

## Track 2 Networks

Organizer: K. C. Chua,  
Siemens Singapore, Singapore

### • TS14 Medium Access Control I

Tuesday, 18 March 2003  
(9:30 - 12:30) – Room 211  
**Session Chair:** Jae H. Kim,  
Boeing Corporation, USA

### TS14-1: On the Performance of a New 802.11-based Low Latency Power Control MAC Protocol for Ad hoc Networks

Farshid Alizadeh-Shabdz, Suresh Subramaniam, *George Washington University, USA*

### TS14-2: ADHOC MAC: a New, Flexible and Reliable MAC Architecture for Ad hoc networks

Flaminio Borgonovo, Antonio Capone, Matteo Cesana, Luigi Fratta, *Politecnico di Milano, Italy*

### TS14-3: Performance Analysis of UPMA Protocol for Wireless Multihop Mobile Ad hoc Networks

Kai Liu, Thomas Wong, *Illinois Institute of Technology, USA*, Jiandong Li, XiDian University, China, James Han, *Motorola Inc., USA*

### TS14-4: Clique-Based Randomized Multiple Access for Energy-Efficient Wireless Ad hoc Networks

Paul G. Flikkema, Brent West, *Northern Arizona University, USA*

### TS14-5: Performance Evaluation of Multiple Access Protocols for Ad hoc Networks Using Directional Antennas

Tamer A. ElBatt, Timothy Anderson, Bo Ryu, *HRL Laboratories, LLC, USA*

### TS14-6: Throughput and Fairness in a Hybrid Channel Access Scheme for Ad hoc Networks

Yu Wang, Jose J. Garcia-Luna-Aceves, *University of California at Santa Cruz, USA*

### TS14-7: A Synchronous, Reservation Based Medium Access Control Protocol for Multihop Wireless Networks

Jennifer C. Fang, *University of California, San Diego, USA*, George Kondylis, *Broadcom Corporation, USA*

### • TS15 Network and Transport Protocols I

Tuesday, 18 March 2003  
(14:00 - 15:30) – Room 211  
**Session Chair:** Arek Dadej,  
*University of South Australia, Australia*

### TS15-1: A Flow Control Scheme for Improving TCP Throughput and Fairness for Wireless Networks

Heejin Jang, Young-Joo Suh, Pohang *University of Science & Technology (POSTECH), Korea*

### TS15-2: ILC-TCP: An Interlayer Collaboration Protocol for TCP Performance Improvement in Mobile and Wireless Environments

Madhav Chinta, *Citrix Corporation, USA*, Abdelsalam Sumi Helal, Choonhwa Lee, *University of Florida, USA*

### TS15-3: Multi Hop Communication in Global Wireless Framework

Anirach Mingkhwan, Omar Abuelpma'atti, Madjid Merabti, Bob Askwith, *Liverpool John Moores University, United Kingdom*

### • TS16 Network and Transport Protocols II

Tuesday, 18 March 2003  
(16:00 - 17:30) – Room 211  
**Session Chair:** Arek Dadej,  
*University of South Australia, Australia*

### TS16-1: OPNET Simulation Modeling and Analysis of Enhanced Mobile IP

Taeyeon Park, Arek Dadej, *University of South Australia, Australia*

### TS16-2: IP Header Compression: A Study of Context Establishment

Cedric Westphal, Rajeev Koodli, *Nokia, USA*

### TS16-3: IP Paging Considered Unnecessary: Mobile IPv6 and IP Paging for Dormant Mode Location Update in Macrocellular and Hotspot Networks

James Kempf, *DoCoMo USA Communications Labs, USA*, Pars Mutaf, *INRIA Rhone-Alps, France*

### • TS17 QoS and Resource Allocation I

Tuesday, 18 March 2003  
(9:30 - 12:30) – Room 212  
**Session Chair:** Gang Wu,  
*DoCoMoLabs, USA*

### TS17-1: Dynamic Resource Allocation with Finite Buffer Constraint in Broadband OFDMA Networks

Guoqing Li, Hui Liu, *University of Washington, USA*

### TS17-2: A Proposal of an Adaptive Channel Allocation and Traffic Engineering Algorithm in Multi-hop Mesh Networks for Broadband Fixed Wireless Access

Yoji Kishi, Keita Tabata, Satoshi Konishi, Shinichi Nomoto, *KDDI R&D Laboratories, Inc., Japan*

### TS17-3: Resource Allocation and Fairness for Downlink Shared Data Channels

Rao Sudarshan, Subramanian Vasudevan, *Lucent Technologies, USA*

### TS17-4: Resource Allocation for Non-Realtime Data Users in UMTS Uplink

Bang Wang, *National University of Singapore, Singapore*, Kee Chaing Chua, *National University of Singapore, Singapore* and *Siemens Singapore, Singapore*, Hans-Peter Schwefel, *ICM Mobile Core R&D Siemens Pte. Ltd., Singapore*

### TS17-5: Forward-Link Resource Allocation for a Two-Cell Voice Network with Multiple Service Classes

Chi Zhou, *Florida International University, USA*, Michael Honig, *Northwestern University, USA*, Scott Jordan, *University of California, USA*, Randall Berry, *Northwestern University, USA*

### TS17-6: A Priority-based Channel Allocation Scheme for Cellular Networks

Tsang-Ling Chris Sheu, *National Sun-Yat-Sen University, Taiwan*

### TS17-7: Performance Analysis of Bandwidth Allocations for Multi-Services Mobile Wireless Cellular Networks

Lizhong Li, Bin Li, Bo Li, Xi-Ren Cao, *Hong Kong University of Science and Technology, Hong Kong*

