IEICE

Communications Society ─GLOBAL NEWSLETTER─

VOL.40 NO.2
June 2016

IEICE Communications Society GLOBAL NEWSLETTER *Vol. 40, No.2*
Contents

○ IEICE-CS Information

○ Photogravure

Color Version Available!
The PDF (color version) of this issue can be downloaded from IEICE-CS
Web site below:
https://www.ieice.org/cs/pub/global_news.html

Greetings from the New President
− Making Your Academic Activities Exciting −

Masayuki Murata
President, IEICE Communications Society
Professor, Osaka University, Japan

It is my great honor to serve as the President of IEICE Communications Society (IEICE-CS). First, I would like to express my gratitude for all of many enthusiastic volunteers involved in the activities of IEICE-CS. I promise to do my best to further promote valuable activities of IEICE-CS as expected by members.

Our Society will celebrate its 100th anniversary in the next year, 2017, and we are now preparing a lot of fascinating 100th-anniversary memorial projects. We would like to avail of this occasion to express my respect for researchers and engineers contributing to the advancement of information and communications technologies. At the same time, we must start to prepare the next 100 years of development.

For this, we now reconsider what a mission of the Society is. An important mission, and probably a most important one, is that we must establish the foundation for the next generation of researchers and engineers to become renowned around the world. For that purpose, we need to provide various forums promoting open discussion/to pioneer the new research fields with them. These are natural, but how?

Due to the recent progress of globalization, the industry is no longer afford to carry out employee training enough under the tough competition. Also, under globalization, general-purpose and/or standardized technologies become more appreciated than proprietary ones originally owned by the company. That is, the company is losing the importance of inheriting its own know-how. What happens then? The industry is now seeking "work-ready" university students. Does this would be desirable for true socioeconomic development?

Of course, the role of academia and industry would not be clearly separated in truly beneficial advanced human resource development, and both should have complementary responsibilities. Still, we must never forget that human resources education in the university should be for the students in anticipation of growth in 10 years and 20 years in their future. It means that the purpose is not to foster researchers or engineers who can work in the specific narrow technological field. Instead, our target should be human resources who have a design capability of a truly useful system in the industry and our daily life, and sufficient knowledge of the system working in the real world, i.e., the architect. Of course, communicability in a broad sense, including the leadership, and the ability to boldly challenge for the new problems are also important. What a sole company or sole university can do is quite limited. Perhaps our Society has a chance to do it. Only the Society can provide open forums where researchers and engineers exchange and share the knowledge of the related fields. All of the activities in the Society should be targeted for such purposes.

I understand all activities of the Society are owing to volunteer contribution by members, but still I would like to ask members, especially to young members a few things. It is important for the Society to publish the journals. The problem may be its quality. It is exciting that new ideas or new technology published in IEICE journals become a base in the next generation, isn't it? For this, challenges for the new technology to open up a new era, instead of merely improvement of some existing ideas is eagerly expected. It would be easier to get your work published by some improvement, but I would strongly like you to make a new direction for the next era.

Your active contribution through technical committees is also important, by which you can catch up the state-of-the-art technology and you can be involved in the human network. More important is to discuss with other researchers in the same field, to find out the worthy rival for mutual enlightenment, and improve your "abilities as researchers," as mentioned before. One important thing that you must never forget is, however, that many of recently emerging fields are not limited in the scope of the individual technical committee. Those include IoT (Internet of Things), Cybersecurity, QoE (Quality of Experience), and so on. More widely, we are facing with very complex problems like how the knowledge-based society should be established, or how the environmental issues are resolved towards the sustainable society. Those problems should be taken into account when we establish a future social infrastructure based on our information and communication technologies. For challenging to solve those problems, you need to be involved in the multiple communities including technical committees of IEICE-CS and other societies. Working together with research communities with societies other than IEICE is also necessary.

I would like to continue my unstinted efforts to enjoy your academic activities in IEICE-CS. I always welcome your requests and comments for improving your academic life.

How Far is It to Real-Time Communication?

Hisaya Hadama
Department of Communications Engineering
National Defense Academy

1. Introduction

It is a very great honor for me to have been awarded the IEICE Fellow for contributions to research of ATM (Asynchronous Transfer Mode) transport network architecture. ATM has been one of the essential technologies to realize broadband communication network since 1990s. Without ATM, explosive expansion of communication services above broadband Internet and mobile networks would have been impossible.

On this occasion, I would like to discuss about performances of today's broadband networks in comparison with a research vision in '90s. In order to evolve the broadband communication services, a concept of future network were discussed both in IEICE and IEEE. I participated to the study of such a service concept [1] in R&D activities. In this article, based on my memory, based on my memory, I look back the dreams of the young researchers of '90s. Then, I discuss the issue which have to be overcome in the next generation network technology.

In section 2, I describe some dreams for future network of young researchers around me at that time. In section 3, I show some measurement results about performances of current wireless broadband networks. In section 4, I discuss issues and challenges for an attractive future network services.

2. Dreams in 1990s

When I recall those days, we envisioned the following categories as the direction of research.
1) Transmission of Reality

By further progress of broadband, it was a natural direction that rich information content to be able to smoothly transfer through a network. Such a content included digital data of very high definition video and high-resolution audio. With those information, we thought that highly real concert and applications that share the virtual environment would be attractive new services.

During the period from that time until now, wireless access, optical access, such as large-capacity optical communication technology in a core network have undergone a dramatic development. Available bandwidth for an end user has been greatly expanded.
2) Creation of Places for Any Interest Group to Discuss

This aimed to realize an application that could form a community that was not tied to real-world constraints. It also allowed to find community that was in the user's interest. However, at that time, we did not know how to form such an application.

Now, very large-scale social network services exist. Facebook, Twitter and many other social network services are indispensable social information infrastructure to our society.
3) Expansion of Human Capacity

We also aimed that the communication network to support the user to exert unprecedented ability. Those ability included memory storage capacity, language ability, information sorting, representation means and ability of human's sensory organs. We had imagined that ICT (Information Communication Technologies) is always present in the vicinity of the individual. Many devices make up the surrounding environment to support the individual.

Portable smart-phones that has been the key devices that support such applications. At that time, we had the image that various devices are arranged in the environment. However, we could not foresee the mobile phone to be such a key device as current usages.
4) Sophistication of network management

We predicted that creating a safe and secure network is one of the most important issues of future networks. Today, the threat is more and more increasing. We also thought that highly flexible self-adaptive network was a target to be developed for future network management.

At present, SDN (Software Defined Network) has attracted attention as a technique for making flexible network operations.

3. Performance of Current Networks

Performance of a broadband network has improved remarkably for these twenty years. In this section, I show some measurement results of current broadband networks. I think these graphs indicate one of the most important issues to be overcome towards the next generation network.

Figure 1 shows transmission delay characteristic of a wireless LAN [2]. In the experiment, we continuously sent fixed sized (1,488 byte) UDP/IP (User Datagram Protocol over Internet Protocol) packets at the rate of 2,000 packets per second. Wireless transmission distance was 150 [m] and all intervals of sending packets were set to 0.5 [ms]. Vertical axis indicates intervals of received packets and horizontal axis shows sequence number of each packet. In the graph, we see sudden increase of packet transmission delay. It seems very hard to guarantee small delay transmission for wireless LAN.
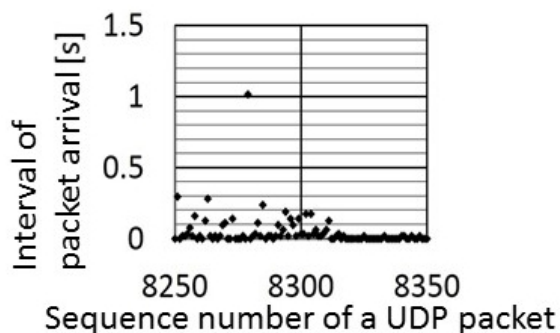
Fig. 1   Transmission delay over a wireless LAN [2]

We also carried out measurements of round trip time (RTT) over network carrier's commercial LTE (Long Term Evolution) services. From November 20th to December 14th of 2014, thirty two students carry their smart-phone in Yokosuka city area. Each smart-phone measured RTT every twenty minutes between the smart-phone and the Web server which was located in Kawasaki city, Japan. Figure 2 shows the results. We can see that RTT takes a small value in many cases, however, it takes a large value of 200 [ms] or more in some cases.
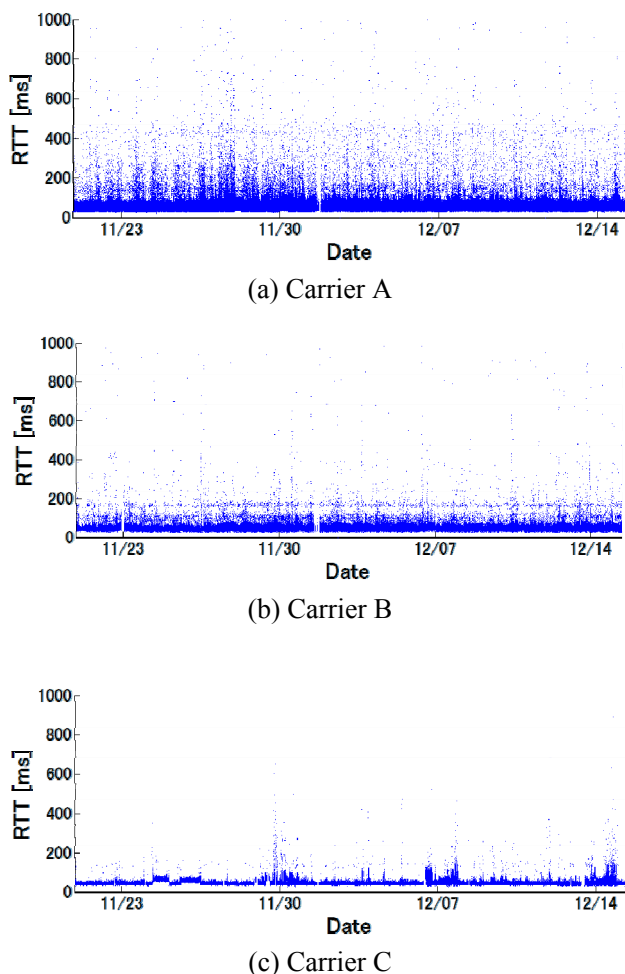

(a) Carrier A

(b) Carrier B

(c) Carrier C

Fig. 2   Transmission delay over LTE services [3]

4. An Attractive New Service

Real-time must be one of the most important issues. If we can guarantee very small transmission delay (e.g. less than 100 [ms]) and always on connectivity with affordable network costs, attractive novel network applications can be realized. An example of such an application might be a remote control system (Fig. 3). By deploying a highly reliable real-time control channels, the equipment to work can be simplified. This lead to low cost remote control systems, and to produce a variety of new applications.
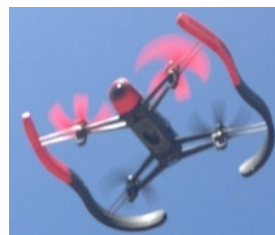
Fig. 3   An example of a real-time remote-controlled system

5. Conclusion

Last year, I received IEICE Fellow for research on ATM transport network. I would like to thank all the people who collaborated with me and supported our research. Many problems have been overcome to achieve current globally available broadband network services. In this article, based on my memory, I described some dreams of network researchers in '90s around me. Many of the dreams have been realized in some form by talented people all over the world. But still there exist a lot of challenges.

Traffic demand and necessary bandwidth are continuously increasing rapidly. There is no doubt that new applications will be continuously appeared. Research and development of 5th generation mobile networks (5G) has just begun. And many other network technologies are needed. I hope many problems will be overcome soon by challenging young researchers.

6. References

[1] H. Hadama, K. Kitami, K. Kinoshita, H. Yamaguchi, "GMN: a broadband multimedia communications service concept and field trials," IEEE Communications Magazine, vol. 37, no. 10, pp. 64-70, Oct. 1999.

