

***IEICE Communications Society* GLOBAL NEWSLETTER Vol. 16**

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Annual Report of Technical Committee on Information Networks

Koichi Takasugi and Masato Matsuo, NTT Corporation

1. Introduction

The IN (technical committee on Information Networks) [1] is a technical committee of the Communications Society of the IEICE. The IN addresses a broad spectrum of issues associated with information networks and provides a forum for researchers and engineers to discuss research and development topics. The chairman is Professor Masayuki Murata of Osaka University. The vice chairman is Dr. Hiroshi Saito of NTT Corporation. The secretaries are Mr. Masato Matsuo of NTT Corporation and Dr. Kiyohito Yoshihara of KDDI R&D Laboratories Inc. The assistant secretaries are Dr. Noriaki Kamiyama and Dr. Koichi Takasugi of NTT Corporation.

2. IN Activities

The IN holds two-day technical meetings ten times a year, a workshop every year, and an international conference (APSITT) [2] every two years. Many domestic researchers participate in the meetings and report the latest results of their research. The numbers of reports and participants are the largest of all IEICE technical committees. Some meetings are co-organized with other technical committees. The sites and main topics of the meetings are shown in Table 1. Although oral presentation is usual, a poster presentation (interactive session) is planned as a new trial. Sixteen researchers in three meetings presented their papers in interactive sessions during this fiscal year. This activity was favorably received because discussions were facilitated. The discussion in an interactive session is shown in Fig. 1. Each report is summarized in a paper and published as a Technical Report of the IEICE. Authors of selected papers have received Information Networks Research Awards, whose ceremony is held in



Fig. 1 . Interactive Session

March every year. This year, the following 3 excellent papers were chosen from 212 papers.

- Yohei Hasegawa, Masayoshi Kobayashi, and Tutomu Murase, “Network Topology Dependency Evaluation of Test Flow Set Selection for QoS Degradation Locating.”
- Hideyuki Koto, Hiroki Furuya, and Hajime Nakamura, “Experimental Study of Adaptive Transmission Restriction Method for Massive and Intensive Traffic in Communication-Broadcasting Integrated Services.”
- Hajime Karasawa, Shinsuke Terada, Takumi Miyoshi, Kyoko Yamori, and Yoshiaki Tanaka, “Characteristic Analysis of Many-to-Many Multicast Routing Trees Using Multiple Linear Regression Analysis.”

The technical committee planned the IEICE Transactions on Communications B special session regarding network technologies for overlay networks that are used for new services such as P2P, IP-VPN, and CDN. The edition of the special session will be published in September 2006.

References

- [1] <http://www.ieice.org/cs/in/jpn/>
 [2] N. Kamiyama et al., “Report on 6th Asia-Pacific Symposium on Information and Telecommunication Technologies,” Global Newsletter, Vol. 15, pp. 11 - 12, 2006.

Table 1: Technical meeting schedule

Date	Place	Topics	Num. of reports each day	Num. of participants each day
May 26 - 27	Kikai-Shinko-Kaikan Bldg.(Tokyo)	Wireless networks Ad hoc network , Sensor networks, and Ubiquitous networks	8, 14	51, 56
Jun. 16 - 17	Aichi Prefecture Univ. (Nagoya)	Access Networks, Home Networks, IPv6, Quality Controls in the Internet	8, 7	43, 29
Jul. 14 - 15	Hokkaido University (Sapporo)	Broadband Service, Overlay Networking	11, 20	40, 45
Sep. 15 - 16	Tohoku Univ.(Sendai)	Active Networks, IP-VPN, Network Security, High Speed Networks, P2P Communication, Network Software	19, 31	77, 79
Oct. 13 - 14	Keio Univ. (Yagami)	Architecture/OAM/Control Protocol of IP backbone networks and Photonic networks.	11, 10	67, 76
Nov. 17- 18	Fukuoka Institute of Technology	Standardization (DLNA etc), Mobile networks, Information appliance networks	12, 13	44, 25
Dec. 15 - 16	Hiroshima City Univ.	Performance evaluation of Internet	7, 12	43, 43
Jan. 19 - 20	Kyoto Univ.	Office applications, networking and management based on Web services	15, 17	64, 49
Feb. 16 - 17	Kochi Univ. of Technology	New services on Internet	9, 4	27, 23
Mar. 2 - 3	Rizzan Sea-Park Hotel (Okinawa)	IN/NS technical meeting and workshop	45, 95	134, 151

Recent trend of the Technical Committee on Photonic Network (IEICE PN)

Satoru OKAMOTO, Keio University
Secretary, IEICE PN



1. Introduction

The technical committee on Photonic Network (PN) was born at 2003. It was integrated with two technical groups of IEICE: the technical group on Photonic-Network base Internet (PNI) and the technical group on Photonic Switching (PS).

By this integration, the research area will be expanded from a photonic switching to a photonic network, and the technical field that PN covers was extend from devices to systems, networks, networking, and the application.

