IEEETCCN Meeting at Globecom'11 (Houston)

Report on the Technical Committee on Cognitive Networks (TCCN) of IEEE Communications Society (ComSoc)

Honggang ZHANG
IEEE TCCN Chair
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IEEE GLOBECOM 2011
GLOBAL COMMUNICATIONS CONFERENCE,
EXHIBITION & INDUSTRY FORUM

HOUSTON, TEXAS, USA

浙江大学信息与电子工程学系
Department of Information Science & Electronic Engineering,Zhejiang University

TCCN Meeting Agenda

1. **Welcome & Introduction**
2. **Approval of the Agenda**
3. **Approval of TCCN Meeting Minutes (ICC'11@Kyoto)**
4. **Report on status of TCCN (Honggang Zhang)**
5. **Reports on Publications (IEEE JSAC cognitive radio series) – Ying-Chang Liang**
6. **Report on WUN CogCom (David Grace)**
7. **Report on European COST IC0905 (Oliver Holland)**
8. **Report on IEEE DySPAN Standard Activities (Oliver Holland)**
9. **Report on Conferences (ICC 2012, DySPAN 2012, ICC 2013, etc.) - Mouli**
10. **Discussion on TCCN Best Paper Award**
11. **Next TCCN Meeting (ICC2012@Ottawa, Canada)**
12. **Other business**
13. **Adjourn**

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IEEE TCCN: Scope, Vision & Mission

➢ The goal of **IEEE TCCN** is to provide a platform for its members in particular, and the *cognitive networking* research, development, policy making and standardization community in general, to interact and exchange technical ideas to identify major challenges and also drive solutions in the development of *cognitive networking technologies*.

➢ The technical issues addressed by the committee will include spectrum agile/dynamic spectrum access networks, related issues from PHY to application layers, security issues, policy issues (e.g., spectrum policy reform by U.S., Canada and European Union), implementation technologies (e.g., software radio, middleware), economic considerations and standardization activities.

IEEE TCCN Membership Growth

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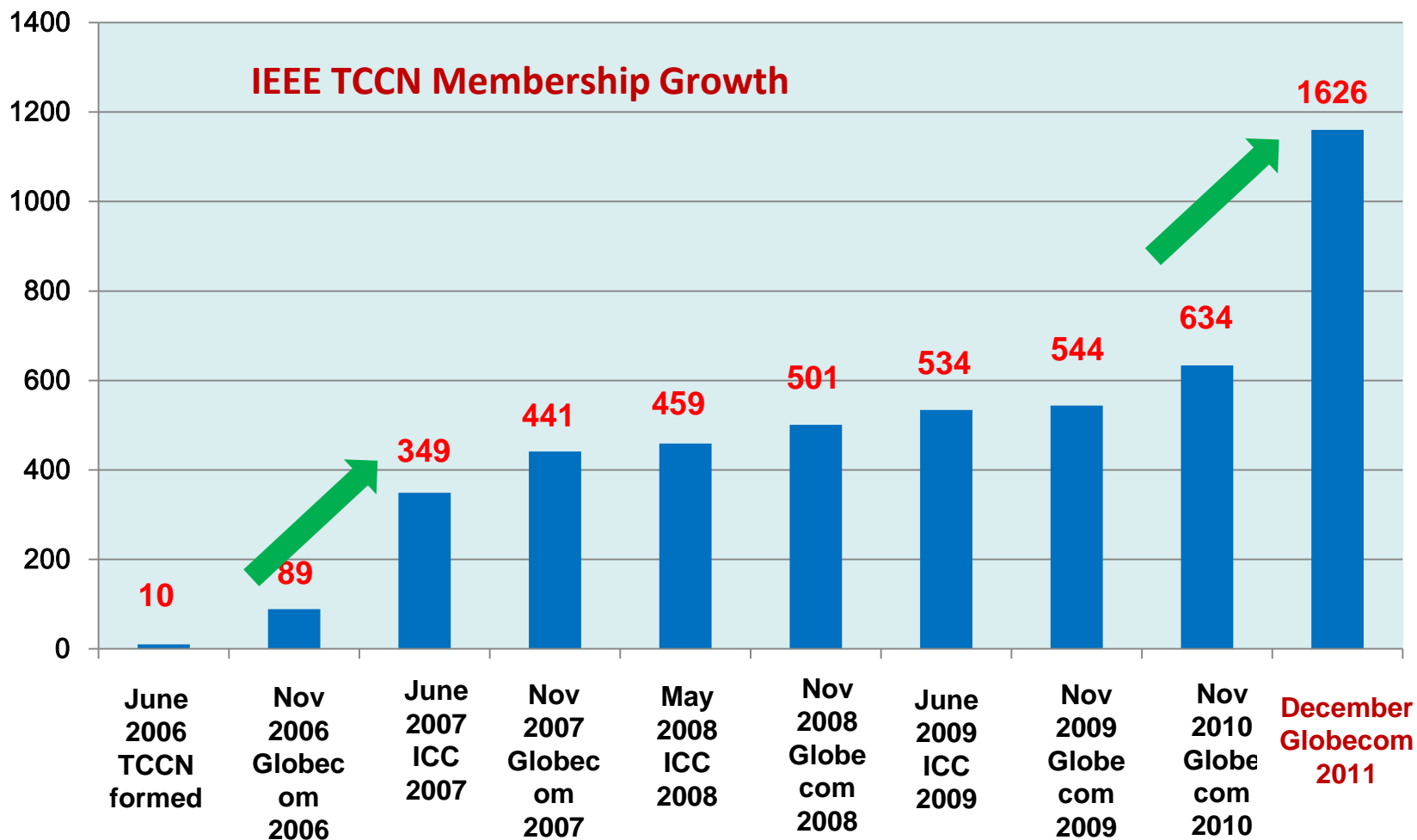
Key TCCN Activities

