang Ting (Minghsin University of Science and Technology, Hsinchu, Taiwan); Hwang-Cheng Wang (National Ilan University, Taiwan); Fang-Chang Kuo (National Ilan University, Taiwan); Chih-Cheng Tseng (National Ilan University, Taiwan)

13:56 A Cross-Layer Design for Video Applications Based on QoE Prediction  534
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Shou-Chih Lo (National Dong Hwa University, Taiwan); Nai-Wun Luo (National Dong Hwa University, Taiwan)

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Chair: Chih-Cheng Tseng (National Ilan University, Taiwan)

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13:38 Call Admission Control Based Resource Allocation Scheme for LTE Uplink  554
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14:14 Resilience in IMS: End-to-End Reliability Analysis Via Markov Reward Models  564
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15:28 Protocol Optimization for Integrated Heterogeneous Networks in Disaster Areas 576
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Chair: Shao-Yu Lien (National Taiwan University, Taiwan)

15:10 Hybrid Division Duplex for Cognitive Small Cell Networks  609
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15:28 A Novel Distributed Cluster Combination Method for CoMP in LTE-A System
Hongbin Li (Beijing University of Posts and Telecommunications, P.R. China); Hui Tian (Beijing University of Posts and Telecommunications, P.R. China); Cheng Qin (Beijing University of Posts and Telecommunications, P.R. China); Yushan Pei (Beijing University of Posts and Telecommunications, P.R. China)

15:46 Joint Pricing and Power Control for OFDMA Femtocell Networks Using Stackelberg Game
Jingjing Zhang (Beijing University of Posts and Telecommunications, P.R. China); Zhenmin Zhao (Beijing University of Posts and Telecommunications, P.R. China); Wei Li (Beijing University of Posts and Telecommunications, P.R. China); Zhen Liu (Beijing University of Posts and Telecommunications, P.R. China); Liang Xin (Beijing University of Posts and Telecommunications, P.R. China)

16:04 Energy Efficient Cross-layer Resource Allocation Scheme Based on Potential Games in LTE-A
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16:22 Shadowing Time-Scale Admission and Power Control for Small Cell Networks
Siew Eng Nai (Institute for Infocomm Research, Singapore); Tony Q. S. Quek (Singapore University of Technology and Design (SUTD) & Institute for Infocomm Research, Singapore); Mérouane Debbah (Supelec, France)

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Room: R203
Chair: Jeng-Ji Huang (National Taiwan Normal University, Taiwan)

15:10 Centralized Channel Assignment for IEEE 802.11 WLANs: Utilization MinMax-Sum
Micheal Drieberg (Universiti Teknologi PETRONAS, Malaysia); Fu-Chun Zheng (The University of Reading, United Kingdom)
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