### • TS18 Signaling and Link Configuration

Tuesday, 18 March 2003  
(14:00 - 15:30) – Room 212  
**Session Chair:** Mehul Motani,  
*National University of Singapore, Singapore*

### TS18-1: An Examination of Signaling Traffic in a Super-Charged Mobile Network

Amish Chana, Fambirai Takawira, *University of Natal, South Africa*

### TS18-2: Cross-layer Signaling for Next-Generation Wireless Systems

Qi Wang, Mosa Ali Abu-Rgheff, *University of Plymouth, United Kingdom*

### TS18-3: Co-Link Configuration: Using Wireless Diversity for More Than Just Connectivity

Jean Tourrilhes, Venky Krishnan, *Hewlett Packard, USA*

### • TS19 Speech Communications and Quality

Tuesday, 18 March 2003  
(16:00 - 17:30) – Room 212  
**Session Chair:** Irina C. Cotanis,  
*Ericsson NetQual Inc., USA*

### TS19-1: A Framework for Adaptive Voice Communication over Wireless Channels

Sandeep K. S. Gupta, Suhaib Obeidat, *Arizona State University, USA*

### TS19-2: Speech in the VQE Device Environment

Irina C Cotanis, *Ericsson NetQual Inc., USA*

### TS19-3: Speaker Bias in Speech Quality Evaluation over End-to-End Communication Links

Irina C Cotanis, *Ericsson NetQual Inc., USA*

### • TS20 Routing in Ad hoc Networks I

Tuesday, 18 March 2003  
(9:30 - 12:30) – Room 207  
**Session Chair:** Prasant Mohapatra,  
*University of California at Davis, USA*

**TS20-1: Weight-Based Clustering Multicast Routing Protocol for Mobile Ad hoc Networks**

Chun-Chieh Huang, Ruay-Shiung Chang, *National Dong-Hwa University, Taiwan*, Ming-Huang Guo, *Shih-Hsiu University, Taiwan*

**TS20-2: Efficient Overlay Multicast for Mobile Ad hoc Networks**

Chao Gui, Prasant Mohapatra, *University of California, Davis, USA*

**TS20-3: Probabilistic Broadcast for Flooding in Wireless Mobile Ad hoc Networks**

Yoav Sasson, David Cavin, Andre Schiper, *Ecole Polytechnique Federale de Lausanne, Switzerland*

**TS20-4: A Bounding Algorithm for the Broadcast Storm Problem in Mobile Ad hoc Networks**

Dongkyun Kim, *Kyungpook National University, Korea*, Chai-Keong Toh, *University of California at Irvine, USA*, Juan-Carlos Cano, Pietro Manzoni, *Universidad Politecnica de Valencia, Spain*

**TS20-5: Obstacle-Free Geocasting Protocol for Ad hoc Wireless Networks**

Chang Chih Yung, *Tamkang University, Taiwan*, Chao-Tsun Chang, Shin-Chih Tu, *National Central University, Taiwan*

**TS20-6: Evaluation of Ad hoc Routing Protocols under a Peer-to-Peer Application**

Leonardo B. Oliveira, Isabela G Siqueira, Antônio A. Loureiro, *Universidade de Federal de Minas Gerais, Brazil*

**TS20-7: A Cognitive Framework for Performance/Resilience Optimized Multipath Routing in Networks with Unstable Topologies**

Vladimir V. Marbukh, *National Institute of Standards and Technology, USA*

**• TS21 Routing in Ad hoc Networks II**

Tuesday, 18 March 2003  
(14:00 - 15:30) – Room 207

**Session Chair:** Prasant Mohapatra, *University of California at Davis, USA*

**TS21-1: Comparing the Routing Energy Overheads of Ad hoc Routing Protocols**

Sorav Banasal, *Sanford University, USA*, Rajeev Shorey, *IBM India Research Laboratory, India*, Archan Misra, *IBM T. J. Watson Research Center, India*

**TS21-2: A Framework for Wireless Ad hoc Routing Protocols**

Tao Lin, Scott F Midkiff, Jahng S. Park, *Virginia Polytechnic and State University, USA*

**TS21-3: Comparison of Two Wireless Ad hoc Routing Protocols on a Hardware Test-Bed**

Shweta D Bhandare, Sheetal Kumar R Doshi, Timothy X. Brown, Sagar Sanghani, *University of Colorado at Boulder, USA*

**TS21-4: Fault Tolerant Routing in Mobile Ad hoc Networks**

Yuan Xue, Klara Nahrstedt, *University of Illinois at Urbana-Champaign, USA*

**• TS22 Routing in Ad hoc Networks III**

Tuesday, 18 March 2003  
(16:00 - 17:30) – Room 207

**Session Chair:** Prasant Mohapatra, *University of California at Davis, USA*

**TS22-1: LAKER: Location Aided Knowledge Extraction Routing for Mobile Ad hoc Networks**

Jian Li, Prasant Mohapatra, *University of California at Davis, USA*

**TS22-2: Lifetime Prediction Routing in Mobile Ad hoc Networks**

Morteza Maleki, Karthik Dantu, Massoud Pedram, *University of California, USA*

**TS22-3: Adaptive QoS Routing Based on Prediction of Local Performance in Ad hoc Networks**

Hongxia Sun, Herman D. Hughes, *Michigan State University, USA*

**TS22-4: Capacity Compatible 2-Level Link State Routing for Ad hoc Networks**

John Sucec, Ivan Marsic, *Rutgers University, USA*

**• TS23 Handoff and Mobility I**

Tuesday, 18 March 2003  
(9:30 - 12:30) – Room 213

**Session Chair:** Fujio Watanabe, *DoCoMoLabs, USA*

**TS23-1: Mobility-based Estimation of Inter-BSC Soft Handoff Characteristics in CDMA Networks**

Qiang Gao, Cherng-Shung Hsu, *Ericsson Wireless Communications Inc., USA*

**TS23-2: An Efficient Timer-based Hard Handoff Algorithm for Cellular Networks**

Alexe E. Leu, Brian L. Mark, *George Mason University, USA*

**TS23-3: An Adaptive Soft Handover Algorithm for Traffic-load Shedding in the WCDMA Mobile Communication System**

Won-Ik Kim, Chang-Soon Kang, *Electronics & Telecommunications Research Institute, Korea*