In the outline of the PN technical group establishment statement, the activation of the research by the discussion of the researcher in a different field is a mission of PN.

The analysis of data on whether activation is really performed was announced in the Photonic Network WorkShop held in August, 2005. In this paper, a part of data in that as a recent activity trend of PN will be introduced.

2. Transition of conference participants

Figure 1 shows number of total participation and number (/day) of average participation from April, 1998 to May, 2005 to conferences (PS and PN).

The number of average participants increases rapidly from 60 people to 90 people from 2000 to 2002. This period is called an optical bubble. A new research area of the network control technology, for example, GMPLS appeared. After burst of the economic bubble, it has settled down after same 65 degrees of participants before the bubble.

It is understood that the number of conferences holding in year has been held by the pace from 5 times to 7 times and every almost two months.

3. Transition of contributed papers

Until fiscal year 2004, a lot of co-sponsoring conferences with other technical area's technical groups had been held. Therefore, there were a lot of paper submissions by all co-sponsored technical groups. From fiscal year 2005, the number of contributed papers to PN becomes clear, because of only co-locating conferences rules.

To analyze transition of the number of contributed papers, the number of papers normalized by dividing the total number of papers by the number of co-sponsoring technical groups was used.

Figure 2 shows the total paper numbers and the normalized paper numbers, and both of averaged numbers. It can be understood that activities of the paper numbers are keeping about ten papers per a conference after fiscal year 2001.

4. Classification of research theme and contributor's affiliation

Total 238 papers in 2005/May were contributed after the PN technical group started. They were classified based on a technical theme. As shown in Fig.3, it became optical devices (28%), optical networks (16%), optical signal processing (12%), Internet area (11%), GMPLS networks (8%), optical packet and burst switching (6%), optical communication systems (6%), node systems (5%), and applications (4%).

In contributor's affiliation basis, as shown in Fig. 4, it was university (50%), enterprise (39%), and research Institute (11%).

5. Conclusions

As a summary, members of the PN technical group agreed a hypothesis of activities trend. They are

- Contributions related to the node systems are decreasing.
- Device related activities are steady.
- Activities of optical burst and optical packet switching are increasing.
- GMPLS network related activities become decreasing.
- The application area could not be taken enough to the PN community.

Transition of conference participants

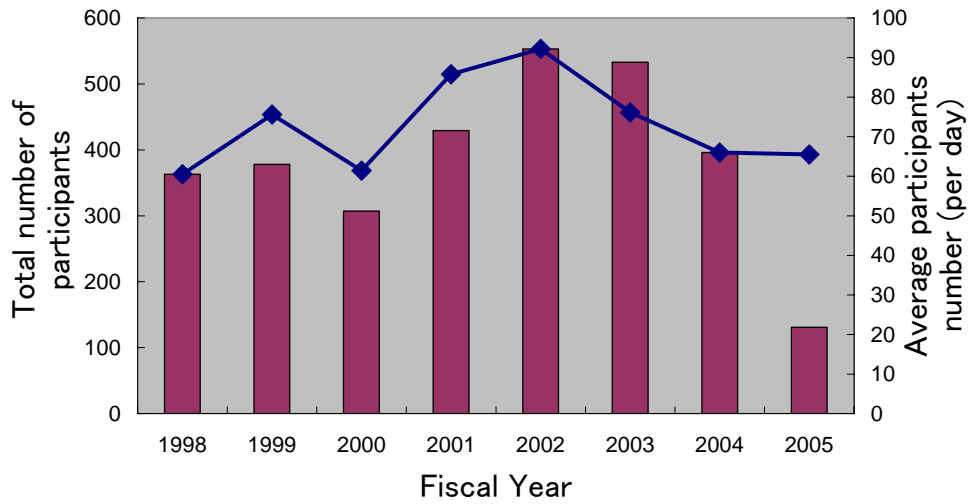


Figure 1. Transition of conference participants of PS and PN from 1998 to 2005.