- **IEEE ComSoc Flagship Conference: IEEE ICC series**

  - Selected Areas in Communications Symposium (**ICC 2009, 2010**)

  - Cognitive Radio and Networks Symposium (**ICC 2011, 2012**, etc.)

- **IEEE ComSoc Flagship Conference: IEEE Globecom series**

  - Selected Areas in Communications Symposium (**Globecom 2008, 2009, 2010**)

  - Cognitive Radio Networks Symposium (**Globecom 2011, 2012**, etc.)

- **IEEE DySPAN series**

Report on ICC 2012
(prepared by Prof. R. Chandramouli)

- TCCN sponsored Cognitive Radio and Networks Symposium
- Four symposium chairs (1 from Canada, 2 from U.S. and 1 from India)
  - ✓ Chair: **Ekram Hossain**, University of Manitoba, Canada
  - ✓ Co-chair: **Rajarathnam Chandramouli**, Stevens Institute of Technology, USA
  - ✓ Co-chair: **Rajeev Shorey**, NIIT University, India
  - ✓ Co-chair: **Charles Clancy**, Lab for Telecommunication Systems, USA
- **209** papers received
- Top countries (%) from where submissions have been received:
  - ✓ P.R. China 24.5%
  - ✓ USA 21.7%
  - ✓ Canada 12.3%
  - ✓ U.K. 6.7%
  - ✓ Iran 3.3%
  - ✓ Australia 3%
  - ✓ India 2.6%

• Challenges and issues in designing cognitive radios and networks	82
• Architectures and building blocks of cognitive radio networks	23
• Spectrum sensing, measurements and statistical modeling of spectrum usage	82
• Waveform design, modulation, interference aggregation, mitigation for cognitive radio	14
• Distributed cooperative spectrum sensing and multiuser access	30
Interference and channel estimation in cognitive radio networks	31
• Cognitive medium access control, interference management, handoff and routing protocols	48
• Resource allocation for multiple-input multiple-output (MIMO)-based cognitive radio communications	16
• Distributed adaptation and optimization methods	40

Report on ICC 2012 (cont.)
(prepared by Prof. R. Chandramouli)

• Energy-efficient cognitive radio communications and networking	37
Cognitive machine learning techniques	18
• Self-configuration, interoperability and co-existence issues	13
• Dynamic spectrum sharing in unlicensed bands	51
• Security and robustness of cognitive spectrum-agile networks	5
• Cross-layer optimization of cognitive radio systems	29
• Applications and services based on cognitive radio networks	13
Multi-hop cognitive radio networks	25
• Economic aspects of spectrum sharing (e.g., pricing, auction) in cognitive radio networks	15
• Regulatory policies and their interactions with communications and networking	3
• Cognitive radio standards, test-beds, simulation tools, and hardware prototypes	10

Thank You !

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