[2] N. Chiba, T. Tsuzaki, H. Hadama, "A highly-reliable and small-delay video transmission protocol for un-manned vehicle control," IEICE General Conference 2014, no. B-8-42, p. 2-314, Mar. 2014 (in Japanese).

[3] S. Tanemoto, "Evaluation of transmission qualities of broadband wireless access networks," Graduation thesis of National Defense Academy, Mar. 2015 (in Japanese).

Expectation on IoT with Sensor Network Technology for Our Daily Life

Masayoshi Ohashi
Fukuoka University

1. Introduction

Internet of Things (IoT) has been drawing much attention as the next ICT paradigm. Some of the applications or services include watching the elderly and children, helping the disabled, environment monitoring, HEMS/BEMS, home security, ITS, and healthcare. The primary characteristic of IoT is that its services are modeled around the real world and not around a virtual space. The IoT services often use sensors connected to a network and the results are presented on a smart phone. This article briefly describes the history of IoT in Japan and expectations on IoT for enhancing the quality of our daily life.

2. History of IoT or Ubiquitous Network in Japan

After a predictive statement by Mark Wiser [1], the paradigm of ubiquitous computing has been actively discussed and many prototypes have been developed and trials conducted. In Japan, the term "Ubiquitous network" was ardently announced in the early 2000s as the future ICT paradigm and several big national R&D projects were piloted.

ITU released a report on IoT [2] in 2005 with many contributions from Japan. This can be considered as one of the triggers to make the term popular. MIC (Ministry of Internal Affairs and Communications) began to use the term "u-Japan (ubiquitous Japan)" to establish the future ICT paradigm to create value for people. These terms, though appear different, convey the same meaning in that they provide ICT services on a real world for assisting people in their daily lives. These services are also referred to as context-aware services. In this article, the term "IoT service" is used for convenience.

The author was involved in national, ubiquitous networking R&D projects involving the collaboration of academia and industries [3][4]. A number of experimental prototypes and core component technologies were developed and demonstrated.

At that time, however, the speed of penetration of the IoT services into the market was low. Possible reasons could be that the relevant hardware and software components were not fully available and availability of fewer user-friendly interfaces. In addition, communication costs and storage costs were high. Thus, if context-aware services with ICT technologies became necessary, these had to be developed from scratch.

3. Evolution of IoT Enablers

Several enablers have changed the situation. The biggest one is the advent of smartphone. With smartphones, people obtained user-friendly and intuitive interfaces. The second enabler, undoubtedly, is the advent of cloud computing technology and associated web-based service suites. Several web service providers offer IoT solutions (for example, [5]). One can configure IoT processing on clouds in a short time duration and store much of the sensed data.

The availability of tiny and low-cost sensor nodes, often equipped with wireless access further contribute to sensor-based services. For example, Arduino [6] has earned a good reputation as a sensor platform, using which students may create IoT services rapidly at a low cost. Wearable devices also accelerate the spread of sensing services.
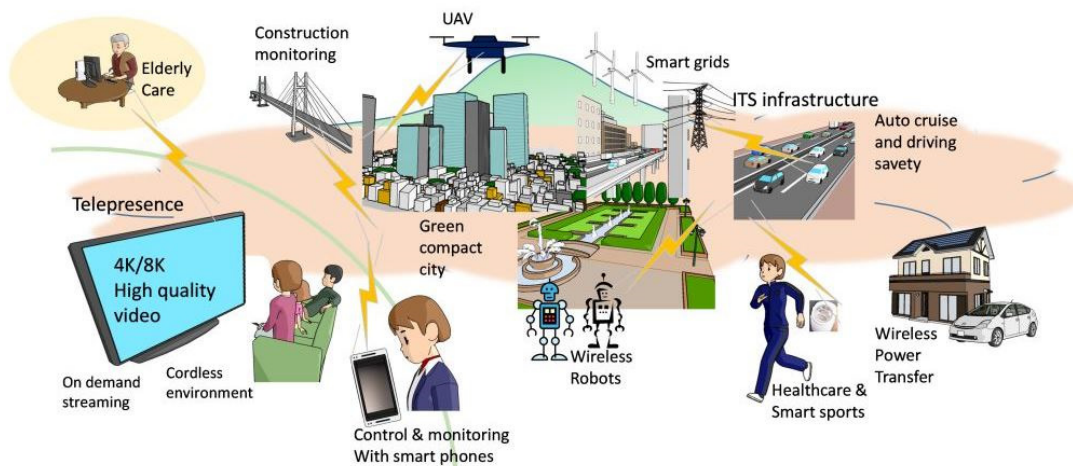
Lastly, the progress of the wireless technology must

Fig. 1　Sketch of future IoT society [8].

be emphasized. Cellular network technology evolved from 3G to 4G LTE and is now preparing for 5G in a very aggressive manner. The evolution of the wireless technology has decreased the cost per bit drastically. Low-energy wireless access is also evolving, in the form of ZigBee and Bluetooth Low Energy (BLE). These technologies might make the operation period of the sensor node much longer. Currently, standardization of a new technology named NarrowBand IoT (NB-IoT) is ongoing [7]. NB-IoT provides low speed but wider coverage. Thus, the wireless sphere is not just seeking high-speed broadband access, but also suitable bit rates with affordable energy consumption to accommodate the various access environments. These are expected to be good candidates for the future wireless sensor access.

4. Penetration of IoT into the Society

We may envisage various applications by making use of these IoT enablers. However, the penetration of IoT is still slow, although it has been discussed a lot. One of the reasons could be that the real value of IoT is still not widely recognized. IoT does not just provide convenient methods or devices, but promises to be a powerful tool for improving business processes and increasing productivity of both industry and humans. Those characteristics are quite important for Japan that suffers from decreasing birthrate and ageing population.

Recently, there have been some good signs of penetration of IoT in Japan. Many positive statements on IoT have been issued by the industry as a tool for improving their way of conducting business. Figure 1 is a sketch of our ICT society in the near future [8]. It mainly focuses on the future wireless access; however, IoT is essential to make this all work.

5. Maintaining Better Quality of Life with IoT

IoT promises benefits to end-users as well. There are many IoT services available for the general public, for example, healthcare improvement programs using wearable sensors or application of security alert services. It is expected that IoT will enhance the lifestyle of users, thus providing them with a better quality of life eventually. Since this will take time, we should make efforts steadily to let people appreciate the value of IoT.

The author thinks that IoT not only contributes to improve the physical health but also the mental condition of users. As an example, let us introduce our IoT R&D trial [9]. It is based on a life log.

Recently, mental suffering due to stress is a serious social problem and even causes damage to the economy. To mitigate this problem, we have got involved in Cognitive Behavior Therapy (CBT), a type of counseling technique, jointly with Kyoto University and ATR.

CBT is, in essence, psychotherapy to monitor and modify one's own thoughts and behaviors. In CBT, patients keep a record of their daily lives and analyze themselves, followed by rebuilding of their cognition from negative thoughts to more realistic and effective thoughts. It is a pragmatic way of improving the condition of one's mind. CBT application was developed on the iPhone (Fig. 2) and a trial conducted using volunteer patients confirms that this application may be effective. We are enhancing CBT by making use of various types of life log data obtained through wearable sensors.

6. Conclusion

A brief history of IoT in Japan has been described and expectations from IoT have been discussed for improving both business processes and quality of daily life. A CBT trial is introduced as an example of IoT for improving mental condition.

7. References

[1] M. Weizer, "The computer for the twenty-first century," Scientific American, pp. 94-104, September 1991.

[2] ITU Internet Reports 2005: The Internet of Things, http://www.itu.int/osg/spu/publications/internetofthings/, accessed April. 14. 2016.

[3] M. Ohashi, "Japanese ubiquitous network project: Ubila," AISE Handbook (Handbook on Ambient Intelligence and Smart Environments), eds. by H. Nakashima, H. Aghajan, and J.C. Augusto, pp. 1223-1250, Springer, 2009.

[4] M. Ohashi, "Introduction of ubiquitous service platform project CUBIQ," Proc. of the 10th International Symposium on Autonomous Decentralized Systems (ISADS 2011), pp. 456-461, Kobe, June 2011.

[5] AWS IoT, http://docs.aws.amazon.com/iot/latest/developerguide/what-is-aws-iot.html.

[6] Arduino, http://www.arduino.cc/.

[7] 3GPP, http://www.3gpp.org/news-events/3gpp-news/1733-niot.

[8] M. Ohashi,"Vision of an evolution of wireless sensor network (in Japanese)," http://www.soumu.go.jp/main_content/000405377.pdf.

M.Ohashi and N.Kawanishi,"Ambient sensor network technologies for global connectivity support", IEICE TRANSACTIONS on Communications, September, 2015. Vol. E98-B(09).
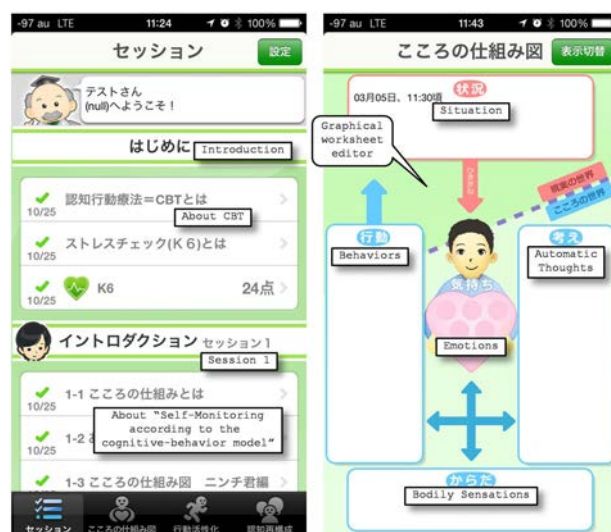
Fig. 2   CBT application on a iPhone.

Report on the 8th IEICE Communications Society (CS) Welcome Party

Moriya Nakamura, Takashi Dateki, Nodoka Mimura, Masakatsu Ogawa, Keijiro Take, and Yasunori Suzuki

IEICE-CS Directors, Planning and Member Activities

1. About Welcome Party

Welcome Party is one of IEICE-CS major activities held at every IEICE General Conference. The objective of having this party is to provide young engineers especially students with a good opportunity to meet and talk friendly with experienced researchers and engineers in various organizations. It had been held at the IEICE Society Conferences in September from 2008 to 2011. However, considering school year in Japan (starting in April), in 2013, we moved it at General Conferences in March so that it can help students to think about their possible engineering carrier just before starting their new school year.

2. Welcome Party at 2016 General Conference

The 8th Welcome Party was held on 15th March 2016, the first day of IEICE General Conference at Ito Campus of Kyushu University in Fukuoka, Japan. We had 184 participants including 54 students. Many foreign students also attended the party.

The first part of the party began with a welcome message from CS president, Prof. Masahiro Umehira (Fig. 1). Then it was followed by introductions of Technical Committee activities and research fields by Chair of Council of Technical Committee Representatives, Prof. Nobuyoshi Kikuma (Fig. 2), and Two Technical Committees of IEICE-CS: Space, Aeronautical and Navigational Electronics (SANE) (Fig. 3) and Communication Systems (CS) (Fig. 4).