Transition of contributed papers

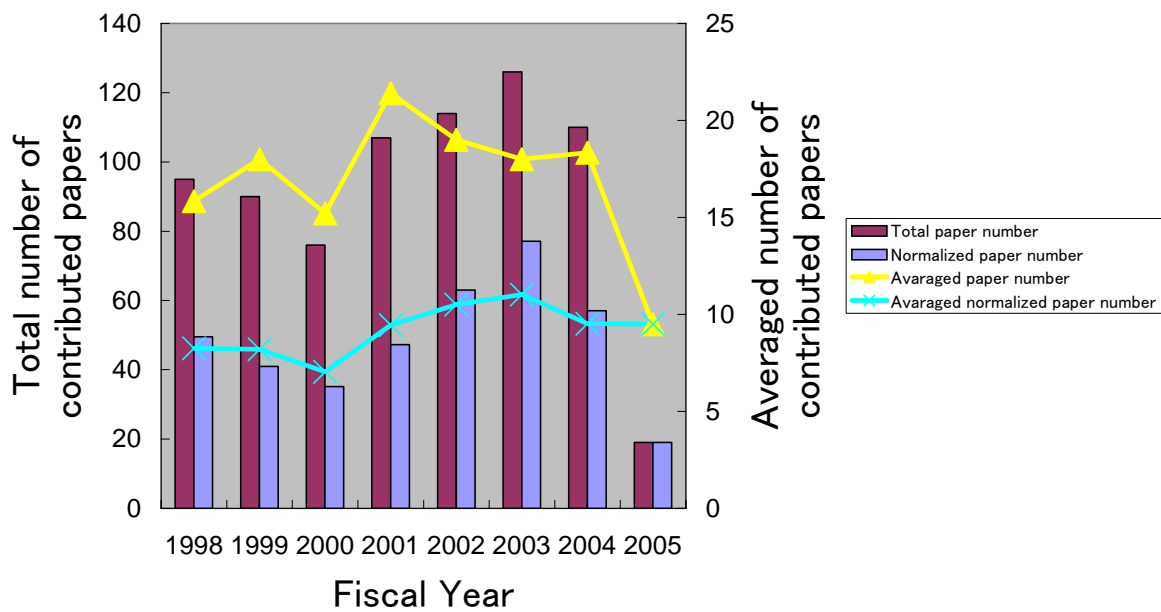


Figure 2. Transition of contributed papers from 1998 to 2005

Classification of research theme

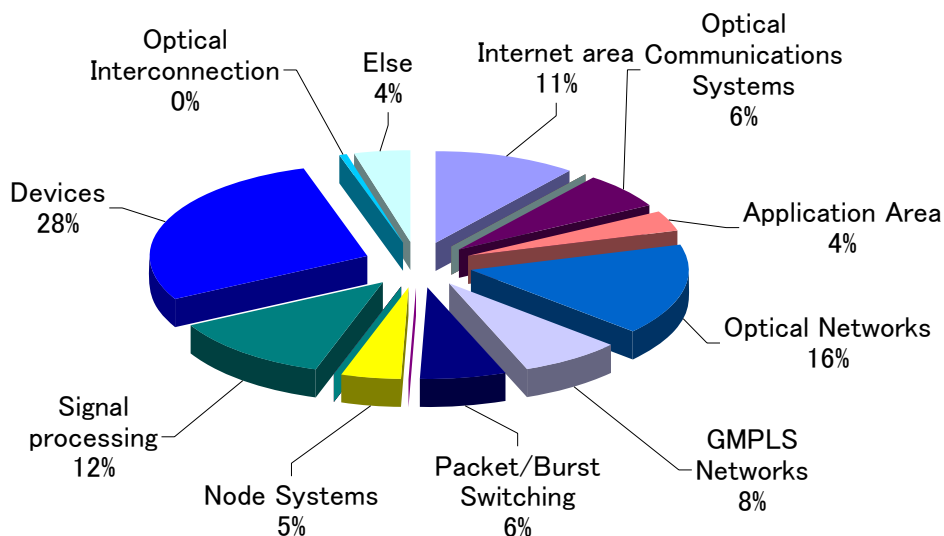


Figure 3. Classification of research theme from 2003 to 2005.

Contributor's Affiliation

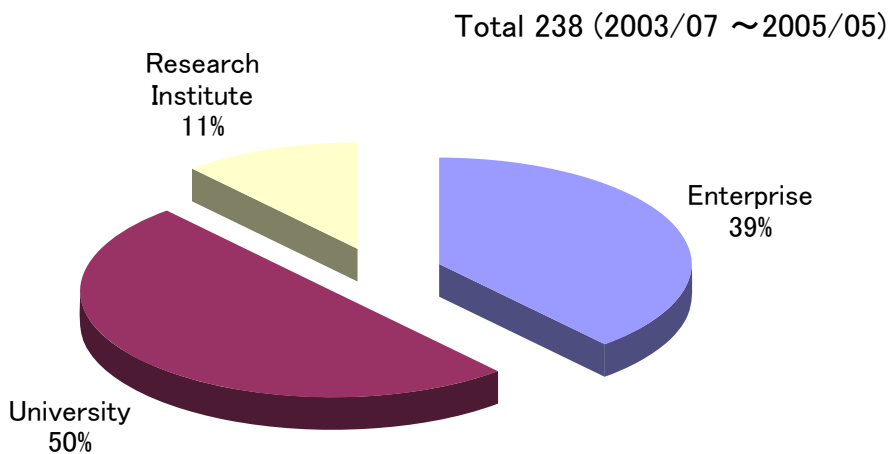


Figure 4. Classification of contributor's affiliations from 2003 to 2005.

