

IEICE Global Plaza

—Monthly community plaza in English for students, faculties and engineers—

Hot Topics

2014 IEICE General Conference Successfully Held at Niigata University Ikarashi Campus with About 9,500 Participants in Total

IEICE-TFIPP

The annual IEICE General Conference in 2014 was successfully held at Niigata University Ikarashi Campus in Niigata City, 250 km north of Tokyo, on March 18–21, 2014. The campus is extended in a big and quiet area located on the hillside between the northwest coast of Honshu island and the longest river in Japan, Shinano River which flows through a high mountain area, so called Northern Alps. The city is well known as a commercial port city which has evolved from age to age, and reminds us of the IEICE globalizing with participants from many countries.

The Conference is summarized by Table 1. The total number of Conference participants reached 2,587 in presentation, 4,777 in registration and effectively about 9,500 in total.

According to the reaction of the participants to the questions of TFIPP secretaries, they could share updated and useful technological knowledge and experiences, and get acquainted with many participants, especially with leading people in their relevant special fields through discussions in each Session.

Table 1 Summary of the 2014 IEICE General Conference (Soc.=Society, unit=the number of presentation titles)

| Organizer | Invited Speech & Panel | Paper | Student Poster | Presentation in English | | |
|------------------------------|------------------------|-------|----------------|-------------------------|-----------|-----------|
| | | | | 2014 Year | 2013 Year | 2012 Year |
| Conference Committee | 34 | — | — | 22 | 13 | 18 |
| Engineering Sciences Soc. | 30 | 317 | — | 16 | 22 | 16 |
| Communications Soc. | 96 | 1,422 | — | 129 | 114 | 89 |
| Electronics Soc. | 59 | 479 | — | 19 | 14 | 17 |
| Information and Systems Soc. | 9 | 403 | 227 | 9 | 22 | 28 |
| Total | 228 | 2,621 | 227 | 195 | 185 | 168 |

The Conference started with the first 36 Sessions of the four Societies on March 18 and the total number of Sessions during the four days reached 315 Sessions. It was inaugurated with the Keynote Speech given by Prof. Young Shik Moon of Hanyang University in Korea serving the Institute of Electronics and Information Engineers (IEIE, the former Institute of Electronics Engineers of Korea (IEEK)) as the President, after the introductory remarks by Dr. Yuji Inoue, TOYOTA Infotechnology Center Co. Ltd., President of IEICE, on March 19 (See the following article).

In the evening on the same day, the 76th Young Researcher's Award Giving Ceremony was held at Chisun Hotel and Conference Center Niigata linked to Niigata JR Station (Fig. 1). The Award winners in the ceremony were 8 researchers in IEICE Engineering Sciences Society, 38 researchers in IEICE Communications Society, 14 researchers in IEICE Electronics Society and 7 researchers in IEICE Information and Systems Society. Successively, the Conference Reception was held by IEICE and a welcome speech was given by Dr. Yuji Inoue, President of IEICE (Fig. 2). Prof. Sugata Takahashi, President of Niigata University addressed a guest speech and referred to putting global opinion exchange

and collaborations forward between the Conference participants covering staffs or students of the university through hosting the Conference, and the expected social contribution of the university (Fig. 3). Successively, Mr. Eiji Hamada, Deputy Mayor of Niigata City addressed a guest speech and referred to the historical role of the city which has promoted industries and communications with the marine transport represented by the northern bound ships "Kitamae-bune" which transported quite rich products from the sea and the paddy fields indispensable for daily lives (Fig. 4).



Fig. 1 Young Researcher's Award Giving Ceremony of each Society



Fig. 2 Welcome Speech by Dr. Yuji Inoue, Chairman of IEICE



Fig. 3 Guest Speech addressed by Prof. Sugata Takahashi, President of Niigata University



Fig. 4 Guest Speech addressed by Mr. Eiji Hamada, Deputy Mayor of Niigata city

The Conference also provided five complete English Sessions and encouraged the participation of not only international students and researchers staying in or visiting Japan but also domestic young generation for the enhancement of their global communication skills through presentation and opinion exchange in the campus. As a result of the evolving globalization scheme of IEICE, the number of English presentations has increased year by year even if gradually. This trend of evolving English based Sessions symbolizes the globalization scheme of IEICE.