**TS23-4: Handoff Performance of Mobile Host and Mobile Router Employing HMIP Extension**

Koji Omae, Masahiro Inoue, Ichiro Okajima, Narumi Umeda, *NTT DoCoMo, Inc. Wireless Laboratories, Japan*

**TS23-5: Motion-Constraint Based Handoff Protocol for Mobile Internet**

Aman Kansal, Uday B. Desai, *Indian Institute of Technology, India*

**TS23-6: Fast Mobile IPv6 Handover Packet Loss Performance**

James Kempf, Jonathan Wood, Guangrui Fu, *DoCoMo USA Communications Labs, USA*

**TS23-7: Seamless Hand-off Method for Multicast Receivers Based on Wireless Link Connection Intensity**

Yuki Moritani, Yukio Atsumi, *NTT DoCoMo Inc., Japan*

**• TS24 Handoff and Mobility II**

Tuesday, 18 March 2003  
(14:00 - 15:30) – Room 213

**Session Chair:** Gang Wu, *DoCoMoLabs, USA*

**TS24-1: Support of Micro-Mobility in MPLS-based Wireless Access Networks**

Kaiduan Xie, Vincent W.S. Wong, Victor C.M. Leung, *University of British Columbia, Canada*

**TS24-2: Fast Handoffs in Wireless LAN Networks Using Mobile Initiated Tunneling Handoff Protocol for IPv4 (MITHv4)**

Youngjune Lee Gwon, Guangrui Fu, Ravi Jain, *DoCoMo Communication Laboratories USA, USA*

**TS24-3: An Integrated Handoff Solution for Wireless ATM**

Wei K. Tsai, Peng Zheng, Boyun Tu, Chai Keong Toh, *University of California at Irvine, USA*

**• TS25 Sensor Network Organization and Operation I**

Tuesday, 18 March 2003  
(16:00 - 17:30) – Room 213

**Session Chair:** Joo Ghee Lim, *Institute for Infocomm Research, Singapore*

**TS25-1: On the Connectivity Modeling and the Tradeoffs between Reliability and Energy Efficiency in Large Scale Wireless Sensor Networks**

Jin Zhu, Symeon Papavassiliou, *New Jersey Institute of Technology, USA*

**TS25-2: Simple, Accurate Time Synchronization for Wireless Sensor Networks**

Mihail L Sichiitu, Chanchai Veerarattipphan, *North Carolina State University, USA*

**TS25-3: Minimizing Communication Costs in Hierarchically Clustered Networks of Wireless Sensors**

Seema Bandyopadhyay, Edward J Coyle, *Purdue University, USA*

**TS25-4: A Lightweight Protocol for Wireless Sensor Networks**

Prashant Agrawal, *Laboratories for Information Technology, Singapore*, Sun Teck Tan, Akkihebbal L Ananda, *Center for Internet Research, Singapore*

**• TS 38 Medium Access Control II**

Wednesday, 19 March 2003  
(9:30 - 12:30) – Room 211

**Session Chair:** Jae H. Kim, *Boeing Corporation, USA*

**TS38-1: Efficient Media Access Protocols for Wireless LANs with Smart Antennas**  
Tianmin Ren, Iordanis Koutsopoulos, Leandros Tassioulas, *University of Maryland, USA*

**TS38-2: Enhanced DCF of IEEE 802.11e to Support QoS**  
Yang Xiao, *The University of Memphis, USA*

**TS38-3: Improved MAC protocols for DCF and PCF Modes over Fading Channels in Wireless LANs**  
Zhiui Chen, Ashfaq Khokhar, *University of Illinois at Chicago, USA*

**TS38-4: An Analysis of CSMA/CA Protocol with Capture in Wireless LANs**  
Zoran Hadzi-Velkov, Boris Spasenovski, Ss. Cyril and Methodius University, *Macedonia*

**TS38-5: A Wireless Multimedia LAN Architecture Using DCF with Shortened Contention Window for QoS Provisioning**  
Kanghee Kim, Aftab Ahmad, Kiseon Kim, Kwang-Ju Institute of Science and Technology, *Korea*

**TS38-6: Adaptive Random Access and Resource Allocation Scheme Based on Traffic Load in HiperLAN Type2 System**  
Hyun-Ho Choi, Gyung-Ho Hwang, Dong-Ho Cho, *Korea Advanced Institute of Science and Technology, Korea*

**TS38-7: A Modified PRMA Protocol for Transmission of Multimedia over an Error Free Wireless Channel**  
Ali Manea Alsayh, Said Mohammed Elnoubi, m. Nazih ElDerini, *Alexandria University, Egypt*

**• TS39 Network and Transport Protocols III**  
Wednesday, 19 March 2003  
(14:00 - 15:30) – Room 211  
**Session Chair:** Charles Knutson, *Brigham Young University, USA*

**TS39-1: A Proxy Architecture to Enhance the Performance of WAP 2.0 by Data Compression**  
Zhanping Yin, Victor C.M. Leung, *University of British Columbia, Canada*

**TS39-2: Transport Discovery in Wireless Multi-Transport Environments**  
Shannon B. Barnes, *Intel Research & Development, USA*, Ryan W. Woodings, Charles Knutson, *Brigham Young University, USA*