After all speeches, the second part of the party started with a toast from CS Vice President, Prof. Tomoaki Ohtsuki (Fig. 5), where foods and drinks were

Fig. 1   Welcome Message from CS President, Prof. Masahiro Umehira

Fig. 2   Introduction of IEICE-CS Technical Committees activities and research fields from Prof. Nobuyoshi Kikuma

Fig. 3   Presentation from Technical Committee on SANE
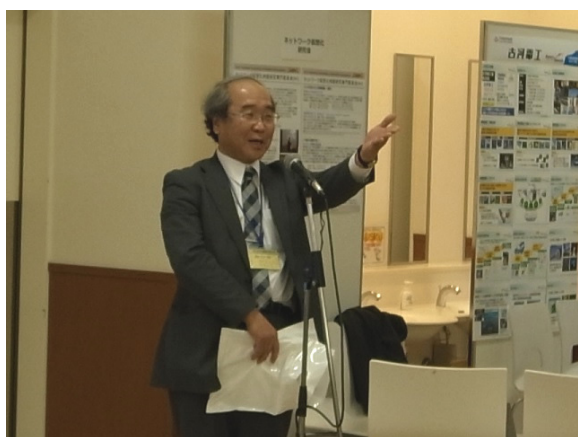
served. During the second part, all participants enjoyed food and drinks (Fig. 6) as well as free talk and discussion at the poster panels (Fig. 7). This year, the poster panels were prepared by 18 companies and national institutes that are active in IEICE-CS and also following 15 Technical Committees, Internet Architecture (IA), Space, Aeronautical and Navigational Electronics (SANE), Electromagnetic Compatibility (EMCJ), Communication Quality (CQ), Information and Communication Management (ICM), Information Networks (IN), Smart Radio (SR), Ambient intelligence and Sensor Networks (ASN), Communication Systems (CS), Network Systems (NS),

Fig. 4   Presentation from Technical Committee on CS

Fig. 7   Talk and discussion at poster panels

Fig. 5   Toast from CS Vice President Prof. Tomoaki Ohtsuki

Fig. 8   Concluding remarks from CS President-Elect (current CS President), Prof. Masayuki Murata

Finally, CS President-Elect (current CS President), Prof. Masayuki Murata concluded the party (Fig. 8).

3. Conclusion and Acknowledgement

The 8th Welcome Party was successfully held with 184 participants at the IEICE General Conference 2016 at Kyushu University in Fukuoka, Japan. Many participants both of young and experienced looked to have enjoyed this event and answered that they wanted to have more time to talk each other in the questionnaire that we collected at the end of the event. We would like to thank all participants, especially from companies, national institutes, and Technical Committee members that gave speeches and/or prepared poster panels to young researchers. We hope to have their cooperation again in the next Welcome Party which will be held in March 2017 at the IEICE General Conference at Meijo University in Nagoya, Japan.

Fig. 6   Enjoying food and drinks

Optical Communication Systems (OCS), Optical Fiber Technology (OFT), Extremely Advanced Optical Transmission Technologies (EXAT), Communication Behavior Engineering (CBE), and Network Virtualization (NV).

Annual Report of Technical Committee on Information and Communication Management (ICM)

Eiji Takahashi (NEC), ICM Secretary
Kazuma Yumoto (Hitachi), ICM Secretary
Masao Murata (Fujitsu), ICM Assistant

1. Introduction

The technical committee on ICM (Information Communication Management) is a technical committee of the Communications Society of the IEICE [1]. This article briefly reports the last year's activities of ICM, and introduces the upcoming English session.

2. Activities

The ICM held two-day technical meetings 5 times from May 2015 to March 2016. The venues and the main topics of each meeting are shown in Table 1. In addition, 3 special sessions were sponsored by ICM as shown in Table 2.

Of particular note, in the English session in 2015 IEICE Society Conference at Tohoku University, the number of papers reached 40 in total. This session was hosted and presented entirely in English. The purpose of this session is to promote the globalization of IEICE by providing the participants staying in Japan or joining from overseas with more opportunities for presentations and discussions in English.

Fig. 1   The panel session at Naha

Furthermore, ICM Workshop 2016 was held in Naha (Okinawa pref.). In the panel session, five invited speakers presented and discussed the theme, to the obvious interest of the more than 50 attendees. A banquet was held to promote social intercourse, and at the same time, to celebrate the ICM annual award winners in 2015.

3. Awards and Upcoming Event

The winners are shown in Table 3. The English Session Encouragement Award is given to the author of the best papers of the English session, every year. ICM committee is now calling for submission for the upcoming English session; the deadline is early in July.

4. Reference

[1]   ICM, http://www.ieice.org/~icm/eng/

Table 1   ICM Technical Meetings in 2015

No	Date	Venue	Main Topics	Joint
1	May 21-22	Beppu International Convention Center (Oita)	Service Management, Operation/Administration, Security Management, etc.	IPSJ-IOT IPSJ-CSEC
2	July 9-10	Sapporo Convention Center (Sapporo)	Management Function, Management Theory, etc.	-
3	Nov. 26-27	Niigata University (Niigata)	Network Quality, Network Management and Measurement, Network Virtualization	CQ NS NV
4	Jan. 21-22	Fukuoka Institute of Technology (Fukuoka)	Applications and Research Opportunities of Life Log, Office Information System and Business Management	LOIS
5	Mar. 10-11	Okinawaken Seinenkaikan (Okinawa)	Element Management, Management Functionalities, Operations and Management Technologies, etc.	-

Table 2   Special Sessions by ICM in 2015

Title	Date	Remarks	Theme
English session	Sept. 8-11	as one of the symposium sessions in IEICE Society Conference	Network and Service Design, Control and Management
APNOMS	Aug. 19-21	the premier conference in the Asia Pacific region sponsored by ICM	-
ICM Workshop	Mar. 10	held in conjunction with ICM Technical Committee Meeting	Analytical Technologies and Operations

Table 3   Winners of ICM Awards in 2015

Award	Winners	Title
Research Award	Takafumi Fujita, et al.	A Framework for Mulltiple M2M Service Sharing on M2M Area Networks
	Takashi Yanase, et al.	Proposal of Evaluation Indexes to Indicate an Easiness of Runbook Automation
English Session Encouragement Award	Tiantian Jiang	Estimation of Crowd Density and Mobility in Mass Event Using Wi-Fi Direct
	Koustubh Gaikwad	Scalable and Cost-effective Live Video Encoding and Delivery in Cloud
	Bo Wei	Throughput prediction based on stochastic model of mobile network
	Bo Gu	Price-Based Access Probability Control for Slotted-Aloha Random Access MAC Protocols

Annual Report of Technical Committee on Information Networks (IN)

Yuichi Sudo[†], Takahiro Hamada[†], Kunitake Kaneko[††], Takeshi Kitahara[†††]
[†]NTT Corporation, [††]Keio University, [†††]KDDI R&D Laboratories Inc.

1. Introduction

The technical committee on Information Networks (IN) is one of technical committees of the Communications Society of the IEICE [1]. The IN addresses a broad spectrum of issues associated with information networks and provides a forum for researchers and engineers to discuss various research and development topics. The chairman is Mr. Hidetsugu Kobayashi of NTT Corporation. The vice chairman is Assoc. Prof. Katsunori Yamaoka of Tokyo Institute of Technology. The secretaries are Mr. Takahiro Hamada of NTT Corporation and Mr. Takeshi Kitahara of KDDI R&D Laboratories Inc. The assistant secretaries are Dr. Yuichi Sudo of NTT Corporation and Assist. Prof. Kunitake Kaneko of Keio Univ. This document presents the IN's annual report for activities from April 2015 to March 2016.

2. IN Activities

The IN is one of the most active technical committees of the IEICE Communications Society. The IN held nine two-day technical meetings from April 2015 to March 2016, some of which are co-organized with another institute (IEE) or other technical committees in IEICE (RCS, ICT-SG, NV, CS, NS, MoNA, IA, and ICN). Many researchers participated in the meetings and reported their latest technical research and development results. The venues and the main topics of each meeting are shown in Table 1.

Each submitted paper is published as a Technical Report of the IEICE. Authors of selected papers have received the 22nd Information Networks Research Awards, and the young first authors (32 years old or less) of selected papers have received the 1st Young Researcher Awards of Information Networks in March 2016 (Figures 1 and 2).

This year, the following three excellent papers were selected from 144 papers for the 22nd Information Networks Research Awards.

- Yasuharu Hirano, Takuya Iwai, Daichi Kominami, and Masayuki Murata, "Implementation of an Acoustic Localization Method for Calling Frog Using a Wireless Sensor Network"
- G. Kawaguti, R. Tagyo, and F. Kobayashi, "Estimation of Web Waiting Time from Network Observation"
- A. Meguro, K. Yokota, A. Tagami, and K. Yamaoka, "Study of Preemptive Distribution to Next Gates on Wireless Access Gate System in MMW Band"

Fig. 1 Winners of IN Research Award in 2015 (From left to right) Y. Hirano, A. Meguro, G. Kawaguti, and H. Kobayashi (Chairman).

Fig. 2 Winners of Young Researcher Award of IN in 2015 (From left to right) T. Hishiki, Y. Teramoto, K. Taniguchi, H. Matsumoto, and H. Kobayashi (Chairman).

In addition, four young authors won the 1st Young Researcher Awards of Information Networks. Time selected papers are as follows.

- Y. Teramoto, B. Hu, T. Kishi, Y. Nagafuchi, T. Koyama, and H. Kitazume, "Intrusion Path Prediction of Advanced Persistent Threat"
- K. Taniguchi, J. Takemasa, Y. Koizumi, and T. Hasegawa, "A Proposal of a Power Consumption Model of a Multicore Software ICN Router Incorporating CPU Power Saving Mechanisms"

- H. Matsumoto, H. Obata, and K. Ishida, "Flow QoS Guarantee Method Using Both Back-off Time Control of CSMA/CA and TCP Congestion Control"
- T. Hishiki, H. Waki, T. Ohba, and A. Koike, "A Study on Network Architecture Based on Architecture Evolution of the Internet"

Reference

[1]   Technical Committee on Information Networks http://www.ieice.org/cs/in/eng/

Table 1   Technical meeting schedule

Date	Venue	Main topics	Num. of reports	Num. of participants each day
May. 21-22 2015	Kikai-Shinko-Kaikan Bldg. (Tokyo)	Wireless Internet, Multi-hop network, Mesh network, Network coding, Cross layer technique, Wireless communication, etc.	13	73, 51
Jun. 18-19	Toyama International Conference Center (Toyama)	Home Area Network (HAN), Green/Energy Saving ICT, Smart Grid, Contingency Plan/BCP, Data Analysis/Processing Platform, Big Data, etc.	9	45, 45
Jul. 16-17	Hokkaido Univ. (Sapporo)	Cloud Networking, SDN, OpenFlow, Virtual Private Network (VPN), Overlay Network/P2P, Network configuration, etc.	16	46, 46
Sep. 3-4	Iwate-ken Kokaido (Morioka)	Post IP networking, Next Generation Network (NGN)/New Generation Network (NWGN), Contingency Plan/BCP, Network Coding/Network Algorithms, Session Management (SIP/IMS), Internetworking/Standardization, Network configuration, etc.	14	63, 48
Oct. 15-16	Osaka Univ. (Osaka)	Contingency Plan/BCP, Robustness, Security and Privacy, Authentication/ID management, Web Service/SOA/ROA Platform, Social Networking Service (SNS), etc.	8	24, 17
Nov. 17-18	Kumamoto Univ. (Kumamoto)	Ubiquitous Network, BYOD, M2M, Contextware, Mobile Social Service, Mobile Service on Virtualization Environment, Mobile Offload, etc	10	46, 26
Dec. 17-18	Hiroshima City Univ. (Hiroshima)	Performance Analysis and Simulation, Robustness, Traffic and Throughput Measurement, Quality of Service (QoS) Control, Congestion Control, Overlay Network/P2P, IPv6, Multicast, Routing, DDoS, etc.	24	71, 39
Jan. 21-22 2016	Nagoya Kigyo Fukushi Kaikan (Nagoya)	Contents Delivery/Contents Exchange, Social Networking Service (SNS), Data Analysis/Processing Platform, Big Data, etc.	13	24, 26
Mar. 3-4	Phoenix Seagaia Resort (Miyazaki)	General topics and workshop	46	161, 172

Report on 32nd IN/NS Research Workshop

Shohei Kamamura[†], Hideki Maeda[†], Takuji Tachibana[††],
Hideki Tode[†††], Atsushi Hiramatsu[††††], Yuichi Sudo[†],
Kunitake Kaneko[†††††], Takahiro Hamada[†], Takeshi Kitahara[††††††],
Katsunori Yamaoka[†††††††], and Hidetsugu Kobayashi[†]

[†]NTT Corp., [††]Univ. of Fukui, [†††]Osaka Pref. Univ.,
[††††]NTT-AT Corp., [†††††]Keio Univ.,
[††††††]KDDI R&D Laboratories Inc., and [†††††††]Tokyo Inst. of Tech.

