



Call for Papers

ACM/Springer Mobile Networks & Applications (MONET)

SPECIAL ISSUE ON

Advances in Green Mobile Networks

http://www.springer.com/engineering/signals/journal/****

Overview

Global warming and climate change have been a growing worldwide concern. Six sources, i.e., transportation, power, buildings, industry, agriculture and forestry, and land use, have been identified as major contributors to the rise of global carbon dioxide (CO₂) emission from 40 giga-tonnes of CO₂ equivalent (Gt CO₂e) in 2002 to an estimate of 52 Gt CO₂e in 2020. The mobile industry is seen as a potential enabler to reduce greenhouse gases contributed by these six sources provided that appropriate measures are implemented. On the other hand, the mobile industry itself will also contribute to CO₂ emission through network operations, mobile equipments, etc. To meet the requirement of low-carbon economy development, it is necessary to reduce the operation expenditure or energy consumption of mobile networks, while maintaining acceptable quality of service. The mobile network equipped the MIMO technology is looked as the basis of future high speed transmission mobile communication system. However, the MIMO technology can greatly improve the transmission rates, but it also enhances the transmission power caused by the multi-antenna system. To solve these problems, the cooperation communication technologies are introduced. Furthermore, some theory research and application technologies, such as energy-efficiency network architecture and protocols, interference modelling, cooperation architecture among base stations, cross-layer energy-efficiency optimization, traffic balance and energy-efficient cooperation transmission should be investigated to satisfy future requirements from green mobile networks.

In this special issue, we solicit research papers on green mobile networks, system architectures, networking & communication protocols, applications, test-bed and prototype, traffic balance and energy-efficient cooperation transmission. Especially, we are interested in the following communication issues:

***energy-efficient network architecture & protocols:** The traditional mobile network architecture and protocols focus on the simple and high performance in the transmission, however, the energy consumption become more and more important for the green mobile network operators. In this case, the green mobile network operators have great interested in the energy efficiency network architecture & protocols. Therefore, the design of energy efficiency network architecture & protocols is the key problem for green mobile network.

***MIMO energy-efficient management:** Cooperative multi-antenna, also known as virtual MIMO or distributed MIMO, allows a wireless network to coordinate among distributed antennas and achieve considerable performance gains. But how to improve the energy efficiency in the distributed antennas constrained by the given QoS requirement is a great challenge.

***Multi-base-station cooperative energy-efficient mechanism:** In the multi-base-station system, every base-station has different traffic load characteristic, for example the central city and suburb cells; even for the same base-station, the day and night also has the different traffic load. If the same base-station management for all base-stations, the energy is wasted for low traffic load base-station, and the congestion is caused for heavy traffic load base-station. So it is important to further explore the energy efficiency multi-base-station management in green mobile networks.

The objective of this special issue is to bring together state-of-the-art research contributions, tutorials, and position papers that address these key aspects of Green Mobile Networks. Original papers describing completed and unpublished work not currently under review by any other journal/magazine/conference/special issue are solicited.

Topics

Topics of interest include, but are not limited to, the following scope:

<ul style="list-style-type: none"> - Scalable and flexible energy efficiency mobile network architectures, deployments, and applications - MIMO system for power controlling and management - Protocols for multi-cells cooperation management and control - Energy-efficient traffic balance, cooperation and management - Scalability and mobility issues in energy efficiency cross-layer design - Interference modelling between the multi-cells MIMO base stations - Channel modelling in the interference limitation system - Experimental and test bed studies for energy efficiency mobile networks, simulation tools - Joint energy efficiency pre-coding at MIMO base stations - Energy-efficient source coding - MAC Protocols and QoS Designing for mobile networks - Capacity modeling, performance analysis, and theoretical analysis - Topology control and synchronisation protocols for energy saving - Virtual MIMO networks and physical layer technologies - Distributed energy efficiency resource management techniques 	<ul style="list-style-type: none"> - Standards for green mobile network protocols and integration with heterogeneous networks - Advanced algorithms for green mobile network, e.g., routing, data processing, packet scheduling - Power efficient issues, e.g., low power RF transceivers, energy scavenging, miniaturization, system integration - Energy-efficient transmission technologies based on the cooperation communication - Mobile and multimedia supported green mobile networks - Energy-efficient switch and base station architectures - Relationships between the energy-efficient and frequency efficient in MIMO system - Energy-efficient transmission technologies based on the cooperation communication - Data stream processing in green mobile networks - Adaptability and stability of green mobile networks - Transactions and workflows in green mobile networks - Information support, security, privacy, and fault tolerance issues for green mobile networks
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Important Dates