**TS39-3: Rate-control Snoop : A Reliable Transport Protocol for Heterogeneous Networks with Wired and Wireless Links**  
Young-Joo Suh, Young-Joo Song, *Pohang University of Science & Technology, Korea*

**TS39-4: Implementation of Explicit Wireless Loss Notification Using MAC-**

## Layer Information

Bing Zhang, *ATR Adaptive Communications Research Laboratories, Japan*, Mahdad N. Shirazi, *Communications Research Laboratory, Japan*

## • TS40 Network and Content Management

Wednesday, 19 March 2003  
(16:00 - 17:30) – Room 211

**Session Chair:** Charles Knutson, *Brigham Young University, USA*

## TS40-1: Noncooperative Content Distribution in Mobile Infostation Networks

Wing Ho Yuen, Roy D. Yates, Siun-Chuon Mau, *WINLAB, Rutgers University, USA*

## TS40-2: Policy Based Management for Next Generation Mobile Networks

Salvatore Iacono, Fabrizio Arneodo, Motorola Technology Center of Italy, Italy, Klecius Cardoso, Marc Girod Genet, Djamel Zeghlache, *Institut National des Télécommunications, France*

## TS40-3: A Case Study Optimizing Communications for Constellation Space Missions

Michael Hadjitheodosiou, Yingyong Chen, *CSHCN, University of Maryland, USA*

## • TS41 QoS and Resource Allocation II

Wednesday, 19 March 2003  
(9:30 - 12:30) – Room 212

**Session Chair:** Xia Gao, *DoCoMoLabs, USA*

## TS41-1: End-to-end QoS Provision in Mobile Heterogeneous Networks

Xia Gao, Gang Wu, Miki Toshio, *DoCoMo Communications Lab USA, USA*

## TS41-2: QoS Provisioning for Adaptive Services with Degradation in Cellular Network

Samrat Ganguly, *NEC USA, Inc., USA*, Badri Nath, *Rutgers University, USA*

## TS41-3: Adaptive EDCF: Enhanced Service Differentiation for IEEE 802.11 Wireless Ad hoc Networks

Lamia Romdhani, Qiang Ni, Thierry Turletti, *INRIA, France*

## TS41-4: Relative Service Differentiation for Mobile Ad hoc Networks

Kee Chaing Chua, Hannan Xiao, *National University of Singapore, Singapore*, Winston Seah, *Institute for Infocom Research, Singapore*

## TS41-5: A Code Allocation Protocol for Maximizing Throughput in CDMA based Ad hoc Networks

Saurabh Srivastava, Sachee Tripathi, Dheeraj Sanghi, Ajit Kumar Chaturvedi, *Indian Institute of Technology, India*

## TS41-6: Evaluation of an Enhanced Intelligent DCA Technique for Unlicensed wLANs and PAWNS

Giannis Marias, Nikos Fragiadakis, Stathes Hadjijefthymiades, Lazaros Merakos, *University of Athens, Greece*

## TS41-7: A Resource Reservation Scheme with Dynamic Grouping for Multimedia Wireless Networks

Jau-Yang Chang, *National Taiwan University of Science and Technology, Taiwan*, Hsing-Lung Chen, *Chin Min College of Technology and Commerce, Taiwan*

## • TS42 Capacity and Network Dimensioning I

Wednesday, 19 March 2003  
(14:00 - 15:30) – Room 212

**Session Chair:** Mooi Choo Chuah, *Lucent Technologies, USA*

## TS42-1: Capacity of Multiservice WCDMA Networks with Variable GoS

Nidhi Hegde, Eitan Altman, *INRIA, France*

## TS42-2: Uplink Capacity of a CDMA Network

Don Torrieri, *US Army Research Laboratory, USA*

## TS42-3: Interference-based Capacity Analysis in CDMA Cellular Systems

Joonhwan Kim, *School of Electrical Engineering, Korea*, Young-June Choi, Saewoong Bahk, *GTC Semiconductor, Korea*

## TS42-4: Impact of Rate Control on the Capacity of an Iub Link: Multiple Service Case

Cem Saraydar, *Lucent Technologies, USA*, Santosh Abraham, Mooi-Choo Chuah, *New Jersey Institute of Technology, USA*

## • TS43 Capacity and Network Dimensioning II

Wednesday, 19 March 2003  
16:00 - 17:30 – Room 212

**Session Chair:** Mooi Choo Chuah, *Lucent Technologies, USA*

## TS43-1: Microcell-Adjusting for Hierarchical Cellular Systems with Non-Uniformly Distributed Teletraffic

Szu-Lin Su, Chia-Sheng Tsai, *National Cheng Kung University, Taiwan*

## TS43-2: On the Mobility/Capacity Conversion in Wireless Networks

Chin-Tau Lea, Meng Zhang, *Hong Kong University of Science and Technology, Hong Kong*

## TS43-3: A Tabu Search Heuristic for the Dimensioning of 3G Multi-service Networks

Alexandre Fortin, *Ecole Polytechnique de Montreal, Canada*, Nourredine Hail, Brigitte Jaumard, *Université de Montréal, Canada*

## TS43-4: Using Measurements Extracted

**from GSM/UMTS Networks for 3G Planning and RRM Evaluation**

Oriol Roig Sallent, S. Ruiz, R. Agusti, F. Adelantado, *Universite Politecnica de Catalunya, Spain*, J. Montero, E. Gago, J.S. Miranda, *Teltonica Moviles Espana, Spain*