The IEICE Communications Society Welcome Party is held as a regular event in the Conference every year to encourage the younger generation to join their research activities. This year, the sixth Welcome Party was held on the first day of the Conference and the number of the participants reached 200. It is expected that the event would be a chance for the participants to know more researchers, experts and administrators in industry, academic societies and Governments.

One of the new Conference events, the 2014 All Sections Meeting was chaired by Dr. Kazue Sako, NEC, VP of IEICE with 51 relevant members on the occasion of the Conference and all International Section Representatives (ISRs) joined there, on March 20 in the morning. The conventional Meeting has been annually organized by IEICE International Affairs Committee (IAC), the former Overseas Section Representatives and Society/Group delegates to introduce their organization and activities, so far. This year, every Overseas Section was reformed as an International Section and the meeting was changed to invite all Board Directors, Society/Group Presidents/Delegates and Local Section Representatives so that innovative global activities would be created through discussion.

(Reported by Prof. Kenzo Takahashi, IEICE-TFIPP)

Five English Sessions Promote the Easier Participation of International Researchers and Students in the Conference

The five complete English Sessions gave impacts on the Conference intending to be global through presentation and discussion by the participants from many countries. The innovative trials were provided in each Session and shared by many Conference participants.



Session TK-1

Keynote Speech Given by Prof. Y.S. Moon, President of IEIE, Korea

IEICE-TFIPP

The Keynote Speech entitled "Recent Research on Multimedia Applications" was addressed by Prof. Young Shik Moon of Hanyang University, President of the Institute of Electronics and Information Engineers (IEIE), Korea. (See his contribution to IEICE Global Plaza at http://www.ieice.org/eng/global_plaza/2014/63.html#1) Prof. Kukjin Chun of Seoul National University, the then President of the former IEEK who addressed his Guest Speech in 2012 IEICE General Conference, attended the Session as one of the main guests as well. This Session was organized by the General Conference Committee according to the MOU between IEIE and IEICE which was contracted in 1983. The MOU covers the reciprocal top exchange program implemented every two years where the tops of each institution visit the other institution on the occasion of annual General Conference/Assembly in turn. According to this scheme, Dr. Shigeyuki Akiba, VP of IEICE and Chairman of IEICE International Affairs Committee and Prof. Kiyomichi Araki, Director of IEICE attended IEIE's annual General Assembly which was held at Korea University in Seoul last November, and addressed guest speeches. (See it at http://www.ieice.org/eng/global_plaza/2013/60.html#2).

This Session was provided at one of the venues, B-Building on March 20, 2014. The number of participants in the Session finally reached around 35. After the introductory speech given by Dr. Yuji Inoue, President of IEICE, who intensified the expected globalization scheme of regional academic societies through current and future collaborations between the two institutions, Prof. Y.S. Moon gave his speech on the above topic. His speech covered the following issues :

- (1) The overview of multimedia applications covering the fields of automobile, medical, entertainment, military, consumer electronics and security systems or equipment.
- (2) Image de-hazing technology with experimental results and a new de-flickering technology which can enhance the contrast of input images by the haze effect removal due to atmospheric absorption and scattering on the condition that the observed hazy image is the sum of de-hazed image after transmission and residual atmospheric light values after transmission.
- (3) Accident detection in parking lots with detecting vehicles, object tracking and the motion information.
- (4) Tracking multiple-target with occlusion in a cluttered environment, covering the improvement of Fern-classifier through a random pattern feature verification process in multiple target detection. Improvement of FB-NCC Tracker to robustly track targets.
- (5) Text region extraction in videos for optical character recognition using the abrupt pixel intensity change around the boundary of texts. The detection and refinement of text region by accumulating multiple frames and the frequency analysis with 1D-DCT which gives an effective text extraction with the experimental results.
- (6) The historical background, organization composed of General Assembly, Council, Board of Directors with six Societies and twelve Regional Sections in IEIE, the publication of the Journal of IEIE which was ranked as the top out of 5,634 domestic journals in 2013. Current international relations with the world institutions including IEICE. Expected collaborations between IEIE and IEICE covering co-organizing international conferences, mutually publishing selected papers

in journals of IEIE and IEICE, mutual exchange of publications, mutual membership fee discount, and mutual information delivery of each international events.