Technical Committee on Software Radio *Kickoff*

Kei Sakaguchi, Takeo Fujii, Hiroshi Yoshida, Jun-ichi Takada, Hiroshi Harada
Secretary of Technical Committee on Software Radio

1. Introduction

Technical Committee on Software Radio (TCSR) has promoted research on software defined radio, cognitive radio, and their related technologies since 1999. In May 2005 TCSR was raised to the 1st class technical committee of IEICE and the organization has been changed. The organizers of TCSR are shown as follows:

- Chair Hiroshi Harada (NICT)
- Vice Chair Kazuhiro Uehara (NTT),
Yukitoshi Sanada (Keio Univ.)
- Secretary Junichi Takada (Tokyo Inst. of Tech.)
Hiroshi Yoshida (Toshiba Corp.)
- Assistant Kei Sakaguchi (Tokyo Inst. of Tech.)
Takeo Fujii (Univ. of Electro-Commun.)

TCSR organized four technical conferences and several sessions in fiscal year 2005. This newsletter summarizes the latest activities of TCSR.

2. The 1st Conference (Memorial Conference on Renewal) in May 2005

- ✓ Date: May 11-12, 2005
- ✓ Topics: Memorial conference on renewal
- ✓ Venue: Yokohama National University
- ✓ # of presentations: 21 (panel: 7, invited: 7, regular: 7)
- ✓ # of participants: 200

IEICE Technical Committee on Software Radio (TCSR) was renewed on April 2005 after six-year activity as the 2nd class technical committee. In memory of this renewal, “Memorial Conference on Renewal of IEICE Technical Committee on Software Radio” was held in Yokohama National University on May 11-12, 2005. This conference consisted of two panel discussions, 13 invited and 7 regular presentations. More than 200 participants were attended, and expectation and demands for new SR committee were actively discussed for two days.

Opening Panel Discussion

On the first day morning, the conference was opened by the panel discussion “Current and Future Trends of SDR -from International Point of View-” organized by Prof. Ryuji Kohno (Yokohama National Univ.). In this session, three panelists presented latest research topics around the world. First speaker was Prof. Ryuji Kohno and he talked about the research activities of SR in Japan. Second speaker was Dr. Paul Kolodzy (Kolodzy

Consulting, U.S.A.) and he talked about cognitive radio, which is one of the most remarked topics on SR in these days. The third speaker was Dr. Didier Bourse (Motorola Labs., France) and he talked about the activities of End-to-End Reconfigurability (E2R) project[1] supported by EU. After these presentations, active panel discussions were held.

Invited Presentations

On the first day afternoon, 7 invited speakers presented the papers of the software radio actively researched in Japan. In this session, the following active topics were presented; reconfigurable hardware device, device for software radio, MIMO transceiver, and cognitive radio. After this session, Dr. Hiroshi Harada, who is the head of Technical Committee on SR, made a policy speech on the new Technical Committee on SR.



Fig.1 Panel discussion in memorial conference.

Panel Discussion

On the second day, 1 panel discussion and 7 regular presentations were held. In the morning session, Dr. Hiroshi Harada (NICT) organized the panel discussion “Expectations and Demands for Technical Committee on SR from the Related Technical Committees.” In this panel, the members of related technical committees shown below present the invited papers on the expectations and demands for SR.

- Prof. Seiichi Sampei (Osaka Univ.) from TC on Radio Communication Systems (RCS)
- Prof. Yoshio Karasawa (Univ. of Electro-Commun.) from TC on Antenna and Propagation (AP)
- Dr. Noriharu Suematsu (Mitsubishi Electric) from TC on Microwave Engineering (MW)

- Prof. Tetsushi Ikegami (Meiji Univ.) from TC on Wideband System (WBS)

After these presentations, the speakers and audiences actively discuss the expectation for the Technical Committee on SR.

3. The 2nd Conference (SDR Technical Expo. 2005) in July 2005

- ✓ Date: July 28-29, 2005
- ✓ Topics: Technical Exhibition, Panel Discussion
- ✓ Venue: Yokosuka Research Park
- ✓ # of exhibition: 31 (technical:20, commercial: 11)
- ✓ # of presentation: 6 (panel:5, invited: 3, regular 3)
- ✓ # of participants: 250

The 2nd SR technical conference was held from July 28th to 29th at YRP (Yokosuka Research Park). Toward development of practical software radio products, technical exhibition and panel discussion as well as regular presentations were organized to promote mutual technical interactions among participants.

Invited Presentation

As an opening ceremony of the 2nd conference, three invited presentation were given by Dr. Fumio Watanabe (KDDI), Dr. Allan Margulies (SDR Forum), and Prof. Seungwon Choi (Hanyang Univ.). Dr. Watanabe gave a talk about the essence of SDR technology toward Beyond 3G, while Dr. Margulies and Prof. Choi gave presentations about major activities of the SDR Forum[2], and smart antenna API considered in the SDR Forum respectively.