**• TS44 Bluetooth and Wireless Personal Area Networks**

Wednesday, 19 March 2003  
(9:30 - 12:30) – Room 207

**Session Chair:** Victor Leung, *University of British Columbia, Canada*

**TS44-1: A Two-Phase Scatternet Formation Protocol for Bluetooth Wireless Personal Area Networks**

Yoji Kawamoto, *Sony Corporation, Japan*, Vincent W.S. Wong, Victor C.M. Leung, *University of British Columbia, Canada*

**TS44-2: A Zone Routing Protocol for Bluetooth Scatternets**

Rohit Kapoor, Mario Gerla, *University of California at Los Angeles, USA*

**TS44-3: Open-Loop Power Control Based on Estimations of Packet Error Rate in a Bluetooth Radio**

Eladio C Arvelo, *San Diego Research Center, USA*

**TS44-4: Capacity Assignment on Asymmetric Bluetooth Link**

Ruiduan Luo, Rob M. Edwards, Gordon A. Manson, *The University of Sheffield, United Kingdom*

**TS44-5: A Design Methodology for Wireless Personal Area Networks with Power Efficiency**

Qilian Liang, *University of Texas at Arlington, USA*

**TS44-6: IEEE 802.15.4 Low Rate - Wireless Personal Area Network Coexistence Issues**

Ivan Howitt, *University of North Carolina at Charlotte, USA*, Jose A. Gutierrez, *Eaton Corporation, USA*

**TS44-7: Site Specific WLAN and WPAN Coexistence Evaluation**

Ivan Howitt, *University of North Carolina at Charlotte, USA*, Seung-Yong Ham, *Samsung Electronics Co. Ltd., USA*

**• TS45 Ad hoc Network Organization and Operation I**

Wednesday, 19 March 2003  
(14:00 - 15:30) – Room 207

**Session Chair:** Damla Turgut, *University of Central Florida, USA*

**TS45-1: Optimizing Clustering Algorithm in Mobile Ad hoc Networks Using Simulated Annealing**

Damla Turgut, *University of Central Florida, USA*, Begumhan Turgut, Ramez Elmasri, Than V. Le, *University of Texas at Arlington, USA*

**TS45-2: Topological Performance of**

**Mobile Backbone Based Wireless Ad hoc Networks with Unmanned Vehicles**

Izhak Rubin, Runhe Zhang, Hwei-jiun Ju, *University of California at Los Angeles, USA*

**TS45-3: Passive Duplicate Address Detection in Mobile Ad hoc Networks**

Kilian Alexander Weniger, *Universität Karlsruhe, Germany*

**TS45-4: Reputation Propagation in Mobile Ad hoc Networks**

Yanbin Liu, *The University of Texas at Austin, USA*, Yang Richard Yang, *Yale University, USA*

**• TS46 Ad hoc Network Organization and Operation II**

Wednesday, 19 March 2003  
(16:00 - 17:30) – Room 207

**Session Chair:** Damla Turgut, *University of Central Florida, USA*

**TS46-1: RTS/CTS-Induced Congestion in Ad hoc Wireless LANs**

Saikat Ray, Jeffrey B. Carruthers, David Starobinski, *Boston University, USA*

**TS46-2: A Hybrid Approach for Internet Connectivity for Mobile Ad hoc Networks**

Prashant Ratanchandani, Robin Kravets, *University of Illinois, USA*

**TS46-3: Average Connectivity Properties of Wireless Ad hoc Networks**

Li Shu, Mukund N. Desai, Rami S. Mangoubi, *Charles S. Draper Laboratory, USA*

**TS46-4: Data Flushing Data Transfer Protocol for IEEE 802.11 Ad hoc Wireless Network**

Shiann-Tsong Sheu, Jenhui Chen, Tobias Chen, *Tamkang University, Taiwan*

**• TS47 Call Admission Control**

Wednesday, 19 March 2003  
(9:30 - 12:30) – Room 213

**Session Chair:** Antonio Capone, *Dei-Politecnico di Milano, Italy*

**TS47-1: Call Admission Control in Wideband CDMA Cellular Networks by Using Fuzzy Logic**

Jun Ye, Sherman Shen, Jon W. Mark, *University of Waterloo, Canada*

**TS47-2: Iterative Interference-Increase Estimation (IIE): a CAC Scheme for W-CDMA Systems**

Antonio Capone, Simone Redana, *Politecnico di Milano, Italy*

**TS47-3: Capacity Analysis and Performance Evaluation of Call Admission Control for Multimedia Packet Transmission in UMTS WCDMA System**

Angela Hernández-Solana, Antonio Valdovinos-Bardají, *University of Zaragoza, Spain*, Fernando Casadevall-Palacio, *Polytechnic University of Catalonia, Spain*

**TS47-4: An Advanced Admission Control**

**Algorithm Based on SIR Estimation for CDMA Wireless Systems**

Francesco Chiti, Romano Fantacci, Giada Mennuti, Daniele Tarchi, *Università di Firenze, Italy*

**TS47-5: Traffic Prediction Based Access Control in Wireless CDMA Networks Supporting Integrated Services**

Tejinder S. Randhawa, *New Media Innovation Center, Canada*, Stephen Hardy, *Simon Fraser University, Canada*

**TS47-6: Dynamic Call Admission Control and Resource Reservation with Interference Guard Margin (IGM) for CDMA Systems**

Huan Chen, Sunil Kumar, Chung-Chieh Jay Kuo, *University of Southern California, USA*