His speech also provided a chance for the participants to know his excellent personality and leadership adding to the policy and strategy of IEIE. The participants frequently asked questions and exchanged opinions with Prof. Y.S. Moon.

(Reported by Prof. Kenzo Takahashi, IEICE-TFIPP)



Fig. 5 Prof. Y.S. Moon giving the Keynote Speech in the Conference

Session TK-2

International R&D Trends in ICT Reported by IEICE International Sections Representatives

IEICE International Affairs Committee

This Session was planned as a regular Session by the General Conference Committee and organized by IEICE International Affairs Committee (IAC) this year as well. It was held at a lecture theater on March 20, 2014, following the All Sections Meeting where and chaired by Prof. Kenzo Takahashi, the University of Electro-Communications, Member of IAC and TFIPP. In addition to general participants, members who attended the All Sections Meeting (Board Directors, Society/Group Presidents and Delegates, Local Section Representatives as well as International Section Representatives (ISRs), members of IAC and TFIPP, joined the Session.

The speeches were given by ISRs/Deputy ISRs listed in Table 2. Prof. Young-Bok Choi of Tongmyong University, ISR of Korea Information Section unfortunately could not join the Session. They introduced the R&D Trend of ICT in the region around each International Section, and reported the organization and academic activities of each Section based on the trend. The venue was filled with about 65 participants who joined positive discussions on the scheme and strategy of globalization and exchanged opinions with each speaker. The speeches in the Session will be summarized in coming issue of IEICE Global Plaza.

Dr. Shigeyuki Akiba, KDDI R&D Laboratories, VP of IEICE, Chairman of the 2014 General Conference and Chairman of IAC addressed his Opening/Closing Remarks. In his talks, he referred to the new scheme of IEICE globalization, the necessity of further reformation of International Sections and their cooperation.

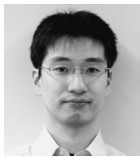
Table 2 International Section Representatives who addressed speeches (Sec.=Section, Repr.=Representative, U.=University)

| Section/Position | Name | Affiliation |
|----------------------------------|-----------------------------|---------------------------------------|
| Vietnam Sec. Deputy Repr. | Xuan-Tu Tran, Dr. | VNU, U. of Engineering and Technology |
| Taipei Sec. Deputy Repr. | Hoang-Yan Lin, Prof. | National Taiwan U. |
| Singapore Sec. Repr. | Arokiaswami Alphones, Prof. | Nanyang Technological U. |
| Shanghai Sec. Deputy Repr. | Jie Zhu, Prof. | Shanghai Jiaotong U. |
| Korea Electronics Sec., Repr. | Jang-Kyoo Shin, Prof. | Kyungpook National U. |
| Korea Communications Sec., Repr. | Choong-Seon Hong, Prof. | Kyung-Hee U. |
| Indonesia Sec. Repr. | Jaka Sembiring, Dr. | Institute of Technology Bandung |
| Europe Sec. Repr. | Haris Gacanan, Dr. | Alcatel-Lucent Bell NV |
| Beijing Sec. Repr. | Tao Zhang, Prof. | Zsinghua U. |
| Bangkok Sec. Repr. | Tuption Angkaw, Dr. | Chulalongkorn U. |

The order of Section was decided by IAC to be inverse in alphabetical order from the viewpoint of even chance of prior position.