1. Introduction

The 32nd IN/NS Research Workshop took place in Miyazaki, Japan, on March 3, 2016. The workshop was sponsored by the technical committee on Information Networks (IN) and Network Systems (NS) of the IEICE Communications Society. The workshop's aim was to discuss the technical direction and research topics for future networks. A record showing of 132 participants testified to the success of the workshop (Fig. 1). The overall theme was "Security in the IoT (Internet of Things)/NFV (Network Function Virtualization) era." The workshop featured one invited talk session and one panel session.

Fig. 1   Audience-filled hall.

Fig. 2   Opening speech of the workshop
Mr. Kobayashi.

2. Invited Speakers

The general chair of the workshop, Mr. Hidetsugu Kobayashi (NTT Corp.), invited 5 distinguished experts in security, IoT, or NFV (Fig. 2). These speakers addressed the network security, the security by design, and the security of operation for the IoT and NFV. Figures 3 to 7 show photographs of the speakers.

- Prof. Hideyuki Tokuda (Keio University) presented the evolution of IoT and the impact of IoT on society.

Fig. 3   Invited speaker: Prof. Tokuda.

- Dr. Tsukasa Ogino (Connected Consumer Device Securiy Council) presented the trends and countermeasures of the security of IoT based on a vulnerability report for embedded devices.

Fig. 4   Invited speaker: Dr. Ogino.

• Prof. Atsuhiro Goto (Institute of Information Security) presented the provision of the cyber security of the critical infrastructure in the IoT era.

Fig. 5   Invited speaker: Prof. Goto.

• Mr. Masashi Shimizu (UPR Corp.) presented the challenges of smart pallet with ultra-low energy wireless devices.

Fig. 6   Invited speaker: Mr. Shimizu.

• Mr. Yoshikatsu Okazaki (NTT Corp.) presented the network architecture and security for the NFV era.

Fig. 7   Invited speaker: Mr. Okazaki.

3. Panel Session

After the invited talks, the panel session was held. The session was moderated by the general chair, Mr. Kobayashi. All of the above invited speakers were invited as panelists. In this session, the challenges of the security in the IoT and NFV were discussed.

4. Conclusion

This year's workshop invited key persons to speak on the security in the IoT and NFV. The audience filled the hall as shown in Fig. 1. We believe that the presentations given by the invited speakers and the discussion provided fruitful insight into research and development.

The technical committee on NS and IN plans to hold next year's workshop in March 2017. Finally, we would like to express our gratitude to the workshop committee members, particularly to Tadashi Komatsu (NEC Corp.), Masashi Ito (TOSHIBA Corp.), Takeshi Kodama (FUJITSU LABORATORIES Ltd.), Daisuke Mashimo (Hitachi, Ltd.), and Tatsuro Kimura (NTT Corp.) who made this workshop possible.

Report on the 3rd Asian Workshop on Antennas and Propagation (AWAP2016)

Minseok Kim
Niigata University
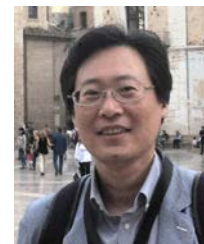
1. Introduction

This article reports on the third Asian Workshop on Antennas and Propagation (AWAP2016) that was held at Haeundae centum hotel in Centum city, Busan, Korea, on January 27-29, 2016. Centum city, a new urban development project in Busan, is now Korea's most sought-out shopping destination and a major symbol of all things fashion.

This workshop was jointly organized by the technical group on antennas and propagation of the Korean Institute of Electromagnetic Engineering and Science (KIEES), Korea, the technical committee on antennas and propagation of the Institute of Electronics, Information and Communication Engineers (IEICE), Japan, and electromagnetic group of the Electrical Engineering / Electronics, Computer, Telecommunications and Information Technology Association (ECTI), Thailand.

2. Brief History of AWAP

AWAP originates from Korea-Japan Joint Conference (KJJC). In 2012, AP groups started to have a separate meeting as Korea-Japan workshop on Antennas and Propagation (KJAP). In 2013, KJAP was held at Gwangju Institute of Science and Technology (GIST), Korea, during January 9-10, 2013. In 2014, Korea-Japan workshop grew to Asian Workshop to welcome participants from all over the world.

AWAP2014, the first AWAP, was held in Kanazawa Theatre in Kanazawa, Japan, during May 14-16, 2014 [1]. Then, in 2015, the second AWAP, AWAP2015 was held at Swissotel Le Concorde in Bangkok, Thailand, during June 17-18, 2015 [2]. In the third AWAP, AWAP2016, Prof. Seong-Ook Park (KAIST, Korea), Prof. Qiang Chen (Tohoku Univ., Japan) and Prof. Titipong Lertwiriyaprapa (KMITL, Thailand) served as general co-chairs.

AWAP is intended to provide an international forum for the exchange of information on the progress of research and development in antennas, propagation, and related fields. A matter of the greatest importance of this meeting is to promote friendship among the participants.

3. Technical Sessions

The technical program of AWAP2016 consisted of a regular session and an invited session where 16 papers in regular sessions, 17 papers in the invited session with 1 plenary talk were presented. Total number of registered participants reached 53, including 32 from Korea, 16 from Japan, 4 from Thailand and 1 from Taiwan.

The presented papers covered a wide range of unique and novel technical topics on antennas and propagation. On the first day of the workshop, the regular sessions were held in parallel where most of the papers were presented by young researchers and the three best papers were selected among them. On the second day, the opening ceremony was conducted by general co-chairs, where the certificates of appreciation were awarded to Prof. Keizo Cho and Prof. Monai Krairiksh, the former general co-chairs of AWAP2015 (Fig. 1). Before beginning the invited session, Prof. Toshikazu Hori gave a keynote speech on "Low-Profile Design of Meta-Surface with Frequency Selective Surface and Its Application." After keynote speech, Electromagnetics award was delivered to him for his leadership and contribution to AP society (Fig. 2).

Fig. 1   Opening ceremony (Certificate of appreciation was awarded to Prof. Keizo Cho)

Fig. 2   Keynote speech (Prof. Hori received Electromagnetics award)

In the invited session, a variety of interesting topics and recent results were presented from 17 prominent professors and researchers. After all of the technical sessions, all participants were gathered together and took a group photograph to leave a memory as shown in Fig. 3.

4. Social Events

At the first night, the welcome reception was held at a Korean popular restaurant, "Ahn-Chae" which means "the main building." With Prof. Hori's proposing a toast, the participants enjoyed the delicious Korean cuisine and beverage in a very much convivial atmosphere (Fig. 4).

At the second night, the participants enjoyed a cruise banquet offering breathtaking views of the Busan Sea (Fig. 5). They could take in the views of the numerous beautiful coastal sites, including Dongbaek Island, Taejongdae, Centum City, Gwangandaegyo Bridge, the nation's largest marine bridge, and etc. In the beginning of the banquet, the award ceremony was held. Among the participants from Japan, Prof. Yuichi Kimura and Prof. Minseok Kim received the best paper award and the excellent research award respectively. Then, a few senior members in AP society including Prof. Hiroyuki Arai, Prof. Monai Krairiksh, Prof. Kin-Lu Wong, Prof. Jaehoon Choi, Prof. Toru Uno, Prof. Young-Joong Yoon, Prof. Keizo Cho, Prof. Sangwook Nam, and Prof. Ikmo Park delivered consecutive brief speeches about the future events emphasizing friendship and cooperation within Asian AP society members. In the banquet, the participants spent their last night in Busan enjoying various Korean foods with wines.

5. Closing Remarks

As reported above, AWAP2016 was finished with a great success (see more information and photographs at [3]). In the AWAP steering committee meeting held in the lunch break of the second day, it was decided that the fourth AWAP, AWAP2017 will be held at the Hokkaido region, Japan in the end of June 2017 and will also be organized by four countries (Japan, Korea, Thailand and Taiwan). See you all in Hokkaido!

6. References

[1] Kunio Sakakibara, "Report on the 2014 Asian Workshop on Antenna and Propagation (AWAP2014)", IEICE Com. Society Global Newsletter Vol. 38, No.3, pp.14-15.

[2] Masayuki Nakano, "Report on the 2015 Asian Workshop on Antenna and Propagation (AWAP2015)", IEICE Com. Society Global Newsletter Vol. 39, No.4, pp.10-11.

[3] Website of AWAP2016, IEICE Technical Committee on Antennas and Propagation, https://www.ieice.org/cs/ap/jpn/index.php?awap/awap2016

Fig. 4   Welcome party with Korean cuisine at the first night
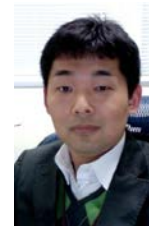

Fig. 5   Cruise banquet at the second night

Fig. 3   All attendees at AWAP2016 in Busan, Korea

Report on NS English Session at 2016 IEICE General Conference −BS-3 Advanced Networking Technologies for Innovative Information Networks−

Yukinobu Fukushima*, Takuji Tachibana**, Shohei Kamamura***,
Hideki Maeda***, Hideki Tode†, and Atsushi Hiramatsu††
*Okayama Univ., **Univ. of Fukui, ***NTT Corp.,
†Osaka Pref. Univ., ††NTT-AT Corp.

1. Introduction

The 2016 IEICE General Conference was held at Kyushu University in Fukuoka, Japan, on March 15-18, 2016. In the conference, the IEICE Technical Committee on Network Systems (NS) [1] provided the complete English Symposium Session entitled "Advanced Networking Technologies for Innovative Information Networks" as one of the nine Symposium Sessions hosted by IEICE Communications Society.

2. Background

NS has been providing the complete English Session since 2005, in order to promote the globalization of IEICE. The Session has been a good opportunity for the attendees staying in Japan or joining from overseas to make presentations and discuss in English.

This year, 44 papers were submitted to the Session, which enabled to organize sessions during whole of four-days conference period. Table 1 and Fig. 1 show the history of the Session.

3. Topics and Statistics

The papers were classified into 12 sub-sessions based on the topics. The sub-sessions were held every day during the General Conference. In each sub-session, a wide range of topics including advanced networking technologies such as optical networking, next-generation network architecture represented by ICN/CCN, network virtualization represented by SDN/NFV, wireless networking, and others were actively discussed among the attendees every day, as shown in Fig. 2.

Fifteen to forty General Conference attendees joined at each sub-session. The discussions between speakers and attendees in each sub-session were very active and they exchanged opinions each other in detail. Since the time assigned to question-and-answer periods was relatively limited, they frequently continued discussion here and there even during the break periods.

4. Conclusion

NS English Session was very successful thanks to many excellent papers and active discussions. The organizer believes that this activity is fruitful for all participants and effective for the globalization of IEICE. In addition, NS awards a prize to the selected papers in each year to encourage their continuous activities [2].

Table 1   Past three themes of NS English Session.

Year	Theme
2014	Future Network Technologies for Advanced Information and Communications Society
2015	Advanced Technologies in the Design, Management and Control for Future Innovative Communication Network
2016	Advanced Networking Technologies for Innovative Information Networks
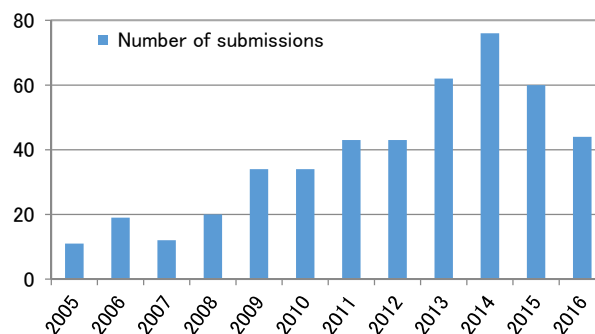
Fig. 1   Number of submissions for NS English Session.

Fig. 2   Scene of NS English Session.

Finally, we would like to give special thanks to Prof. Yoshiaki Tanaka, who has been making great contributions to the devoted invitation activities utilizing his nation-wide academic authority and human relations.