**TS47-7: Optimal Medium Access and Admission Controls of Multimedia Traffic Over TD-CDMA Systems**

Oliver T. W. Yu, *University of Illinois at Chicago, USA*

**• TS48 Sensor Network Organization and Operation II**

Wednesday, 19 March 2003  
(14:00 - 15:30) – Room 213

**Session Chair:** Joo Ghee Lim, *Institute for Infocomm Research, Singapore*

**TS48-1: Fault-Tolerant Clustering of Wireless Sensor Networks**

Gaurav Gupta, Mohamed F Younis, *University of Maryland Baltimore County, USA*

**TS48-2: Asymptotic Distribution of the Number of Isolated Nodes in Wireless Ad hoc Networks with Bernoulli Nodes**

Chih-Wei Yi, Peng-Jun Wan, Li Xiang-Yang, Ophir Frieder, *Illinois Institute of Technology, USA*

**TS48-3: A Distributed Self-organization Algorithm for Ad hoc Sensor Networks**

Zhang Jinsong, Kamal Premaratne, *University of Miami, USA*, Peter H. Bauer, *University of Notre Dame, USA*

**TS48-4: A Distributed Self Spreading Algorithm for Mobile Wireless Sensor Networks**

Nojeong Heo, Pramod K. Varshney, *Syracuse University, USA*

**• TS49 Sensor Network Organization and Operation III**

Wednesday, 19 March 2003  
(16:00 - 17:30) – Room 213

**Session Chair:** Joo Ghee Lim, *Institute for Infocomm Research, Singapore*

**TS49-1: Message-Efficient Self-Organization of Wireless Sensor Networks**

Rajesh Krishnan, *BBN Technologies, USA*, David Starobinski, *Boston University, USA*

**TS49-2: Sensor Placement for Effective Coverage and Surveillance in Distributed Sensor Networks**

Santpal Singh Dhillon, Krishnendu Chakrabarty, *Duke University, USA*

**TS49-3: Critical Density Thresholds for Coverage in Wireless Sensor Networks**

Sachin Adlakha, Mani B. Srivastava, *University of California at Los Angeles, USA*

**TS49-4: Optimal Sensor Management Under Energy and Reliability Constraints**

Mark Adam Perillo, Wendi Beth Heinzelman, *University of Rochester, USA*

**• TS65 Scheduling and Buffer Management**

Thursday, 20 March 2003  
(9:30 - 12:30) – Room 211  
Session Chair: TBA

**TS65-1: Delay-Sensitive Packet Scheduling in Wireless Networks**

Peijuan Liu, Randall Berry, Michael Honig, *Northwestern University, USA*

**TS65-2: Performance Tradeoffs in Wireless Scheduling with Flow Aggregation**

Raphael Rom, Hwee Pink Tan, *Israel Institute of Technology, Israel*

**TS65-3: Performance of the Packet Scheduling Schemes in DS/CDMA Systems**

Seokjoo Shin, *Electronics and Telecommunications Research Institute, Korea*, Yeomin Yoon, Kiseon Kim, Kwangju Institute of Science and Technology, *Korea*

**TS65-4 :Scheduling on Uplink of CDMA Packet Data Network with Successive Interference Cancellation**

Krishnan Kumaran, Lijun Qian, *Lucent Technologies, USA*

**TS65-5: Channel Adaptive Fair Queueing for Scheduling Integrated Voice and Data Services in Multicode CDMA Systems**

Li Wang, Ricky Y. K. Kwok, Wing-Cheong Lau, Vincent K.N. Lau, *The University of Hong Kong, Hong Kong*

**TS65-6: Applying Active Queue Management to Link Layer Buffers for Real-time Traffic over Third Generation Wireless Networks**

Jian Chen, Victor Leung, *University of British Columbia, Canada*

**TS65-7: Queue Management for TCP Traffic Over 3G Links**

Mats Sagfors, *Oy LM Ericsson Ab, Finland*, Reiner Ludwig, Michael Meyer, *Ericsson Eurolab Deutschland GmbH, Germany*, Janne Peisa, *Oy LM Ericsson Ab, Finland*

**• TS66 Load Estimation and Balancing**

Thursday, 20 March 2003

(14:00 - 15:30) – Room 211

Session Chair: Laurie Cuthbert, *University of London, United Kingdom*

**TS66-1: Uplink Load Estimation in WCDMA**

Erik Geijer Lundin, Fredrik Gunnarsson, Fredrik Gustafsson, *Linköpings Universitet, Sweden*

**T66-2: Intelligent Cellular Network Load Balancing Using A Cooperative Negotiation Approach**

Lin Du, John Bigham, Laurie Cuthbert, Petrit Nahi, Clive Parini, *Queen Mary University of London, United Kingdom*

**TS66-3: Adaptive Load Balancing with Preemption for Multimedia Cellular Networks**

Sungwook Kim, Pramod K Varshney, *Syracuse University, USA*

**• TS67 Medium Access Control III**

Thursday, 20 March 2003  
(16:00 - 17:30) – Room 211

Session Chair: Wang Yu, *University of California at Santa Cruz, USA*

**TS67-1: A QoS-based Hybrid Multiple Access Transmission Strategy in WCDMA Downlink**

Hsiao-Kuang Wu, Hao-Wei Chang, *National Central Univeristy, Taiwan*, Kevin Chihcheng Hsu, *Vitria Technology Inc., USA*