Session TK-3

I-Scover Challenge 2013 Provided Lectures, Paper Presentations and Award Giving Ceremony



Satoshi Ikada,
*R&D Center, Oki Electric Industry Co. Ltd.,
Secretary, IEICE I-Scover Project Promotion
Team*

This Session was chaired by Mr. Satoshi Ikada, Secretary of IEICE I-Scover Project Promotion Team for the first two presentations and by Mr. Yasufumi Chimura, Sub-Leader, I-Scover Project for the last three presentations. The IEICE Knowledge Discovery (I-Scover) is a new database service provided by IEICE where anyone can enjoy the search function without charge and without membership. It can retrieve an expected paper out of quite many publications of IEICE, or any other publications on general databases linked to IEICE's database through the fundamental scheme of metadata based structure and linked data. IEICE I-Scover Project Promotion Team planned, and implemented the contest of I-Scover based application called I-Scover Challenge 2013 during September 2013 and January 2014. (It was announced before and during the contest. For example, see it at http://www.ieice.org/eng/global_plaza/2013/60.html#4)

The Session reported the result of the contest and provided relevant Guest Speeches. It was shared by IEICE International Section Representatives who attended the IEICE All Sections Meeting and the Session TK-2 reported above, for the better understanding of I-Scover. The Speeches are listed below.

- (1) Dr. Yuji Inoue, President of IEICE, "I-Scover & IEICE as a new Plaza + toward a new Multicultural Paradigm".
- (2) Mr. Yasubumi Chimura, Sub-leader, I-Scover Project, "I-Scover Challenge 2013 Contest Summary and Announcement of Results".
- (3) Dr. Michael Hausenblas, MapR Technologies, Ireland, "Networked Data : Current State and Challenges".
- (4) Dr. Yao Meng, Fujitsu R&D Center, China, "Linked Data Technology and Application".
- (5) Dr. Maciej Piechowiak, Kazimierz Wielki University, Poland, "I-Scover IEICE Europe Section Experience".

Dr. Y. Inoue referred to the current situation of IEICE that it would need the cooperation with many countries in multi-cultural environment to be evolved and the international exchange would be more important in the near future, in his speech. After the report of the contest by Mr. Y. Chimura in his speech, the Award Giving Ceremony was held. One Grand Prize, two Excellent Prizes, six Special Prizes and eight Encouragement Prizes were presented by Dr. Y. Inoue to each prize winner.



Fig. 6 Dr. Y. Inoue, Chairman of IEICE addressing the Keynote Speech



Fig. 7 Dr. M. Piechowiak from Kazimierz Wielki University, Poland presenting a speech

Session BS-1

Future Network Technologies for Advanced Information and Communications Society



Kouji Hirata, Dr.
*Tokyo University of Science,
Sub Session Organizer, BS-1,
IEICE Communications Society*

In the Conference which was held on March 18-21, 2014, the IEICE Technical Committee on Network Systems (NS) provided the complete English Symposium Session entitled "Future Network Technologies for Advanced Information and

Communications Society" as one of the eight Symposium Sessions hosted by IEICE Communications Society consecutively during all the four days. This Session discussed future network technologies for the future advanced information and communication society through research presentations. NS has managed this Session since 2004 so far, in order to promote the globalization of IEICE.

This year, 76 papers were submitted to the Session. The number of submitted papers increased by 23% compared to last year. It is the largest number in the history of this Session. The papers were classified into 15 Sub-Sessions according to the topics. The Sub-Sessions were held every day during the General Conference. In each Session, various topics about future network technologies such as wireless networks, network virtualization, photonic networks, contents centric networks, green ICT, and others were discussed.

Twenty to thirty General Conference participants joined at each Sub-Session. The discussions between speakers and participants in each Sub-Session were very active where they exchanged opinions in detail. Since the time assigned to each question-and-answer period was limited, they continued discussions here and there even during the break periods.

The Session much contributed to expanding opportunities for international students and researchers to discuss and exchange up-to-date topics, technical problems, and ideas even if the research result was not mature. In the Session, NS expects that they will find researchers interested in or studying the same area of technologies and make friends with each other. It will be very effective in the globalization of IEICE.

NS will select the best papers and award a prize of the session in the near future to encourage their continuous activities. The best papers will be awarded in the upcoming NS Technical Committee meeting in October 2014. Your participation in the English Session by NS will be welcomed next year as well!