Technical Exhibition

As a principle event of the 2nd conference, the SDR technical exhibition and commercial product exhibition were held for two days at the YRP hall and lobby as depicted in Fig.2. Totally 31 organizations exhibits their developed hardware. The topics of the exhibition spread widely, such as multi-band antenna, multi-band or wide-band RF circuits, high performance AD converter, SDR prototype hardware, DSP modules implemented on reconfigurable devices, and secure SDR architecture. The exhibitions from Dr. Hiroshi Harada (NICT) and Mr. Yuichi Kakishima, et.al., (Tokyo Inst. of Tech.) were elected by the participants as an outstanding exhibition of SDR. Through the exhibition for two days, the participants could exchange the technical experiences and opinions from different point of views. In addition to the academic technical exhibition, 11 companies exhibits the commercial products related to SDR such as evaluation boards for FGPA or DSP and development software tools at the same time. Furthermore four companies from USA

exhibit the posters about the off-the-shelf SDR products for mobile base station and military use. It was a good opportunity for mutual interactions between sales side and engineers.

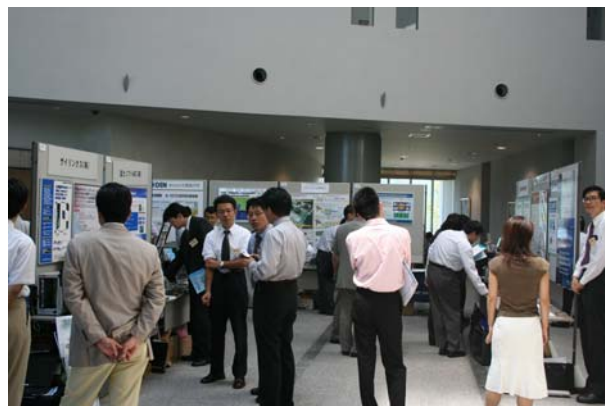


Fig.2 Technical and commercial exhibition in July.

Panel Discussion

On the first day afternoon, a panel discussion entitled “Enabling Technology for SDR” was held under the organizer of Prof. Masaaki Katayama (Nagoya Univ.). The key technologies for SDR, such as reconfigurable devices and RF MEMS switch, were introduced by invited speakers: Dr. Katsuhiko Araki (NTT), Dr. Toshihiro Ishikawa (Panasonic), Dr. Manabu Mukai (Toshiba), Dr. Kambiz Homayounfar (Phybit), Dr. Tomoyoshi Sato (IP Flex), and Dr. Shoichi Narahashi (NTT DoCoMo).

4. The 3rd Conference (Collaboration with E2R) in November 2005

- ✓ Date: November 24-25, 2005
- ✓ Topics: Cognitive Radio
- ✓ Venue: Okinawa Women's Center
- ✓ # of presentation: 26 (tutorial 3, panel 9, invited 1, special 2, regular 12)
- ✓ # of participants: 55

The 3rd SR technical conference was held from November 24th to 25th in Okinawa Women's Center. The conference was co-sponsored by European E2R (end-to-end reconfigurability) project. IEICE TCSR has signed the memorandum of understanding (MoU) with E2R project in Europe in 2005. The focused topic of this conference was the cognitive radio. In addition to the tutorials and the panel discussions on the cognitive radio, a evening session with a more informal atmosphere was also organized in the evening.

Tutorials

The conference started with three invited tutorial presentations by the representative of E2R project. They were presented in English, and were consecutively translated into Japanese. Dr. Karim El-

Khazen (Motorola Lab., France) presented the concept of E2R and the initial research outcomes of the project. Dr. Steve Hope (France Telecom R&D) described the business model of E2R. Mr. Bernd Steinke (Nokia Research Center, France) presented the equipment configuration, management and control. These tutorials presented the abstract and high-level view of the cognitive radio networks using E2R technology, and it was a very precious opportunity for the audiences to think about the cognitive and software radios with more macroscopic viewpoint.

Panel Discussions

Dr. Hiroshi Harada (NICT), the head of TCSR chaired the session entitled “Cognitive Radio: Prospects and Issues” with nine distinguished panelists. The session started with the overview of the prospects and the issues on the cognitive radios by Dr. Harada. Mr. Yuji Nakamura (Ministry of Internal Affairs and Commun.) presented the policy of the Japanese government toward the wireless broadband environment, and some legal issues related to the cognitive radio. Prof. Yasuo Suzuki (Tokyo Univ. Agri. and Tech.) presented the paradigm shift from the software defined radio to the cognitive radio, together with a specific example of the interference canceller using an adaptive array antenna. Dr. Keizo Sugiyama (KDDI R&D Labs) presented the KDDI Ultra-3G concept, in which a seamless wireless network enabled by the cognitive radio technology is a key technology. Dr. Karim El-Khazen (E2R Project) summarized the activities of E2R project and he emphasized the importance of the cognitive networks. Dr. Takashi Ohira (ATR) presented an cognitive approach of the radiowave propagation environment for the secure communications. Prof. Kiyomichi Araki (Tokyo Inst. of Tech.) presented the technical issues and recent progress of the digital RF technology to realize the cognitive radio terminals. Dr. Noriharu Suematsu (Mitsubishi Electric) presented the state-of-art CMOS technologies for multi- and wide-band microwave circuits for SDR terminals. Dr. Hiroyuki Hamazumi (NHK) presented the protection criteria of the digital TV broadcasting in response to the recent activities on the cognitive radio systems utilizing the TV frequency band. Dr. Sadao Obana (ATR) presented the ubiquitous ITS applications, and the role of the cognitive radios there. A lot of critical questions and comments were coming from the floor. In particular, regulation issues were extensively discussed thanks to the participation of Mr. Nakamura.