5. Reference

[1]   IEICE Technical Committee on Network Systems web site, http://www.ieice.org/~ns/eng/.

[2]   Atsushi Hiramatsu, et al.: "Report on the 2015 NS English Session Awards and Award Ceremony," *IEICE Global NewsLetter*, vol. 40, no. 1, pp. 16-17, March 2016.

Report on ICOIN 2016

Hiroki Takakura
National Institute of Informatics

1. Introduction

The International Conference on Information Networking (ICOIN) [1] is an international conference under the organization of Korea Institute of Information Scientists and Engineers (KIISE) with technically cosponsored by IEEE Computer Society, and IEICE-CS Technical Committee on Internet Architecture. The committee was advised by KIISE members to support ICOIN activities, and has decided to have technical co-sponsorship of IEICE-CS to ICOIN from 2012. Support of IA members to ICOIN includes a distribution of Call For Papers, paper reviews and so on. The 30th ICOIN 2016 was held in Kota Kinabalu, Malaysia, from January 13 through January 15, 2016.

2. Statistics

237 papers were submitted to the conference from 22 countries. Through EDAS[2], at least three expert researchers reviewed each of these paper. 133 TPC members from 21 countries participate as reviewers.

After the review process, 101 papers were accepted for the oral and poster presentation. 57 oral presentations were categorized into 12 sessions. The sessions covered a wide variety of topics including "Ad hoc/sensor networks", "IoT and Middleware", "Cloud and Mobile communication". "SDN", "Security and Privacy".

3. Technical Session

The various oral and poster presentations were performed for three days. For example, E. Larsson, et al. reported a survey of popular 160,000 HTTPS-enabled websites over three years[3]. As the results, insecure configurations can remain elsewhere for a long period of time even if they are well known. The best practice information can contribute to reducing such situation.

H. M. Song. et al. proposed a lightweight intrusion detection algorithm for CAN bus in vehicles[4]. By analyzing time intervals of CAN messages, they can detect three types of message injection attacks without making false positive errors.

M. Y. Jo suggested a mobile agent-based method for SDN controller deployed on MANET environment[5]. The agent contributes to recognizing the fluid state of the mobile ad-hoc network. For the automatic recognition of network structure and the control of nodes, a procedure of the agent was described. By

Fig. 1   Opening Ceremony

changing network dynamically, it is possible to provide self-controlled network for MANET environment.

There were also many other interesting papers, and participants and presenter had active discussions.

4. Conclusion

ICOIN 2017 is announced to be held in Da Nang, Vietnam. The Technical Committee on Internet Architecture will continue to support the conference and hope plenty of submissions from Japan, particularly from the member of Communication Society.

5. References

[1]   http://www.icoin.org
[2]   http://edas.info
[3]   E. Larsson, J.Sigholm, "Papering Over the Cracks: The Effects of Introducing Best Practices on the Web Security Ecosystem," in Proc. of ICON2016, pp.1-6, Jan. 2016.
[4]   H. M. Song, H. R. Kim, H. K. Kim, " Intrusion Detection System Based on the Analysis of Time Intervals of CAN Messages for In-Vehicle Network," in Proc. of ICON2016, pp.63-68, Jan. 2016.
[5]   M. Y. Jo, K. Kim, "A Research on the Regional Routing Scheme based Mobile Agent for SDN," in Proc. of ICON2016, pp.211-213, Jan. 2016.

Report on IEEE WCNC 2016
2nd International Workshop on Smart Spectrum (IWSS 2016)

Mai Ohta
Fukuoka University

1. Introduction

The first International Workshop on Smart Spectrum (IWSS) was held at New Orleans, The United States of America on March 9, 2015 in conjunction with IEEE Wireless Communications and Networking Conference (WCNC) 2015.

The second IWSS is organized in conjunction with IEEE WCNC 2016, which was held at Doha, Qatar on April 3-6, 2016. IWSS was held on April 3, and consists of keynote sessions (2 speeches), oral sessions (6 papers), and poster session (5 posters). IWSS is cooperated with IEICE Communications Society.

2. Interesting Topics of IWSS and Purpose

IWSS focuses on wireless network technology based on spectrum measurement, spectrum utilization modeling, and their applications for dynamic spectrum access. One part of topics is the follows, but are not limited to:

- Spectrum measurement techniques (wideband, long-term, and wide area measurements)
- Spectrum measurement campaign and system prototyping
- Multidimensional spectrum utilization models
- Statistical modeling of radio environment
- Radio propagation modeling for spectrum sharing
- Cognitive radio networks and dynamic spectrum access
- Spectrum sensing techniques based on statistical modeling
- MAC layer access protocol design based in statistical modeling

The purpose of IWSS is to find new spectrum world for future mobile communications!

3. Summary of WCNC 2016 and IWSS

IEEE WCNC 2016 received 1,137 papers and then accepted 544 papers. 10 workshops were accepted and were held at the same time.

In IWSS, 6 papers for oral sessions and 5 papers for poster session were accepted from submitted 23 papers. IWSS consists of Keynote session that has two speeches, Oral sessions titled on "Spectrum Occupancy Measurements and Techniques" and "Cognitive Radio Networks and Dynamic Spectrum Access", and Poster session together Networking Break.

Fig. 1   IEEE WCNC 2016 2nd International Workshop on Smart Spectrum (IWSS) [1]

Fig. 2   Prof. K. Umebayashi (TPC co-chair) [Opening Speech]

Fig. 3   Participant in IWSS

Fig. 4   Poster Session in Foyer

Fig. 5   Dr. J. Lehtomäki [Keynote Speech]

Fig. 6   Dr. H. Menouar [Keynote Speech]

Keynote Session and Oral Sessions had around 20 attendees. In Poster Session, poster presentations of 4 workshops were held on the same time and at the same foyer, and each presenter had flash talk of 2 minutes without slides at the beginning of the poster session.

4. Keynotes

Two keynote speakers presented as follows:
- "Trends, Research Activities, and Views on Future Spectrum Management," Keynote speech by Janne Lehtomäki (University of Oulu, Finland), Takeo Fujii (University of Electro-Communications, Japan), and Brian Mark (George Mason University, USA)
- "Vehicle Communications and Spectrum Allocation: State of the Art & Trends," Keynote speech by Hamid Menouar (Qatar Mobility Innovations Center, Qatar)

5. Best Paper Award

IWSS awarded two papers with the best paper award as follows:
- "**A study on Welch FFT segment size selection method for spectrum awareness**", Hiroki Iwata, Kenta Umebayashi and Samuli Tiiro (Tokyo University of Agriculture and Technology, Japan), Janne Lehtomäki (University of Oulu, Finland), and Yasuo Suzuki (Tokyo University of Agriculture and Technology, Japan)
- "**Coexistence between OFDM and Pulsed Radars in The 3.5 GHz Band with Imperfect Sensing**," Seungmo Kim and Junsung Choi (Virginia Tech, USA), and Carl B. Dietrich (Virginia Tech & Wireless @ Virginia Tech, USA)

6. Aspect of Qatar

Qatar has sea, desert, park and buildings. Water and food is good for Japanese people more than expected. Whereas the number of people that walk on the sidewalk decreases in the daytime, the downtown area at night on everyday draw not only many tourists but also the local people.

If you will visit Qatar, this season is recommended for pleasant trip. Though the taxi is convenience for movement, you should be careful with overcharging of the fare.

Fig. 7   L: Mr. H. Iwata, C: Mr. S. Kim (Winners) R: Prof. T. Fujii (General co-chair) [Best Paper Award]

Fig. 8   View of Buildings from Downtown

Fig. 9   Desert and Camel (QR20, about 600m)

7. References

[1]   https://smartspectrum.wordpress.com/

IEICE-CS Related Conferences Calendar

Date	Conference Name	Location	Note
20. Nov. – 23 Nov. 2016	5th International Conference on Renewable Energy Research and Applications (**ICRERA2016**)	Birmingham, UK	Submission deadline: 15 Jun. 2016
24 Oct. – 28 Oct. 2016	International Symposium on Antennas and Propagation (**ISAP2016**)	Okinawa, Japan	Submission deadline: Closed
19 Oct.– 21 Oct. 2016	International Conference on Information and Communication Technology Convergence 2016 (**ICTC2016**)	Jeju Island, Korea	Submission deadline: 1 Jul. 2016
5 Oct. – 7 Oct. 2016	Asia-Pacific Network Operations and Management Symposium (**APNOMS2016**)	Kanazawa, Japan	Submission deadline: Closed
25 Aug. – 27 Aug. 2016	22nd Asia-Pacific Conference on Communication (**APCC2016**)	Yogyakarta, Indonesia	To be held **soon**
5 Jul. – 8 Jul. 2016	The 8th International Conference on Ubiquitous and Future Networks 2016 (**ICUFN2016**)	Vienna, Austria	To be held **soon**
3 Jul. - 7 Jul. 2016	21st Optoelectronics and Communications Conference / International Conference on Photonics in Switching 2016 (**OECC/PS 2016**)	Niigata Japan	To be held **soon**
27 Jun. – 30 Jun. 2016	The 36th IEEE International Conference on Distributed Computing Systems (**ICDCS2016**)	Nara, Japan	To be held **soon**
14 Jun. - 17 Jun. 2016	2016 IEEE 17th International Conference on High Performance Switching and Routing (**IEEE HPSR2016**)	Yokohama Japan	To be held **soon**
25 Apr. 2016	Eighth IEEE/IFIP International Workshop on Management of the Future Internet (**ManFI2016**)	Istanbul, Turkey	Done
3 Apr. – 6 Apr. 2016	The 2nd International Workshop on Smart Spectrum (**IWSS2016**)	Doha, Qatar	**Reported** on this issue
13 Jan. – 15. Jan. 2016	The 30th International Conference on Information Networking (**ICOIN2016**)	Kota Kinabalu, Malaysia	**Reported** on this issue

Please confirm with the following IEICE-CS web site for the latest information.
http://www.ieice.org/cs/conf/calendar.html

Special Section Calendar of IEICE Transactions on Communications

Issue	Special Section	Note
Feb. 2018	Recent Progress in Antennas and Propagation in Conjunction with Main Topics of ISAP2016	Submission due: 15 February 2017 **See page 25**
Aug. 2017	Radio Access Technologies for 5G Mobile Communications System	Submission due: 2 September 2016 **See page 24**
Jul. 2017	Smart Radio and Its Applicationsin Conjunction with Main Topics of SmartCom	Submission due: 2 August 2016 **See page 23**
Jun. 2017	Visible Light Communications in Conjunction with Topics of ICEVLC 2015	Submission due: 1 July 2016 **See page 22**
May 2017	No special section in this issue	
Apr. 2017	No special section in this issue	
Mar. 2017	No special section in this issue	
Feb. 2017	Antenna and Propagation Technologies Contributing to Realization of Next Generation Wireless Systems	To be issued
Jan. 2017	Challenged Networking Technologies and Its Service Quality	To be issued
Dec. 2016	Information Centric Networking: Paradigms, Technologies, and Applications	To be issued
Nov. 2016	Deepening and Expanding of Information Network Science	To be issued
Oct. 2016	Satellite Communication Technologies in Conjunction with Main Topics of JC-SAT2015	To be issued
Sep. 2016	Integration Technologies of Ambient Intelligence and Sensor Networks	To be issued
Aug. 2016	Advanced Information and Communication Technologies and Services in Conjunction with Main Topics of APCC2015	To be issued **soon**
Jul. 2016	No special section in this issue	
Jun. 2016	European ICT R&D Project Activities on Broadband Access Technologies in Conjunction with Main Topics of 2015 IEICE ICT Forum	To be issued **soon**
May 2016	Internet Architectures and Management Methods that Enable Flexible and Secure Deployment of Network Services	Vol. E99-B, No.5
Apr. 2016	Autonomous Decentralized Systems Technologies and Applications for Next-Generation Social Infrastructure	Vol. E99-B, No.4

Please confirm with the following IEICE web site for the latest CALL FOR PAPERS
http://www.ieice.org/event/ronbun-e.php?society=cs

Special Section on Visible Light Communications in Conjunction with Topics of ICEVLC 2015

The IEICE Transactions on Communications announces that it will publish a special section entitled "Special Section on Visible Light Communications with Conjunction with Topics of ICEVLC 2015" in the **June 2017** issue. **(Accepted papers will be available through IEICE Transactions Online (https://search.ieice.org) from Dec. 2016.)[1].**

2014 Nobel Prize in Physics went to Profs. Isamu Akasaki (Meijo University and Nagoya University), Hiroshi Amano (Nagoya University), and Shuji Nakamura (University of California, Santa Barbara) for the invention of efficient blue light-emitting diodes (LEDs). The Nobel Assembly wrote in the prize announcement that "incandescent light bulbs lit the 20th century; the 21st century will be lit by LED lamps." LEDs are not just energy efficient lighting sources, they can also be used for data communications. Because LEDs can be modulated at high speeds that are undetectable by the human eye, visible light communication (VLC) provides the dual functionality of lighting and communication. As a result, LEDs are sometimes referred to as "light emitting data." VLC offers good advantages to radio frequency (RF) communications including free license, wide bandwidth and no interference. Furthermore, data reception by a camera embedded in Smartphones and portable devices is possible. This results in new and attractive interests in the implementation of VLC using an image sensor as a receiver (image sensor communication). The goal of this special section is to present a collection of articles focusing on the state of the art in visible light communications in conjunction with topics of International Conference and Exhibition on Visible Light Communications 2015 (ICEVLC2015) held in Yokohama, Japan on Oct. 25-26, 2015. The special section solicits paper submissions particularly from, **but not restricted to**, researchers who presented their original works in ICEVLC 2015.