Fig. 8 Four Days English Session BS-1 organized by IEICE Technical Committee on Network Systems

Session CI-1

Young Researcher's Award Winners of Thailand-Japan Microwave (TJMW) 2013 in Bangkok Present Papers



Hiroyuki Unohara, Prof. Dr.
*Division of Integrated Science,
Graduate School, Tokyo Institute of Technology
Editor, IEICE Global Plaza*

This Session was organized by IEICE Electronics Society and the four Distinguished Presentation Award winners in Thailand-Japan Microwave (TJMW) 2013 gave their presentation at Room 374 on Ikarashi Campus in Niigata University on March 19, 2014. The number of general participants reached about 40. Each of the speeches are summarized as follows ;

(1) Tanan Hongnara (King Mongkut's University of Technology, North Bangkok), "MNG ENG NZI fractal metasurface on slot antenna".

The antenna consisting of a fractal fishnet on SUC, a closed ring resonator on SUC, and a microstrip-fed slot antenna was numerically analyzed. Due to the response of the fishnet structure and the coupling between the two kinds of resonators, negative permittivity, negative permeability, and near zero index were found in some range of frequency.

(2) Chamaiporn Ratnaratorn (King Mongkut's University of Technology, North Bangkok), "Gain enhancement for multi-band antenna with Hilbert fractal slot reflector".

The gain enhancement for a multiband antenna consisting of a wide slot, a Hilbert slot with 1st iteration, and modified rectangular patch was investigated. The possibility of operation in GSM, DCS, PCS, UMTS, WiMAX, and IEEE802.11b/g was indicated.

(3) Teerachot Sirburanon (Tokyo Institute of Technology), "A dual-step-mixing ILFD using a direct injection technique for high-order division ratios in 60 GHz applications".

An injection-locked-frequency-divider (ILFD) using direct injection in dual step mixing was proposed for a wide-locking range and low power consumption operation in 60 GHz wireless standard. The widest locking range of the proposed ILFD was achieved for divide-by-6, and competitively wide locking range for divide-by-4 operation.

(4) Takayuki Matsumuro (Kyoto University), "Spherical dielectric resonator as an accurate source of high-order mode spherical wave".

The radiation field distribution of the spherical dielectric resonator was simulated by solving eigenvalue equation for application to the antenna of wireless power transmission. It was found that the spherical dielectric resonator could be used as an antenna that radiated selected high-order mode spherical wave. There were many audiences in the presentation room, and they celebrated the award winners.



Fig.9 English Session CI-1 organized by IEICE Electronics Society



Fig.10 Award Winners in TJMW 2013 provide speeches

The Sixth IEICE Communications Society Welcome Party Successfully Held at 2014 IEICE General Conference



Atushi Hiramatsu,
NTT Advanced Technology Corporation
Chair, Planning and Member Activities
Committee, IEICE Communications Society

On the first day of the Conference which was held on March 18-21, 2014, the sixth IEICE Communications Society (CS) Welcome Party was held. From 2008 to 2011, the party was held in the IEICE Society Conference in fall to provide an opportunity to talk friendly and exchange information mainly between students and young researchers actively working in various companies or institutes. Last year, the party was moved to the IEICE General Conference in spring when students start to think about getting a job. This event has now become one of the important activities in IEICE-CS.

This year, 201 people including 71 students and 130 researchers from universities, institutes, and industries attended to the party, and enjoyed conversations and exhibitions with complimentary drinks and foods. The party consisted of two parts. The first part began with a welcome address by Prof. Iwao Sasase, President of CS. It was followed by introductions of Technical Committee activities and research fields by Chair of Council of Technical Committee Representatives and 3 Technical Committees of IEICE-CS. Next, 16 companies and



Fig.11 Welcome Message by Prof. I. Sasase, CS President.



Fig.12 Welcome Party Participants enjoying talks each other

institutes put up poster exhibitions in the second part addressed brief speeches for the students. In the second part, 34 posters of Technical Committees in CS and related companies were exhibited, and many students willingly addressed speeches with their acknowledgements. Finally, CS President-Elect, Dr. Kou Miyake concluded the party.