- **Manuscript submission deadline:** July 20, 2010
- Notification of acceptance: Oct. 20, 2010
- Submission of final revised paper: Dec. 20, 2010
- Publication of special issue: 1rd or 2th Quarter, 2011 (Tentative)

Submission Procedure

Authors should follow the MONET Journal manuscript format at the journal site: <http://www.springerlink.com/content/101750/>. Manuscripts should be submitted on line through <http://www.editorialmanager.com/mone/>. A copy of the manuscript should also be emailed to the following email: vasilako@ath.forthnet.gr. The "Subject field" of the email must contain "MONET UBSN Paper -".

Guest Editors

Athanasios, V. Vasilakos (University of Western Macedonia, Greece, vasilako@ath.forthnet.gr)

Min Chen (Seoul National University, Korea, minchen@ieee.org)

David Grace (University of York, dg@ohm.york.ac.uk)

Short Bios:

Athanasios V. Vasilakos is currently a Professor with the Department of Computer and Telecommunications Engineering, University of Western Macedonia, Kozani, Greece, and a Visiting Professor with the Graduate Program of the Department of Electrical and Computer Engineering, National Technical University of Athens (NTUA), Athens, Greece. He has authored or coauthored over 200 technical papers in major international journals and conferences. He is author/coauthor of five books and 20 book chapters in the areas of communications. Prof. Vasilakos has served as General Chair, Technical Program Committee Chair, and symposium Chair for many international conferences. He is Chairman of the Intelligent Systems Applications Technical Committee (ISATC) of the IEEE Computational Intelligence Society (CIS). He served or is serving as an Editor or/and Guest Editor for many technical journals, such as the IEEE TRANSACTIONS ON SYSTEMS, MAN, AND CYBERNETICS—PART B: CYBERNETICS, the IEEE TRANSACTIONS ON INFORMATION TECHNOLOGY IN BIOMEDICINE, the IEEE TRANSACTIONS ON WIRELESS COMMUNICATIONS, the IEEE Communications Magazine, and the ACM Transactions on Autonomous and Adaptive Systems. He is founding Editor-in-Chief of the International Journal of Adaptive and Autonomous Communications Systems (IJAACS, <http://www.inderscience.com/ijaacs>) and the International Journal of Arts and Technology (IJART, <http://www.inderscience.com/ijart>).

Min Chen is an assistant professor in School of Computer Science and Engineering at Seoul National University (SNU). Before joining SNU, he was a Post-Doctoral Fellow and Research Associate at University of British Columbia for three and half years. He received the Best Paper Runner-up Award from QShine 2008. He was interviewed by Chinese Canadian Times where he appeared on the celebrity column in 2007. He has published more than 70 technical papers. Dr. Chen is the author of OPNET Network Simulation (Tsinghua University Press, 2004). He serves as TPC co-chair and web chair for BodyNets-2010, workshop co-chair for CHINACOM 2010. He is the co-chair of MMASN-09 and general co-chair of UBSN-10. He was the TPC chair of ASIT-09, TPC co-chair of PCSI-09, publicity co-chair of PICom-09. He is workshop co-chair for EMC 2010. He is co-chair for ASIT 2010. He served as guest editors for several journals, such as ACM MONET, IJCS, IJSNET. He is a managing editor for IJAACS, and editor for WCMC, TIS and IJSNET. He is in editorial board for Wiley SCN, JIT. He is an IEEE Senior Member.

David Grace is Head of the Communications Research Group within the Department of Electronics at the University of York, and also Co-Director of the York – Zhejiang Lab on Cognitive Radio and Green Communications. He received his DPhil in 1999, with a thesis entitled 'Distributed Dynamic Channel Assignment for the Wireless Environment'. Current research interests include cognitive radio (CR), particularly applying distributed artificial intelligence to spectrum assignment, cognitive networking (CN), and 'green' communications. Between 2003-7 he was the technical lead for the 14-partner FP6 CAPANINA project. He is currently Chair of the Worldwide Universities Network Cognitive Communications Consortium, which has 60+ member organisations worldwide. He is author of 150+ papers, and member of the IEEE Committee on Cognitive Networks and COST IC0902. Formerly he was COST 297 WG1 chair on radio communications for High Altitude Platforms (HAPs). In 2000, he jointly founded SkyLARC Technologies Ltd, and was one of its directors.