Introduction of TSCGCC to IEEE P1900.7 Committee

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Chair, TSCGCC, IEEE Communications Society
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Scope: Green Communications and Computing (1)

- Green wireline/wired communications: Green wired access networks, Green optical communications and networking, Green Internet backbone networks, Green wireline communications with QoS constraints, Green service provisioning and content distribution,
- Green wireless communications: Green wireless cellular communications and networking, Green fixed wireless access communications and networking, Green cognitive radio, Green adhoc and sensor communications and networking, QoS provisioning and resource management in green wireless networks,
- Green computing networks (such as Green cloud computing, Green data centers)
- Green electricity transmission and distribution systems

Scope: Green Communications and Computing (2)

- Electromagnetic pollution mitigation
- Software architecture for green communications and computing
- Hardware architecture and chip designs for green communications and computing
- Relevant areas
  1. Economic concerns for green topics
  2. Green computers, servers, and associated subsystems
  3. Green air conditioning
  4. ...

Establishment of TSCGCC

- In Dec 2011, TSCGCC (Technical Subcommittee on Green Communications and Computing), IEEE Communications Society was officially approved and initially established
- Official mailing list: tcgcc@comsoc.org
- Official web link:
  `http://www.comsoc.org/about/committees/emerging#gcc`
  `https://sites.google.com/site/gcccomsoc/`

TSCGCC members and communities

- The number of TSCGCC members (internationally):
  1. About 50 in Dec. 2011,
  2. About 260 On June 6, 2012,
  3. 392 on Nov. 17, 2012,
- Two relevant online communities
  1. IEEE Green Communications and Computing (GCC) Group at Linkedin
     - `http://www.linkedin.com/groups?trk=anet_ug_hm&gid=4233179&home=`
     - The number of group members: 440 on Nov. 17, 2012
  2. TSCGCC Discussion Group at IEEE ComSoc web
     - `http://community.comsoc.org/groups/tscgcc`
     - The number of group members: 50 on Nov. 17, 2012

Executive Committee of TSCGCC

- Chair, Jinsong Wu, Bell Laboratories, Shanghai, China
- Vice-Chair, Rod Tucker, the University of Melbourne, Australia
- Vice-Chair, Stephen (Steve) McLaughlin, Heriot Watt University, Edinburgh, UK
- Vice-Chair, Yu Cheng, Illinois Institute of Technology, Chicago, Illinois, USA
- Industrial Liaison: Chih-Lin I, China Mobile Communications Corporation, China
- Industrial Liaison: Daniel C. Kilper, Bell Laboratories, USA
- Industrial Liaison: Juergen Quittek, NEC Europe in Heidelberg, Germany
- Advisor: Tariq Durrani, University of Strathclyde, UK
- Advisor: John Cioffi, Stanford University, USA
- Advisor: Gee Rittenhouse, Alcatel-Lucent, USA
- Advisor: Zhisheng Niu, Tsinghua University, Beijing, China
- Advisor: Leonid Kazovsky, Stanford University, USA

Relevant Special Interest Groups (SIGs) in TSCGCC

- SIG on Green Cellular Networks (SIGGCN)
  - Chair: Teng Joon Lim, National University of Singapore, Singapore
  - Vice-Chair: Tony Q. S. Quek, Singapore University of Technology and Design, Singapore
  - Vice-Chair: Marios Kountouris, Supelec, France
  - Vice-Chair: Shuguang Cui, Texas A & M University, USA
- SIG on Green Cognitive Communications and Computing Networks (SIGGCCCN)
  - Chair: Ekram Hossain, Dept. of ECE, University of Manitoba, Canada
  - Vice-Chair: David Grace, The University of York, UK
  - Vice-Chair: Liqun Fu, The Chinese University of Hong Kong, Hong Kong
  - Advisor: Ying Chang Liang, Institute for Infocomm Research (IR), ASTAR, Singapore

SIGGCCCN (1)

- Motivation and Focus: will focus on improving the energy efficiency of cognitive communications and computing networks. Cognitive networks with higher spectrum efficiency are usually achieved at the expense of higher energy consumption. In recent years, energy and power efficient designs of communication networks have become more crucial because of the steadily rising energy cost and environmental concerns. Thus, there is an urgent need to address the energy efficiency in cognitive networks, which will be the focus of this SIG.

  This SIG will concentrate on the energy efficient design for cognitive communications and computing networks. The goal is to establish a foundation for energy-efficient cognitive communications and computing network design with multiple objectives, such as high energy and spectrum efficiency, fairness, simplicity, robust convergence, and scalability.

SIGGCCCN (2)

- Topics including but not limited to the following:
  - Network architecture design for energy efficient cognitive networks
  - Energy-efficient spectrum sensing techniques for cognitive networks.
  - Economic models and game theory for energy efficient cognitive networks
  - Energy-efficient physical (PHY) layer design of cognitive networks
  - Energy-efficient medium access control (MAC) for cognitive networks
  - Cross-layer optimization for energy efficient cognitive networks
  - Cooperative techniques for energy-efficient cognitive networks
  - Energy-efficient resource management for cognitive networks
  - Multiuser/single-user MIMO techniques for energy-efficient cognitive networks
  - Signal processing challenges for energy-efficient cognitive networks
  - Energy-efficiency evaluation and measuring techniques for cognitive networks.