Evening Session

The evening session was organized in more informal atmosphere to accelerate the open and frank discussion. A panel session entitled “Paradigm Change of Wireless World: From Software Radio to Cognitive Radio” was held by young researchers under the organizer of Prof.

Takeo Fujii (Univ. of Electro-Commun.) and Prof. Kei Sakaguchi (Tokyo Inst. of Tech.) as shown in Fig.3. Panelists were Mr. Naoki Kitagawa (NEC), Mr. Hidetoshi Ookuni (Toshiba), Mr. Shigeru Sawai (Keio Univ.), Mr. Masayuki Takahashi (Tokyo Univ. Agri. and Tech.), Dr. Kenta Umabayashi (Univ. Oulu, Finland). All the panelists presented the fresh viewpoints of the cognitive radio.



Fig.3 Chairs of evening session in Okinawa fashion.

Invited Presentation

Prof. Tomohisa “Fire” Wada (Ryukyu Univ.) introduced his venture company “Magna Design Net, Inc” and his recent technical accomplishments.

Special Talks

Two major international conferences related to the software radio were held just before the conferences. Prof. Takeo Fujii (Tokyo Univ. Agri. And Tech.) and Ms. Marie Endo (Yokohama Nat'l Univ.) were invited to report IEEE Symposium on New Frontiers in Dynamic Spectrum Access Networks 2005 (DySPAN 2005), and 2005 Software Defined Radio Technical Conference and Product Exposition (SDR'05), respectively.

5. The 4th Conference (Workshop on Mobile Communications with AP, MoMuC, MW, RCS, WBS) in March 2006

- ✓ Date: March 1-3, 2006
- ✓ Topics: Workshop on Mobile Communications
- ✓ Venue: Yokosuka Research Park
- ✓ # of presentation: 16 (panel: 4, special:7, regular:5)
- ✓ # of participants: 190

The 4th SR technical conference was held from March 1st to 3rd at YRP (Yokosuka Research Park). This conference was a joint workshop on mobile communication with TCs on AP, MoMuC, MW, RCS, and WBS. The workshop on mobile communication

has been held in every March for these 10 years. From this year, the TCSR involved to the workshop.

In the workshop, a joint panel discussion with technical committee on WBS, a special joint session with six technical committees including mITF (Mobile IT Forum), and general session were held.

Joint Panel Discussion with WBS

The TCSR organized a joint panel discussion entitled “Underlay or Cognitive Radio” with technical committee on WBS as shown in Fig. 4. The session chair was Prof. Makoto Itami (Tokyo Univ. of Science). Invited panelists were Prof. Yukitoshi Sanada (Keio Univ.), Prof. Ryuji Kohno (Yokohama National Univ.), Dr. Hirohisa Yamaguchi (Texas Instruments Japan) and Dr. Yuzo Kuramochi (Freescale Semiconductor Japan).



Fig. 4 Joint panel discussion with WBS in March.

Special Joint Session

All six technical committees and mITF jointly held a special session entitled “Technical Issues for Super High-Speed Communication”. The organizer was Prof. Yoshihiko Akaiwa (Kyushu Univ.) and invited speakers were Dr. Mitsuru Uesugi (Panasonic Mobile Commun.) from mITF, Dr. Tomoyuki Ohya (NTT DoCoMo) from MoMuC, Prof. Takehiko Kobayashi (Tokyo Denki Univ.) from WBS, Prof. Seiichi Sampei (Osaka Univ.) from RCS, Dr. Hiroshi Harada (NICT) from SR, Dr. Hiroki Shoki (Toshiba) from AP and Dr. Ichihiko Toyoda (NTT) from MW.

6. The IEICE General Conference in March 2006

The 2006 IEICE general conference was held from March 24th to 27th at Kokushikan University. This conference was jointly organized by all societies in IEICE and provided a forum where members can present their research results and exchange views. In the conference, a panel discussion was organized on the topic “How a paradigm on dependable seamless wireless communication technology affects human society?” by the TCSR.

Panel Discussion

The session chair was Dr. Hiroshi Harada (NICT), the head of TCSR. Invited panelists were Prof. Takaya Yamazato (Nagoya Univ.), Prof. Haruo Hayashi (Kyoto Univ.), Prof. Toshihiko Oobayashi (The Univ. of Tokyo Hospital), Dr. Shuzo Kato (NICT), and Dr. Hideyuki Shinohara (KDDI Laboratories). Firstly, Prof. Yamazato clarifies point of view on dependable wireless communication technology. Prof. Hayashi showed the needs of dependable seamless wireless communications for public safety by using past disasters such as 9.11 terrorism and Hurricane Katrina. Prof. Oobayashi indicated the needs of dependable seamless wireless communications for emergency medical care. Dr. Kato showed a paradigm shift from operator (carrier)-oriented to consumer-oriented wireless communication and a paradigm shift from media independent handover to carrier independent handover. Dr. Shinohara introduced latest activities of KDDI and KDDI labs. on anti-disaster operation and dependable seamless wireless communications based on cognitive radio. In the discussion, needs for multi-function and multi-operational seamless cognitive radio were clarified.