1. Scope

We call papers of both academic and industrial contributions, covering various topics of interest that include, but not limited to:

- Visible light communications using image sensor (Image sensor communication)
- Multi-sensor visible light communications
- Multi-transmitter visible light communications
- New devices for visible light communications
- Medium access for visible light communications including multiuser access and duplexing
- Underwater visible light communications
- Location services using visible light communications
- Applications of visible light communications including vehicular communication, home/office/factory networks, Internet of Things (IoT), etc.

2. Submission Instructions

The standard number of pages is 8. The page charges are considerably higher for extra pages. Manuscripts should be prepared according to the guideline in the "Information for Authors." The latest version is available at the web site, http://www.ieice.org/eng/shiori/mokuji_cs.html. The term for revising the manuscript after acknowledgement of conditional acceptance for this special section could be shorter than that for regular issues (60 days) because of the tight review schedule.

This special section will accept papers only by electronic submission. Submit a manuscript and electronic source files (LaTeX/Word files, figures, authors' photos and biographies) via the IEICE Web site https://review.ieice.org/regist/regist_baseinfo_e.aspx by **July 1st, 2016 (JST)**. Authors should choose the **Visible Light Communications in Conjunction with Topics of ICEVLC 2015** as a "Journal/Section" on the online screen. Do not choose [Regular EB].

Contact point:
Yusuke Kozawa
Department of Electrical Engineering, Tokyo University of Science.
Tel: +81-4-7124-1501 (Ext. 3734), E-mail: eb-vlc@mail.ieice.org

3. Special Section Editorial Committee

Guest Editor-in-Chief: Masao Nakagawa (Keio University)
Guest Editors: Masato Saito (University of the Ryukyus), Yusuke Kozawa (Tokyo University of Science)
Guest Associate Editors: Shinichiro Haruyama (VLCA, Keio University), Iwao Sasase (Keio University), Takaya Yamazato (Nagoya University), Tadashi Ebihara (University of Tsukuba), Saeko Oshiba (Kyoto Institute of Technology), Osamu Takyu (Shinshu University), Wataru Chujo (Meijo University), Anh T. Pham (University of Aizu), Hiroyuki Yashima (Tokyo University of Science), Hiromasa Habuchi (Ibaraki University)

* Authors must agree to the "Copyright Transfer and Page Charge Agreement" via electronic submission.
* Please note that if the submitted paper is accepted, all authors, including authors of invited papers, are requested to pay for the page charges covering partial cost of publications.
* At least one of the authors must be an IEICE member when the manuscript is submitted for review. Invited papers are an exception. We recommend that authors unaffiliated with IEICE apply for membership. For membership applications, please visit http://www.ieice.org/eng/member/OM-appli.html

[1] For more information about the advance publication, please visit http://www.ieice.org/eng/shiori/page2_cs.html.

Special Section on Smart Radio and Its Applications in Conjunction with Main Topics of SmartCom

The IEICE Transactions on Communications announces that it will publish a special section entitled "Special Section on Smart Radio and Its Applications in Conjunction with Main Topics of SmartCom" in the **July 2017** issue.

Aiming at tackling with the rapid growth of mobile traffic and consequently the spectrum scarcity problem, research and development on highly efficient spectrum resource utilization have become more and more active. Meanwhile, discussions for next generation wireless network such as 5G and beyond mobile communications have been started which could support a wide variety of applications including Machine-to-Machine (M2M), Internet of Things (IoT), etc. Such multi-functional wireless terminals and/or advanced wireless networks can be treated as Smart Radio. The concept of Smart Radio covers: reconfigurable software defined radio; cognitive radio and dynamic spectrum access functionality; heterogeneous and cooperative wireless networks; and their integrations. Under such circumstances, the workshop on Smart Radio technologies (SmartCom) has been held since the year of 2014. In order to further promote research and development in the field of wireless communications and build up emerging technologies for next generation wireless network with Smart Radio, a special section is being planned (scheduled to appear in the July 2017 issue). The special section is not limited to the submissions from authors of SmartCom, but will also receive the submission of papers on the research topics covered by SmartCom.

1. Scope

This special section aims at timely dissemination of research in these areas. Possible topics include, but are not limited to:

(1) **Heterogeneous wireless networks** (Ultra-broadband small cell deployment, C/U splitting, Mobility management, Dynamic cell structuring, Backhaul/fronthaul architecture, Cloud cooperated radio resource control)

(2) **Cognitive radio networks and dynamic spectrum management** (Spectrum sensing and measurement, MAC and networking protocols, Learning in cognitive radio networks, Applications based on cognitive radio, Regulatory policies, Green cognitive radio)

(3) **Communication theory** (Network information theory, Coding theory, Physical-layer security, Theory of compressed sensing)

(4) **Wireless distributed network, MAC protocol and network management** (Cross layer wireless networks, Sensor networks, High density wireless networks, Wireless network virtualization, SDN, ITS, Network controlled D2D communication)

(5) **Hardware architecture and implementations** (Broadband and multiband antennas, Multiband and multimode RF/analog circuits. Reconfigurable baseband circuits, Implementation of testbeds and prototypes for Smart Radio and 5G including new RAT)

(6) **Advanced wireless technologies** (Massive MIMO, Interference control, Full-duplex communications, Advances in millimeter and terahertz waves, Nano sensor networks, Wireless power transfer, Visible light communications, Dynamic TDD)

2. Submission Instructions

The standard number of pages is 8. The page charges are considerably higher for extra pages. Manuscripts should be prepared according to the guideline in the "Information for Authors." The latest version is available at the web site, http://www.ieice.org/eng/shiori/mokuji_cs.html. The term for revising the manuscript after acknowledgement of conditional acceptance for this special section could be shorter than that for regular issues (60 days) because of the tight review schedule.

This special section will accept papers only by electronic submission. Submit a manuscript and electronic source files (LaTeX/Word files, figures, authors' photos and biographies) via the IEICE Web site https://review.ieice.org/regist/regist_baseinfo_e.aspx by **August 2, 2016 (JST)**. Authors should choose the Smart Radio and Its Applications in Conjunction with Main Topics of SmartCom as a "Journal/Section" on the online screen. Do not choose [Regular EB].

Contact point:
Suguru Kameda
Research Institute of Electrical Communication, Tohoku University
Tel: +81-22-217-6121,   E-mail: sr_ac-eb-smartcom@mail.ieice.org

3. Special Section Editorial Committee

* Authors must agree to the "Copyright Transfer and Page Charge Agreement" via electronic submission.

* Please note that if the submitted paper is accepted, all authors, including authors of invited papers, are requested to pay for the page charges covering partial cost of publications.

* At least one of the authors must be an IEICE member when the manuscript is submitted for review. Invited papers are an exception. We recommend that authors unaffiliated with IEICE apply for membership. For membership applications, please visit http://www.ieice.org/eng/member/OM-appli.html

— Special Section on Radio Access Technologies for 5G Mobile Communications System —

IEICE Transactions on Communications announces that it will publish a special section entitled "Special Section on Radio Access Technologies for 5G Mobile Communications System" in the **August 2017** issue.

As the fourth generation mobile communications system (4G), the Long Term Evolution (LTE)-Advanced has been already rolled out worldwide and the studies on the fifth generation mobile communications system (5G) are being activated more and more toward the launch of service in 2020. In many worldwide 5G-related organizations represented by the fifth generation mobile forum (5GMF) in Japan, novel applications, system requirements, and technologies have been discussed toward the realization of 5G. As also shown in IMT VISION finalized by ITU-R WP5D, an introduction of the massive machine type communications and the ultra-reliable and low latency communications is aimed in addition to the enhancement of the mobile broadband. In the World Radio-communication Conference 2015, higher frequency bands that are currently not used in mobile communications have been decided for being discussed as the candidate of 5G bands in WRC-19. Besides the studies on technologies for enhancing LTE-Advanced toward the realization of 5G, researches on novel wireless access technologies and new frequency bands are conducted to make steady progress beyond 5G. Standardization process of 5G has commenced in 3rd Generation Partnership Project (3GPP) since 2016 and the proposals of wireless access technologies and the performance evaluations are in full flood. In order to further promote 5G related research and development activities, a special section on radio access technologies aiming for the achievement of 5G system requirements, including the results by computer simulations, by experiment trials, and in system-level evaluations is being planned (scheduled to appear in the August 2017 issue).

1. Scope
Special section aims at timely dissemination of research in the following areas. Possible topics include, but are not limited to:
- Radio interface design
- New waveform design
- Massive MIMO techniques
- Small cell technologies
- Advanced modulation and coding schemes
- Advanced retransmission control
- Advanced technologies for Multi-RAT
- Advanced interference coordination and mitigation techniques
- Advanced MIMO technologies
- Advanced technologies for flexible duplex
- Capacity/coverage split system design
- Energy-efficient radio access technologies
- Technologies for higher frequency bands
- Technologies for massive connectivity
- Technologies for small packet transmission
- Technologies for ultra-low latency
- Device to device (D2D) communications
- Wireless fronthauling and backhauling
- Advanced relay
- Advanced multiple access
- System concept and architecture
- Heterogeneous access networks

2. Submission Instructions
The standard number of pages is 8. The page charges are considerably higher for extra pages. Manuscripts should be prepared according to the guidelines in the "Information for Authors." The latest version is available at the web site, http://www.ieice.org/eng/shiori/mokuji_cs.html. The term for revising the manuscript after acknowledgement of conditional acceptance for this special section could be shorter than that for regular issues (60 days) because of the tight review schedule.

This special section will accept papers only by electronic submission. Submit a manuscript and electronic source files (LaTeX/Word files, figures, authors' photos and biographies) via the IEICE Web site https://review.ieice.org/regist/regist_baseinfo_e.aspx by **2nd September 2016 (JST)**. Authors should choose the "Radio Access Technologies for 5G Mobile Communications System" as a "Journal/Section" on the online screen. Do not choose [Regular EB].