As one of the organizers of this event, I would like to thank all attendees to the event. Please note that this event is open to all the students and researchers who are interested in the activities of IEICE-CS. It is expected that more people will join IEICE CS Welcome Party in the 2015 IEICE General Conference which will be held at Ritsumeikan University, Kusatsu, Japan, in March next year!

Upcoming International Conferences

- EMC'14/Tokyo**—IEICE Communications Soc., in Tokyo, Japan, on May 13-16, 2014, <http://www.ieice.org/~emc14/>
- ISOME2014**—IEICE Electronics Soc., in Tokyo, Japan, on May 15-16, 2014, <http://www.ieice.org/~ome/ISOME/Welcome.html>
- ICTF2014**—IEICE Europe Section, at Poznan University of Technology in Poznan, Poland, on May 28-30, 2014, <http://www.ictf2014.org/index.php?layout=0>
- WTC2014**—IEICE Communications Soc., in Berlin, Germany, on Jun. 1-3, 2014, <http://conference.vde.com/wtc2014/Pages/Start.aspx>
- ASIACCS2014**—IEICE Engineering Sciences Soc., in Kyoto, Japan, on Jun. 4-6, 2014, <http://www2.nict.go.jp/nsri/fund/asiaccs2014/>
- CFI2014**—IEICE Communications Soc., in Tokyo, Japan, on Jun. 18-20, 2014, <http://cfi2014.wide.ad.jp/>
- ADSN2014**—IEICE Communications Soc., in Madrid, Spain, on Jun. 30-Jul. 3, 2014, <http://adsn.net.info.hiroshima-cu.ac.jp/>
- WCSIT**—IEICE Communications Soc., in Iasi, Romania, on Jul. 3-4, 2014, <http://www.wcsit.eu/>
- OECC/ACOF2014**—IEICE Communications Soc., IEICE Electronics Soc., in Melbourne, Australia, on Jul. 6-10, 2014, <http://www.oecc-acoft-2014.org/>
- ITC-CSCC**—IEICE Engineering Sciences Soc., in Bangkok, Thailand, on Jul. 4, <http://www.itc-cscc.org/>
- IWSEC2014**—IEICE Engineering Sciences Soc., in Hirosaki, Japan, on Aug. 27-29, <http://www.iwsec.org/2014/>
- APWiMob2014**—IEICE Communications Soc., in Bali, Indonesia, on Aug. 28-30, 2014, <http://www.apwimob.org/>
- IMQA**—IEICE Engineering Sciences Soc., in Chiba, Japan, on Sept. 2-3, 2014, <http://www.imqa.jp/IMQA.html>
- APNOMS2014**—IEICE Communications Soc., in Hsinchu, Taiwan, on Sept. 17-19, 2014, <http://people.cs.nctu.edu.tw/~apnoms2014/index.html>
- SISA2014**—IEICE Engineering Sciences Soc., in Melbourne, in Ho Chi Minh City, Vietnam, on Oct. 8-10, 2014, <http://www.ieice-sisa.org/>
- MWP/APMP2014**—IEICE Communications Soc., IEICE Electronics Soc., in Sapporo, Japan, on Oct. 20-23, 2014, <http://www.mwp2014.com/>
- ISITA2014**—IEICE Engineering Sciences Soc., in Melbourne, Australia, on Oct. 26-29, 2014, <http://www.isita.ieice.org/2014/>
- APMC2014**—IEICE Electronics Soc., in Sendai, Japan, on Nov. 4-7, 2014, <http://apmc2014.org/>
- ISAP2014**—IEICE Communications Soc., in Kaohsiung, Taiwan, on Dec. 2-5, 2014, <http://isap2014.org/>
- APSIPA 2014**—IEICE Engineering Sciences Soc., in Chiang Mai, Thailand, on Dec. 9-12, 2014, <http://www.apsipa2014.org/home/>

Message from TFIPP Secretariat

This issue is delivered also by a free mail magazine "IEICE Global Plaza Online" with updated news of interest for you. Please contact Prof. Takahashi, TFIPP (Task Force for International Policy and Planning) at global@ieice.org, if you need. Back numbers are available in archives at: http://www.ieice.org/eng/global_plaza/index.html

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