7. Conclusion

In 2005, the Technical Committee of Software Radio (TCSR) was raised to the 1st class technical committee of IEICE in May. The TCSR organized four distinctive technical conferences: memorial conference on renew in May, SDR technical expo. in July, collaboration with E2R in November, and workshop on mobile communications in March, as well as a panel discussion in the IEICE general conference. In 2006, the TCSR will continue their activities to promote research on software defined radio, cognitive radio, and their related technologies. Especially from 2006, the SDR young investigators award will be introduced to encourage young engineers in the field of SDR. The latest programs of technical conferences can be found in the website of TCSR[3].

References

- [1] E2R project website, <http://www.e2r.motlabs.com/>
- [2] SDR Forum website, <http://www.sdrforum.org/>
- [3] TCSR website, <http://www.ieice.org/cs/sr/eng/>

Welcome to the IEICE Overseas Membership Page URL: <http://www.ieice.org/>

Membership for Overseas Candidates: Overseas Members may opt to join **one IEICE Society of their choice** and may request to receive the **IEICE Transactions of online version** of that Society. Furthermore, Overseas Members may request to receive the IEICE Journals and Transactions (published in paper) at an additional cost. Similar services are available to **Overseas Student Members**. Voting privileges in the IEICE election do not apply to Overseas Members. For detailed information on eligibility requirements for each type of Membership, please refer to the IEICE web site (<http://www.ieice.org/eng/member/OM-appli.html>). **Note that the Overseas Membership applies only to candidates who reside outside of Japan and who have citizenship in countries other than Japan.**

IEICE Societies and Publications

Society	Transactions	Editorial Subject Indexes
A (Fundamentals of Electronics, Communications and Computer Sciences)	A (Japanese Edition) EA (English)	Engineering Acoustics, Noise and Vibration, Speech and Hearing, Ultrasonics, Digital Signal Processing, Analog Signal Processing, Systems and Control, Nonlinear Problems, Circuit Theory, VLSI Design Technology and CAD, Numerical Analysis and Optimization, Algorithms and Data Structures, Graphs and Networks, Reliability, Maintainability and Safety Analysis, Cryptography and Information Security, Information Theory, Coding Theory, Communication Theory and Signals, Spread Spectrum Technologies and Applications, Mobile Information Network and Personal Communications, Intelligent Transport System, Image, Vision, Computer Graphics, Language, Thought, Knowledge and Intelligence, Human Communications, Neural Networks and Bioengineering, Multimedia Environment Technology, Communication Environment and Ethics, Concurrent Systems, Measurement Technology, General Fundamentals and Boundaries
B (Communications)	B (Japanese Edition) EB (English)	Fundamental Theories for Communications, Devices/Circuits for Communications, Transmission Systems and Transmission Equipment for Communications, Optical Fiber for Communications, Fiber-Optic Transmission for Communications, Switching for Communications, Switching for Mobile Communications, Network, Network Management/Operation, Internet, Wireless Communication Technologies, Terrestrial Radio Communications, Satellite Communications, Optical Wireless Communications, Antennas and Propagation, Electromagnetic Compatibility (EMC), Sensing, Navigation, Guidance and Control Systems, Energy in Electronics Communications, Terminals for Communications, Multimedia Systems for Communications, Broadcast Systems, Integrated Systems for Communications, Space Utilization Systems for Communications
C (Electronics)	C (Japanese Edition) EC (English)	Electromagnetic Theory, Lasers, Quantum Electronics, Optoelectronics, Microwaves, Millimeter-Waves, Ultrasonic Electronics, Electronic Circuits, Electronic Materials, Organic Molecular Electronics, Electronic Components, Electromechanical Devices and Components, Semiconductor Materials and Devices, Integrated Electronics, Electron Tubes, Vacuum and Beam Technology, Electronic Displays, Superconducting Electronics, Storage Technology, Electronic Instrumentation and Control
D (Information and Systems)	D (Japanese Edition) ED (English)	Computation and Computational Models, Automata and Formal Language Theory, Algorithm Theory, Complexity Theory, Computer Components, VLSI Systems, Computer Systems, Fundamentals of Software and Theory of Programs, System Programs, Software Engineering, Database, Contents Technology and Web Information Systems, Data Mining, Networks, Dependable Computing, Application Information Security, Distributed Cooperation and Agents, Artificial Intelligence and Cognitive Science, Human-computer Interaction, Office Information Systems, e-Business Modeling, Educational Technology Rehabilitation Engineering and Assistive Technology, Pattern Recognition, Speech and Hearing, Image Processing and Video Processing, Image Recognition, Computer Vision, Computer Graphics, Multimedia Pattern Processing, Natural Language Processing, Biocybernetics, Neurocomputing, Biological Engineering, Music Information Processing, Kansei Information Processing, Affective Information Processing
Journal of IEICE (written in Japanese only)		