Contact point:
Kazuto Yano
ATR Wave Engineering Laboratories
Tel: +81 774 95 1578
Email: rcs_ac-eb-5grat@mail.ieice.org

3. Special Section Editorial Committee
Guest Editor-in-Chief: Makoto Taromaru (Fukuoka Univ.)
Guest Editors: Kazuto Yano (ATR), Tomoya Tandai (Toshiba)
Guest Associate Editors: Riichi Kudo (NTT DOCOMO), Tetsuya Yamamoto (Panasonic), Takamichi Inoue (NEC), Hiroyoshi Ishikawa (Fujitsu Labs), Koji Ishibashi (Univ Electro-Communications), Eiji Okamoto (Nagoya Institute of Tech.), Takeshi Onizawa (NTT), Takeo Ohseki (KDDI Labs), Hiroshi Nishimoto (Mitsubishi Electric), Fumiaki Maehara (Waseda Univ.), Osamu Muta (Kyusyu Univ.), Homare Murakami (NICT)

* Authors must agree to the "Copyright Transfer and Page Charge Agreement" via electronic submission.
* Please note that if the submitted paper is accepted, all authors, including authors of invited papers, are requested to pay for the page charges covering partial cost of publications.
* At least one of the authors must be an IEICE member when the manuscript is submitted for review. Invited papers are an exception. We recommend that authors unaffiliated with IEICE to apply for membership.
* For membership applications, please visit http://www.ieice.org/eng/member/OM-appli.html

Call for Papers

------- Special Section on Recent Progress in Antennas and Propagation in Conjunction with Main Topics of ISAP2016 -------

The IEICE Transactions on Communications announces that it will publish a special section entitled "Special Section on Recent Progress in Antennas and Propagation in Conjunction with Main Topics of ISAP2016" in **February 2018.**

The objective of this special section is to discuss the antenna and propagation technologies related to progressing technologies for 5G mobile communication systems, MIMO, PAN/BAN, and wireless power transmission and so on. The 2016 International Symposium on Antennas and Propagation (ISAP2016) will be held in Ginowan, Okinawa, Japan during October 24 – 28, 2016, which aims at providing an international forum for exchanging information on such progress of research and development in antennas, propagation, electromagnetic wave theory, and the related fields. By taking this opportunity the special section has been planned to publish papers on advanced technologies in antennas, propagation and the related fields. The special section seeks for submission particularly from, but not limited to, the authors of ISAP2016.

1. Scope

This special section aims at timely dissemination of research in these areas. Possible topics include, but are not limited to:

Antennas	Propagation	Electromagnetic-wave Theory	AP-related Topics
- Small Antennas and RF Sensors	- Indoor and Mobile Propagation	- Computational Electromagnetics	- MIMO and Its Applications
- Antennas for Mobile and Wireless Applications	- Millimeter-wave, THz and Optical propagation	- Optimization Methods in EM Problems	- Antenna Systems for Mobile Communications
- Broadband and Multi-band Antennas	- Machine-to-Machine/Infrastructure Propagation	- Frequency Selective Surfaces and Filters	- Broadcasting and Receiving Technologies
- Tunable and Reconfigurable Antennas	- Channel Sounding and Channel Estimation	- EBG, Metamaterials, and Applications	- Wireless Power Transfer Technologies
- 2D and 3D Printed Antennas and Arrays	- Propagation Measurement Techniques	- Time-Domain Techniques	- Wearable Device Networks and Medical Applications
- Millimeter-wave, THz and Optical Antennas	- Terrestrial, Earth-Space, and Ionospheric Propagation	- Scattering, Diffraction, and RCS	- Sensor Networks and Adhoc Systems
- Active and On-Chip Antennas	- Propagation Fundamentals,	- Inverse and Imaging Techniques	- RFID and Applications,
- Adaptive and Smart Antennas	- DOA Estimation	- Passive and Active Components	- EMC/EMI Technologies
- Antenna Theory and Design	- Remote Sensing and Radar	- Nano-Electromagnetics	- Other related topics
- Antenna Measurements	- Other related topics	- Other related topics	
- Other related topics			

2. Submission Instructions

The standard number of pages is 8. The page charges are considerably higher for extra pages. Submissions of "letters" are not accepted. Manuscripts should be prepared according to the guideline in the "Information for Authors". The latest version is available at the web site, http://www.ieice.org/eng/shiori/mokuji_cs.html. The period for revising the manuscript after acknowledgement of conditional acceptance for this special section could be shorter than that for regular issues (60 days) because of the tight review schedule.

This special section will accept only papers by electronic submission. Submit a manuscript and electronic source files (LaTeX/Word files, figures, authors' photos and biography) via the IEICE Web site https://review.ieice.org/regist/regist_baseinfo_e.aspx **by February 15th, 2017 (JST)**. Authors should choose the Recent Progress in Antennas and Propagation in Conjunction with Main Topics of ISAP2016 as a "Journal/Section" on the online screen. Do not choose [Regular-EB].

Contact Person: Toru Takahashi
Information Technology R&D Center, Mitsubishi Electric Corporation
Tel: +81-467-41-2155, Email: ap_ac-isap2016ss@mail.ieice.org

3. Special Section Editorial Committee

Guest Editor-in-Chief: Jiro Hirokawa (Tokyo Tech)
Guest Editors: Toru Takahashi (Mitsubishi Electric), Kentaro Nishimori (Niigata Univ.)
Guest Associate Editors: Takuji Arima (Tokyo Univ. of Agric. and Tech.), Koichi Ichige (Yokohama Natl. Univ.), Shinichiro Ohnuki (Nihon Univ.), Noaki Kita (NTT), Koshiro Kitao (NTT DOCOMO), Shigeki Takeda (Ibaraki Univ.), Masayuki Nakano (KDDI), Hiroshi Hirayama (Nagoya Inst. of Tech.), Takeshi Fukusako (Kumamoto Univ.), Mitoshi Fujimoto (Univ. of Fukui), Naobumi Michishita (Natl. Defense Acad.), Manabu Yamamoto (Hokkaido Univ.)

*Authors must agree to the "Copyright Transfer and Page Charge Agreement" via electric submission.
＊Please note that if accepted, all authors, including authors of invited papers, are requested to pay for the page charges covering partial cost of publications.
* At least one of the authors must be an IEICE member when the manuscript is submitted for review. Invited papers are an exception. We recommend that authors unaffiliated with IEICE apply for membership. For membership applications, please visit the web-page, http://www.ieice.org/eng/member/OM-appli.html.

🅴🅸🅲	*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 Journal(written in Japanese) 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. Note that the Overseas Membership applies only to candidates who reside outside of Japan and who have citizenship in countries other than Japan.

OMDP (Overseas Membership Development Program): OMDP is provided for candidates **from countries/areas in Asia(except Republic of Korea and Taiwan), Africa, Central America, and South America.** This program is designed so that IEICE can contribute to and support the progress of science and technology throughout the world. Scientists and engineers in these countries/areas are encouraged to apply to the program.

● IEICE Societies and Publications

Society	Transactions	Editorial Subject Indexes
A (Fundamentals of Electronics, Communications and Computer Sciences)	EA (English) A (Japanese)	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)	EB (English) B (Japanese)	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)	EC (English) C (Japanese)	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)	ED (English) D (Japanese)	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 (http://www.ieice.org/eng/member/OM-appli.html#c)
Basic Membership Charge is as follows. It will change the term when you join IEICE. Please refer to the above website.

Basic Membership Charge   (UNIT : Japanese YEN)

Service coverage for overseas members	Admission charge	Online Version		Paper Version (optional)
		Registration of the first society (includes its online version transactions)	Registration of additional societies (includes its online version transactions)	Journal (written in Japanese)
Member (overseas)	1,400	7,000	3,500 / 1society	6,000
Member (overseas) with OMDP*	1,000	5,000	3,000 / 1society	6,000
Student member (overseas)	–	2,000	2,000 / 1society	6,000
Student member (overseas) with OMDP*	–	1,000	1,500 / 1society	6,000

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.
2. If you want to register other Societies and Transaction of web version, please check "Additional Society registration".
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 as "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.

● Optional Rapid Mailing Service
Surface mail charge is included in the membership charge. Optional rapid mailing service is available by air mail or surface air lifted (SAL) mail. The additional charge per year periodical depends on the mailing address, as shown in the right table.

Areas	Air mail	SAL mail
Asia; Guam; Midway islands	5,600 yen	3,200 yen
Oceania; Near & Middle East; North & Central America; Europe	7,800 yen	4,400 yen
Africa; South America	11,000 yen	5,600 yen

Please contact the IEICE Membership Section: E-mail:member@ieice.org FAX: +81 3 3433 6659 *Please fill out the application form printed on the next page.*

IEICE Overseas Membership Application Form

URL http://www.ieice.org/eng/member/OM-appli.html　　**E-mail** member@ieice.org　　**FAX** +81-3-3433-6659

◆ **Please type or print in English.** The deadline for submitting application form is <u>the 1st day of every month.</u>

Personal Information

☐Male
☐Female

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

☐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

_____　_____
TEL　　　　　　　　　　FAX　　　　　　　　　　E-mail

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!)
　　☐Member (Overseas)　　　☐Student Member (Overseas)
　◆If you want to apply for OMDP, please check;　☐OMDP (Overseas Membership Development Program)

Society registration (Membership fee includes one Society of Transaction of Online version.):
　　☐A: Engineering Sciences　☐B: Communications　☐C: Electronics　☐D: Information and Systems

Additional Society (optional):　☐A: Engineering Sciences　☐B: Communications　☐C: Electronics　☐D: Information and Systems

Additional Transactions of paper version (optional):
☐EA: Fundamentals　　☐EB: Communications　　☐EC: Electronics　　☐ED: Information and Systems
☐A: Fundamentals (Japanese)　☐B: Communications (Japanese)　☐C: Electronics (Japanese)　☐D: Information and Systems (Japanese)

Journal subscription (optional):　☐(Japanese)

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

Admission charge.............................¥_____　Journal subscription (optional)..................¥ _____
Annual charge................................¥_____　Mailing option: ☐Air mail…......................¥ _____
Additional Society (optional) ....¥_____　　　　　　　　☐SAL mail....................¥ _____
Additional Transactions (optional)….......¥_____　**Total……………………………......……..¥** _____

Credit Card:　☐UC　☐Master Card　☐VISA　☐JCB　☐American Express

Card number: | | | | | | | | | | | | | | |

Expiry date: _____/_____　Credit Card Holder: _____　Signature: _____
Year　　Month

Endorsement *Endorsements by one IEICE 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

IEICE-CS Overseas Membership with Special Annual Fees for Sister Society Members

To foster the cooperation between the Sister Society and the IEICE Communications Society (IEICE-CS), the Sister Society agreement enables members of each institution to become members of both societies by granting special annual fees.

A 10% - 20% discount* of the annual fees will be granted to the sister society members to become the IEICE-CS overseas members. The discounted fees will be applied for the individual members when the new membership is starting or the current membership is renewing.

* The discount does not apply to the optional items and services i.e. "Additional Society", "Additional Transactions of paper version" and "Rapid Mailing Service".

------ Please send the following Sister Society membership information, together with membership application form in the next page. ------

Sister Society membership information

To apply discount rates for this IEICE-CS Sister Society member's application, please indicate your Sister Society Membership number below, and attach a copy of your Sister Society Membership certificate or card to this form.