IEEE P1900.7

- The IEEE 1900.7 WG is inviting all interested parties (not limited to the WG voting members) to contribute to the draft standard "RADIO INTERFACE FOR WHITE SPACE DYNAMIC SPECTRUM ACCESS RADIO SYSTEMS SUPPORTING FIXED AND MOBILE OPERATION"
- Topics might be relevant in the Call for Contributions:
  - Management model (first priority)
  - Topics related to MAC sublayer (first priority)
  - Traffic specific convergence sublayer (second priority)
  - Resource allocation and QoS mechanisms (first priority)
  - Transmit power control (first priority)
  - ARQ and support for HARQ (second priority)
  - Power saving procedures (first priority)

Conferences under Technical co-sponsorship of TSCGCC (1)

- IEEE ICC 2014 Selected Areas in Communications Symposium, Track on Green Communication and Computing
- ICNC 2013 International Workshop on Converged Networks, Technologies and Applications (CNTA 2013)
- IEEE WCNC 2013 Panel on Green Cellular Networks
- IEEE ICC 2013 Panel on Green Communications
- IEEE ICC 2013 Selected Areas in Communications Symposium, Track on Green Networks and Communication Systems
- IEEE CCNC 2013 Green Communications and Computations Track
- 2013 IEEE Online Conference on Green Communications
- IEEE CloudCom 2012
- IEEE CloudNet 2012

Conferences under Technical co-sponsorship of TSCGCC (2)

- IEEE GLOBECOM 2012 Selected Areas in Communications Symposium, Track on Green Communication Systems and Networks
- IEEE GLOBECOM 2012 IEEE Workshop on Smart Grid Communications: Design for Performance
- IEEE GLOBECOM 2012 WORKSHOP ON Wireless Cloud Computing and Networking
- IEEE INFOCOM/ICC/GLOBECOM 2012 Panel on Green Communications and Computing
- 2012 IEEE Online Conference on Green Communications
- IEEE International Conference on Communications in China (ICCC) 2012 (the theme of ICCC 2012 is Communications for a Sustainable Future))
- Asia-Pacific Conference on Communications (APCC) 2012 (The theme of APCC 2012 is "Green and Smart Communications for IT Innovation")

Conferences in-cooperation with TSCGCC (1)

- IEEE ICC 2012 Workshop Green Communications and Networking
- e-Energy 2012- International Conference on Future Energy Systems
- IEEE Symposium on Computers and Communications (ISCC) Workshop on Management of Cloud Systems (MoCS 2012)
- International Green Computing Conference 2012 (IGCC 2012) Workshop on Green Cloud Computing (GreenCloud 2012)
- IEEE ICCC 2012 Workshop on Smart and Green Communications & Networks (SGCNet)
- IEEE GLOBECOM 2O12 International Workshop on Cloud Base-Station and Large-Scale Cooperative Communications
- COST IC1004 + iPLAN Joint Workshop on Small Cell Cooperative Communications

Conferences in-cooperation with TSCGCC (2)

- SustainIT 2012 - The Second IFIP Conference on Sustainable Internet and ICT for Sustainability
- International Workshop on Algorithms and Concepts for Networked Sensing Systems Powered by Energy Harvesters (EnHaNSS) 2012
- ISCIT 2012 Workshop on QoE in Energy-Efficient Networks
- IEEE, IET International Symposium on Communication Systems, Networks, and Digital Signal Processing 2012 Special Session on Emerging Technologies for Secure and Energy-Efficient Optical Communication Networks
- SoftCOM 2012 the 3rd Symposium on Green Networking and Computing

Journal under technical co-sponsorship of TSCGCC

- Special Issue on Wireless Sensor Networks with Environmental Energy Harvesting, International Journal of Sensor Networks, Deadline: Oct. 2012
- Special Issue on Green Cognitive and Cooperative Communication and Networking, ACM/Springer Mobile Networks and Applications (MONET), Deadline: Oct. 2012
- Special Issue on Mobile Cloud Computing, IEEE Wireless Communications Magazine, Deadline: November 1, 2012
- Special Issue on Integration of IoT with Future Internet, Journal of Internet Technology, Deadline: Dec. 2012

Journal in-cooperation with TSCGCC (1)

- Special issue on Economics of Communication Networks and Systems, IEEE Journal on Selected Areas in Communications, Deadline: Dec. 2011
- Feature Topic on Communications Network Economics, IEEE Communications Magazine, Deadline: Mar. 2012
- Special Issue on Smart Grid Communications Systems, IEEE Systems Journal, Deadline: Apr. 2012
- Special issue on Advancing Green IT, IEEE IT Professional, Deadline: July 2012

Journal in-cooperation with TSCGCC (2)

- EURASIP Journal on Wireless Communications and Networking Special Issue on Green Radio
- Special issue on Green Networking and Computing, Journal of High Speed Networks, Deadline: May 2012
- Special issue on Green networking and computing, International Journal of Business Data Communications and Networking (IJBDCN), Deadline: Nov 2012

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Thank you for your attention!

Welcome questions!