**TS67-2: An Access Control Scheme for Bursty Traffic in CDMA System**

Zhiui Chen, Ashfaq Khokhar, *University of Illinois at Chicago, USA*

**TS67-3: Effects of Multiple Access Alternatives in Heterogeneous Wireless Networks**

Erik Vanem, Stein Svaet, Frederic Paint, *Telenor R&D, Norway*

**TS67-4: Colorwave: A MAC for RFID Reader Networks**

James Waldrop, Daniel W. Engels, Sanjay E. Sarma, *MIT Auto-ID Center, USA*

**• TS68 Performance Analysis and Modeling I**

Thursday, 20 March 2003  
(9:30 - 12:30) – Room 212

Session Chair: J. Roberto B. de Marca, *Cetuc - PUC/Rio, Brazil*

**TS68-1: Further Simulation Results on Hierarchical Cell Structures**

J. Roberto. de Marca, *Cetuc - PUC/Rio, Brazil*, Ildelano Ferreira e Silva, *Ericsson, Brazil*

**TS68-2: Using Information Theory to Optimize Wireless Networks**

Matthew Christopher Bromberg, *Private Consultant, USA*

**TS68-3: Modeling and Analysis of WAP Performance Over Wireless Links**

Humphrey Rutagemwa, Xuemin Shen, *University of Waterloo, Canada*

**TS68-4: Access Delay Analysis of Adaptive Traffic Load - type Protocols for S-ALOHA and CSMA in EDGE**

Mario E Rivero-Angeles, Domingo Lara-Rodríguez, Felipe Alejandro Cruz-Perez, *CINVESTAV-IPN, Mexico*

**TS68-5: The Effect of Code-Multiplexing on the High Speed Downlink Packet Access (HSDPA) in a WCDMA Network**

Raymond Kwan, *Nokia Research Center, Finland*, Peter H. J. Chong, *Nanyang Technological University, Singapore*, Eeva Poutiainen, Mika Rinne, *Nokia Research Center, Finland*

**TS68-6: Modeling and Prediction of Session Throughput of Constant Bit Rate Streams in Wireless Data Networks**

Liang Cheng, *Lehigh University, USA*, Ivan Marsic, *Rutgers University, USA*

**• TS69 Performance Analysis and Modeling II**

Thursday, 20 March 2003  
(14:00 - 15:30) – Room 212

Session Chair: J. Roberto B. de Marca, *Cetuc - PUC/Rio, Brazil*

**TS69-1: A Multimedia Architecture for 802.11b Networks**

Pascal Berthou, Thierry Gayraud, Olivier Alphand, Michel Diaz, *LAAS-CNRS, France*

**TS69-2: An Experimental Study of Throughput for UDP and VoIP Traffic in IEEE 802.11b Networks**

Sachin Garg, Martin Kappes, *Avaya Labs Research, USA*

**TS69-3: Analysis of the Stability and Performance of Exponential Backoff**

Byung-Jae Kwak, Nah-Oak Song, Leonard E. Miller, *National Institute of Standards and Technology, USA*

**TS69-4: Analyzing Interaction Between Network Protocols, Topology and Traffic in Wireless Radio Networks**

Christopher L Barrett, *Los Alamos National Laboratory, USA*, Martin Drozda, *Slovak Academy of Sciences, Slovakia*, Achla Marathe, Madhav V. Marathe, *Los Alamos National Laboratory, USA*

**• TS70 ARQ and Congestion Control**

Thursday, 20 March 2003  
(16:00 - 17:30) – Room 212

Session Chair: Mehul Motani, *National University of Singapore, Singapore*

**TS70-1: Accurate Approximation of ARQ Packet Delay Statistics Over Markov Channels with Finite Round-trip Delay**

Michele Rossi, Leonardo Badia, Michele Zorzi, *University of Ferrara, Italy*

**TS70-2: On the Delay Statistics of an Aggregate of SR-ARQ Packets Over Markov Channels with Finite Round-trip Delay**

Michele Rossi, Leonardo Badia, Michele

Zorzi, *University of Ferrara, Italy*

**TS70-3: Soft Combining Hybrid ARQ Schemes Application to Reliable Communications within 3G Wireless Networks**

Francesco Chiti, Romano Fantacci, Francesco Versaci, *Università di Firenze, Italy*

**TS70-4: Using Receiver-Based Rate Matching for Congestion Detection in Rate-Based Protocols**

Stephan Baucke, *Ericsson Research, Germany*

**• TS71 Mobility, Multicasting and Security**

Thursday, 20 March 2003  
(9:30 - 12:30) – Room 207

**Session Chair:** Brian Mark, *George Mason University, USA*

**TS71-1: A Mobility Tracking Model for Wireless Ad hoc Networks**

Zainab R. Zaidi, Brian L. Mark, *George Mason University, USA*

**TS71-2: Performance Evaluations of SRMTP for Reliable Multicasting over Satellite Networks**

Chen Wang, Victor C.M. Leung, *University of British Columbia, Canada*

**TS71-3: ARP Considered Harmful: Manycast Transactions in Ad hoc Networks**

Casey Carter, Seung Yi, Robin Kravets, *University of Illinois at Urbana-Champaign, USA*

**TS71-4: Reliable Multicast in Mobile Networks**

Ravi Prakash, *University of Texas at Dallas, USA*, Andre Schiper, *Ecole Polytechnique Federale de Lausanne, Switzerland*, Mansoor Mohsin, *University of Texas at Dallas, USA*

**TS71-5: The Implementation of Multicast in Mobile IP**

Min-hua Ye, Lv-yun Yang, Yu Liu, Hui-min Zhang, *Beijing University of Posts and Telecommunications, China*

**TS71-6: Secure Candidate Access Router Discovery**

Eunsoo Shim, Jens-Peter Redlich, Richard D. Gitlin, *NEC Laboratories America, Inc., USA*

**TS71-7: An Analysis of Bluetooth Security Vulnerabilities**

Creighton T. Hager, Scott F. Midkiff, *Virginia Polytechnic Institute and State University of Maryland, USA*

**• TS72 Developments in Ad hoc Networks**

Thursday, 20 March 2003  
(14:00 - 15:30) – Room 207

**Session Chair:** Samir Das, *State University of New York at Stony Brook, USA*

**TS72-1: Mobility-enhanced Positioning in**

**Ad hoc Networks**

Joo Ghee Lim, S. V. Rao, *Institute for Communications Research, Singapore*

**TS72-2: Dead Reckoning in Mobile Ad hoc Networks**

Aarti Agarwal, *University of Cincinnati, USA*, Samir R. Das, *SUNY at Stony Brook, USA*