Membership Charges (UNIT : Japanese YEN)

Service coverage for overseas members	Entrance charge	Online Version		Paper version (optional)		
		Registration of 1society and its transaction (Online version)	Registration of additional society (Includes its transactions of Online version)	Journal (Written in Japanese, in paper version)	Transactions (Written in Japan or in English in paper version)	
					One	Two or more
Member (overseas)	1,400	7,000	3,500(/1Society.)	6,000	4,000	10,000
Member (overseas) with OMDP*	1,000	5,000	3,000(/1Society.)	5,000		
Student member (overseas)	-	2,000	2,000 (/1Society.)	6,000		
Student member (overseas) with OMDP*	-	1,000	1,500 (/1Society.)	5,000		

NOTE

1. You need to choose one Society, and you can subscribe Transactions online of your registered society.

Example: If you want to subscribe to Transaction of EA, please check Society Registration as "A", and your membership fee amounts to 7,000 yen / 5,000 yen.

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Example: If you want to subscribe to Transaction of EA and EB, please check Society Registration as "A", Additional Society registration (optional) as "B". Your membership fee amounts to 7,000+3,500 yen / 5,000+3,000 yen.

3. If you want to subscribe to one Transaction of paper version,, please check "Additional Transaction subscription (published in paper)".

Example: If you want to subscribe to Transaction of EC in paper version additionally, please check Society Registration as "A", and Additional Transaction subscription (in paper version) as "C" or "EC". Your membership fee amounts to 7,000+4,000 yen / 5,000+4,500 yen.

4. If you want to change membership from Member (In Japan) to Overseas Member, you don't need to pay an Entrance charge.

IEICE Overseas Membership Application Form

URL <http://www.ieice.org/eng/member/OM-appli.html> E-mail member@ieice.org

- ◆ **Please type or print in English.** ◆ Please send the form by FAX or by e-mail.
- ◆ The deadline for submitting application form is the 1st day of every month.

Personal Information

Full name: _____ **Nationality :** _____ Male
First name Middle name Last name Female

Prof. Dr. Mr. Ms. **Place of birth:** _____ **Date of birth:** _____
Day Month Year

Mailing Address Home Office

Name of Company/School/College _____ Department/Section _____
 Street _____ City _____ State/Province _____
 Postal code _____ Country _____
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Academic Background

The highest academic degree: Ph.D. Masters Bachelors Others: _____
 University/college/school of the highest academic degree _____ Month & year of graduation _____
 (For Student Member) Academic degree which will be conferred on you. _____ Month & year when the degree will be conferred on you. _____

Application Information

Membership: I want to apply for the following membership (check one item!)
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Additional Society (optional): A: Engineering Sciences B: Communications C: Electronics D: Information & Systems

Additional Transactions of paper version (optional):

EA: Fundamentals EB: Communications EC: Electronics ED: Information & Systems
 A (Japanese) B (Japanese) C (Japanese) D (Japanese)

Journal subscription (optional) (Japanese)

Remittance

Remittance is available only in **Japanese yen** by a **credit card**

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Endorsement

Endorsements by two IEICE Members for Member application and by one Member for Student Member application is required. If it is difficult to find endorsers, please contact the IEICE Membership Activities Section by sending this sheet, and we will help you.

I recommend this applicant for IEICE membership.

Endorser's name _____ Membership number _____ Endorser's signature _____ Date _____

Endorser's name _____ Membership number _____ Endorser's signature _____ Date _____

From Editor's Room

● Toward next steps

In previous this column, we informed you that IEICE Communications Society (IEICE-CS) plan to renovate this Global News Letter. Today, we are pleased to glance our current rough renovate plan in progress.

IEICE-CS now start to prepare to publish IEICE-CS new magazine! Some parts of this Global News Letter may be merged into this new magazine. The features of this new magazine are as follows.

◇ The third official periodical publication of IEICE-CS.

IEICE-CS has already officially published two periodical publications, IEICE Transactions on Communications (B) (in Japanese) and IEICE Transactions on Communications (in English). This new magazine is the third official periodical publication of IEICE-CS. The official languages of this magazine may be English and Japanese. Some articles may be written by Japanese, however, English articles are also welcome. This magazine will be published quartely at the beginning.

◇ Open call for paper and review process.

◇ Dig into problems of the communication fields.

◇ Promptly and Timely.

◇ And so on...

Unfortunately, there is no space at here. We GNL Staffs also cooperate with the new magazine editorial committee and set out to publish the first number. Please expect our new challenge!

IEICE Global News Letter Editorial Staff

Editorial Staffs of this issue

No special order is observed.



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