**TS72-3: EWANT: The Emulated Wireless Ad hoc Network Testbed**

Sagar Sanghani, Timothy X. Brown, Shweta D Bhandare, Sheetal Kumar R. Doshi, *University of Colorado at Boulder, USA*

**• TS73 Resource Allocation**

Thursday, 20 March 2003  
(16:00 - 17:30) – Room 207

**Session Chair:** A.S. Madhukumar, *Institute for Infocomm Research, Singapore*

**TS73-1: Performance Analysis of Adaptive Resource Allocation Strategies with Service Time Dependence on the Allocated Bandwidth**

Heraclio Heredia-Ureta, Felipe Alejandro Cruz-Perez, *CINVESTAV-IPN, Mexico*, Lauro Ortigoza-Guerrero, *WFI, USA*

**TS73-2: Resource Sharing in Integrated Voice and Data Services**

José Roberto B. de Marca, Talles Alexandre Camilo, *Cetuc - PUC/Rio, Brazil*

**TS73-3: Channel Allocation and Performance Study for the Integrated GSM/GPRS System**

Huei-Wen Ferng, Yi-Chou Tsai, *National Taiwan University of Science and Technology, Taiwan*

**TS73-4: Capacity Enhancement of a Multi-User OFDM System Using Dynamic Frequency Allocation**

Teo Choon Heng Alen, *National University of Singapore, Singapore*, A.S. Madhukumar, Francois Chin, *Institute for Communications Research, Singapore*

**• TS74 Energy Efficiency**

Thursday, 20 March 2003  
(9:30 - 12:30) – Room 213

**Session Chair:** Abbas Jamalipour, *University of Sydney, Australia*

**TS74-1: Energy Balance in Wireless Networks Using Connection Segmentation and Range Control**

Nitin Kumar Singh, Rahul Simha, Bhagi Narahari, *George Washington University, USA*

**TS74-2: Exploiting Macrodiversity in Dense Multihop Networks and Relay Channels**

Matthew C Valenti, *West Virginia University, USA*, Nieyer Correal, *Motorola, USA*

**TS74-3: The Case for a Flexible-Header**

**Protocol in Power Constrained Networks**

Ignacio Solis, Katia Obraczka, *University of California at Santa Cruz, USA*

**TS74-4: Power Efficient Range Assignment in Ad hoc Wireless Networks**

Ernst Althaus, *Max-Planck Institut fur Informatik, Germany*, Gruia Calinescu, *Illinois Institute of Technology, USA*, Ion Mandoiu, *University of California at San Diego, USA*, Sushil Prasad, *Georgia State University, USA*, Nickolay Tchervenski, *Illinois Institute of Technology, USA*, Alexander Zelikovsky, *Georgia State University, USA*

**TS74-5: Energy Consumption Behavior and Performance of Directional Virtual Carrier Sensing Schemes**

Chavalit Srisathapornphat, Chien-Chung Shen, *University of Delaware, USA*

**TS74-6: Power Distribution and Soft Handoff for Downlink Channels in Cellular CDMA Systems**

Dongmei Zhao, *McMaster University, Canada*

**TS74-7: A Novel Broadband Wireless OFDMA Scheme for Downlink in Cellular Communications**

Junqiang Li, Hojin Kim, Yongseok Lee, Youngsoo Kim, *Samsung Advanced Institute of Technology, Korea*

**• TS75 Data Forwarding in Sensor Networks I**

Thursday, 20 March 2003  
(14:00 - 15:30) – Room 213

**Session Chair:** Hongyi Wu, *University of Louisiana, USA*

**TS75-1: Meshed Multipath Routing: an Efficient Strategy in Sensor Networks**

Swades De, Chunming Qiao, *State University of New York at Buffalo, USA*, Hongyi Wu, *University of Louisiana at Fayetteville, USA*

**TS75-2: Trade-Off between Traffic Overhead and Reliability in Multipath Routing for Wireless Sensor Networks**

Stefan Dulman, Tim Nieberg, Jian Wu, Paul Havinga, *University of Twente, The Netherlands*

**TS75-3: Energy Efficient Routing with Guaranteed Delivery in Wireless Sensor Networks**

Di Tian, Nicolas D. Georganas, *University of Ottawa, Canada*

**TS75-4: Energy and Latency Performance of Geographic Random Forwarding for Ad hoc and Sensor Networks**

Michele Zorzi, *University of Ferrara, Italy*, Ramesh Rao, *University of California at San Diego, USA*

**• TS76 Data Forwarding in Sensor Networks II**

Thursday, 20 March 2003  
(16:00 - 17:30) – Room 213

**Session Chair:** Chunming Qiao, *State University of New York at Buffalo, USA*

**TS76-1: VLM2: A Very Lightweight Mobile Multicast System For Wireless Sensor Networks**

Anmol Sheth, Brian D Shucker, Richard Han, *University of Colorado, USA*

**TS76-2: On Tree-Based Convergecasting in Wireless Sensor Networks**

Valliappan Annamali, Sandeep K. S. Gupta, *Arizona State University, USA*, Loren Schwiebert, *Wayne State University, USA*

**TS76-3: An Efficient Clustering-based Heuristic for Data Gathering and Aggregation in Sensor Networks**

Koustuv Dasgupta, Konstantinos Kalpakis, Parag Namjoshi, *University of Maryland Baltimore County, USA*

**TS76-4: Efficient Location Tracking Using Sensor Networks**

H.T. Kung, Dario Vlah, *Harvard University, USA*