Sister Society: ☐IEEE ComSoc   ☐KICS   ☐VDE-ITG

Membership number (Member): _____

Copy of Membership certificate or Membership card:

(Attached here)

IEICE Overseas Membership Application Form for IEICE-CS Sister Society Members

URL http://www.ieice.org/eng/member/OM-appli.html   **E-mail** member@ieice.org   **FAX** +81-3-3433-6659

◆ **Please type or print in English.** **The deadline for submitting application form is <u>the 1st day of every month</u>.**

Personal Information

☐Male
☐Female

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

☐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

_____
TEL   FAX   E-mail

Academic Background   The highest academic degree: ☐Ph.D. ☐Masters ☐Bachelors ☐Others: _____

_____
University/college/school of the highest academic degree   Month & year of graduation

Application Information

Membership: I want to apply for the following membership*:
☐Member   ☐Member (including Japanese Journal subscription)
☐Student Member   ☐Student Member (including Japanese Journal subscription)
Membership applies only to applicant who reside outside of Japan and who have non-Japanese citizenship.
◆If you want to apply for OMDP (Overseas Membership Development Program), please check; ☐OMDP

Society registration (Membership fee** includes one Society of Transaction of Online version.):
☑B: Communications
***Discount rate is applied to this IEICE-CS Sister Society Member's application.*

--- *Discount rate is not applied for the following optional items.* ---
Additional Society (optional):   ☐A: Engineering Sciences   ☐C: Electronics   ☐D: Information and Systems

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

Admission charge……………………………¥_____   Journal subscription (optional)……………¥_____
Annual charge……………………………… ¥_____   Mailing option: ☐Air mail…...……………¥_____
Additional Society (optional) …………… ¥_____   ☐SAL mail…………………¥_____
Total………………………………......………¥ _____

Credit Card: ☐UC   ☐Master Card   ☐VISA   ☐JCB   ☐American Express

Card number: [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

Expiry date: _____ / _____   Credit Card Holder: _____   Signature: _____
Year   Month

Endorsement *The following endorsement for this Sister Society member's application will be <u>given by an IEICE-CS director</u> (any related action of endorsement by applicant is not necessary if a copy of your Sister Society Membership certificate or card is indicated).*

I recommend this applicant for IEICE membership.

(Director of Planning and Member Activities, IEICE-CS)

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

IEICE Communications Society - GLOBAL NEWSLETTER
Submission Guideline

1. About GLOBAL NEWSLETTER

The Institute of Electronics, Information and Communication Engineers Communications Society (IEICE-CS) GLOBAL NEWSLETTER has been established since 2002. We quarterly publish an English newsletter every March, June, September, and December.

1.1. Goal

Our goal is to share information between overseas/foreign members and other members in IEICE-CS as a global activity, and to show IEICE presence internationally.

1.2 Category of Articles

1) Messages from President/Vice President
  - An inaugural message from CS President is published once per year in June. Message from CS Vice President is published properly.
2) IEICE-CS Activities Now
  - IEICE General/Society Conference information/reports
  - Activities of Technical Committees
  - International activities of the society
3) IEICE-CS Related Conferences Reports
  - Information/reports on IEICE-CS related conferences
 - IEICE-CS Conferences Calendar (*)
4) Others
  - Essays, Laboratory activity reports, Technology reports, Messages from overseas/foreign members, etc.
  - Information from Sister Societies
  - Special topics (*)
5) IEICE-CS Information
 - Call for papers
 - From editor's desk (*)
*: planned / written by IEICE-CS Directors, Planning and Members Activities

2. Major notes for Contribution

Basically, IEICE-CS members and readers can contribute articles. IEICE-CS Directors, Planning and Members Activities may ask non-IEICE-CS members to contribute articles. The articles should be fruitful and profitable for IEICE-CS members, **NOT** for particular organization. IEICE-CS Directors, Planning and Members Activities may not accept an article for publication if it does not follow this guideline.

2.1 Template and Language

Please use template downloadable at the URL:
http://www.ieice.org/cs/pub/global_howto.html
Please use English for all articles.

2.2 Number of pages

Two to four pages are preferable. One page article is also acceptable. The maximum number of pages is eight. When you try to entry a contribution with five to eight pages, you need to negotiate with IEICE-CS Directors, Planning and Members Activities.

3. Copyright

The copyrights of all articles in the GLOBAL NEWSLETTER should belong to the IEICE. However, the original authors retain the right to copy, translate or modify their own manuscripts. In cases when a manuscript is translated into another language or when any portion of the manuscript is to be submitted to another publication, authors

should register the action with the IEICE, and the original manuscript should be clearly cited in the publications. Please see a web site related to IEICE provisions on copyright.
http://www.ieice.org/eng/about/copyright.html

4. Publication fee / Manuscript fee
No publication fee and no manuscript fee for all articles.

5. Schedule
Standard editing schedule is as follows. Please note that the schedule may vary due to public holidays or other circumstances. The exact deadlines are indicated in call for newsletters.

Publication date	1st , Mar.	1st, Jun.	1st, Sept.	1st, Dec.
Call for newsletters	1st Mon., Dec.	1st Mon., Mar.	1st Mon., Jun.	1st Mon., Sept.
Contribution entry	4th Fri., Dec.	4th Fri., Mar.	4th Fri., Jun.	4th Fri., Sept.
Submission of Manuscript/Copyright	3rd Fri., Jan.	3rd Fri., Apr.	3rd Fri., Jul.	3rd Fri., Oct.

5.1 Call for Newsletters
IEICE-CS Directors, Planning and Members Activities will give you the information on call for newsletters.

5.2 Contribution Entry
You should send **information on title, summary(around 50 words or less) and number of page** to IEICE-CS Directors, Planning and Members Activities by e-mail.
E-mail: cs-gnl@mail.ieice.org

5.3 Submission of Manuscript
You should send a manuscript both in word file and pdf file to IEICE-CS Directors, Planning and Members Activities by e-mail.
E-mail: cs-gnl@mail.ieice.org

5.4 Submission of COPYRIGHT TRANSFER FORM
COPYRIGHT TRANSFER FORM can be downloaded at:
http://www.ieice.org/cs/pub/global_howto.html
Signed **COPYRIGHT TRANSFER FORM** should be sent by one of the following ways:
- By email.
- By facsimile.

Address to send:
- In case of email: cs-gnl@mail.ieice.org
- In case of facsimile:
        Name: Publications Department, IEICE
        Facsimile: +81-3-3433-6616, Phone: +81-3-3433-6692

6 Contact Point
 IEICE-CS Directors, Planning and Members Activities in charge of IEICE-CS GLOBAL NEWSLETTER, cs-gnl@mail.ieice.org

From Editor's Desk

● Started online delivery of IEICE-CS GLOBAL NEWSLETTER

As we noticed previously, we have started the online delivery of the IEICE-CS GLOBAL NEWSLETTER (GNL) from this issue. The online GNL including more useful information and interesting contents than ever is published in every March, June, September and December in the web site at:

https://www.ieice.org/cs/pub/global_news.html

The printed version is delivered only for the overseas members.

● IEICE Society Conference 2016

Complete English Sessions will be scheduled in IEICE Society Conference 2016 for the globalization of IEICE's academic activities. The conference is to be held in the Hokkaido University, Sapporo, for September 20-23, 2016. We would like to remind readers is to consider submitting a paper to the conference. Please check out the detail of paper submission and the latest information on the IEICE web site at:

http://www.toyoag.co.jp/ieice/E_S_top/e_s_top.html

IEICE-CS GLOBAL NEWSLETTER Editorial Staff

Editorial Staff of this issue

No special order is observed.

Takashi DATEKI
Fujitsu Laboratories, Ltd.
Network Systems Laboratory
Director, Planning and Member Activities, IEICE Communications Society

Moriya NAKAMURA
Meiji University
Department of Electronics and Bioinformatics, School of Science and Technology
Director, Planning and Member Activities, IEICE Communications Society

Fumio FUTAMI
Tamagawa University
Quantum ICT Research Institute
Director, International Publication, IEICE Communications Society

2nd CALL FOR PAPERS

2017 IEEE International Conference on Computational Electromagnetics
March 8-10, 2017, Parea Kumamoto Prefectural Community Center,
Kumamoto Japan

IEEE
IEICE Communications Society

A P S

Electronics Society
電子情報通信学会 エレクトロニクスソサイエティ

Steering Committee

Honorary Chairs:
Hiroyoshi Ikuno
Kumamoto Univ.
Kiyotoshi Yasumoto
Kyushu Univ.
General Chairs:
Mitsuhiro Yokota
Univ. of Miyazaki
Takeshi Fukusako
Kumamoto Univ.
General Co-chairs:
Christian Pichot
Université de Nice-Sophia Antipolis
Toru Uno
Tokyo Univ. of Agriculture and Tech.
Mitsuo Taguchi
Nagasaki University
International Advisory Board Chairs:
Makoto Ando
Tokyo Inst. of Tech.
Chi-Hou Chan
City Univ. of Hong Kong
Secretaries:
Eisuke Nishiyama
Saga Univ.
Tsuyoshi Matsuoka
Kyushu Sangyo Univ.
Technical Program Committee Chairs:
Masahiko Nishimoto
Kumamoto Univ.
Koki Watanabe
Fukuoka Inst. of Tech.
Award Committee Chair:
Claire Migliaccio
Université de Nice-Sophia Antipolis
Local Arrangement Chair
Mitsuo Taguchi
Nagasaki Univ.
Registration Chairs:
Yoshihiro Naka
Kyushu Univ. of Health and Welfare
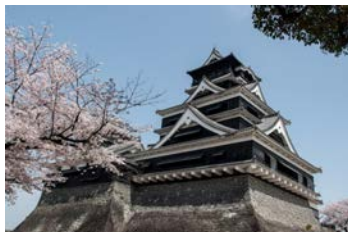**Norimasa Nakashima**
Fukuoka Inst. of Tech.
Financial Chairs:
Akira Matsushima
Kumamoto Univ.
Takayuki Tanaka
Saga Univ.
Exhibition Chair:
Ichihiko Toyoda
Saga Univ.
Web & publication services:
Kiyotaka Fujisaki
Kyushu Univ.
Haruichi Kanaya
Kyushu Univ.
Takafumi Fujimoto
Nagasaki Univ.

The 3rd IEEE Antennas and Propagation Society Topical Meeting on Computational Electromagnetics

The IEEE International Conference on Computational Electromagnetics (ICCEM) is financially sponsored by the Antennas and Propagation Society (AP-S). It brings researchers and practitioners together for sharing their latest advances in numerical algorithms, modeling methods, optimization, and computing platforms for applications across the whole electro-magnetic spectra.

Papers may address all aspects of simulation techniques, computational methods and/or focus on scientific and engineering applications. The following is a list of suggested topics. Contributions in other areas of computational electromagnetics and applications will be considered.

Computational methods
1. Integral Equation Methods
2. Differential Equation Methods
3. Mode Matching Methods
4. High Frequency Methods
5. Time Domain Methods
6. Hybrid Techniques
7. Numerical Modeling of EM problems
8. Multi-scale/Multi-physics EM simulation
9. Fast and Efficient techniques
10. Data-sparse Representation
11. Others

Simulation Techniques
1. Mesh Generation
2. Scientific Visualizations
3. User Interfaces
4. Computer Graphics
5. Parallel and GPU Computations
6. Design & Optimization Techniques
7. Others

Education
1. Education in Electromagnetics

Applications
1. Novel Design Technologies for Antennas and Devices
2. Antennas and Devices for Specific Applications
3. Active and On-Chip Antennas
4. Millimeter-wave, THz and Optical Antennas and Devices
5. Metamaterial
6. Indoor and Mobile Propagation
7. Guided Waves and Waveguides
8. EGB, FSS, Periodic Structures
9. Wireless Power Transfer Technologies
10. Scattering and Diffraction
11. Inverse Scattering and Imaging
12. EMC/EMI Technologies
13. Microwave Photonics, THz Technologies
14. Optoelectronic Devices and Integration
15. Remote Sensing, Radar and Measurements
16. Nano-scale Electromagnetics
17. Quantum Electrodynamics
18. Bioelectromagnetics, Biomedical Applications
19. Others

Important Dates:
Deadline of full paper submission: **September 16, 2016**
Notification of acceptance: **November 18, 2016**
Contact : iccem2017_inq@ieee.org (Prof.s E. Nishiyama and T. Matsuoka)

Paper Submission :
The recommended paper length is two (2) pages, with three (3) pages as a maximum. Submitted papers should be formatted for printing on A4 or 8.5x11-inch US standard paper, and camera-ready including figures. Related information will be available in the conference website. All the presented papers will be published in IEEE Xplore.

Award:
IEEE Ulrich L. Rohde Innovative Conference Paper Award is given to two most innovative papers presented.

Technical Sponsors:
ICCEM2017 is technically cosponsored by Technical Committees on Antennas and Propagation (AP) in IEICE Communication Society, and Electromagnetic Theory (EMT) and Electronics Simulation Technology (EST) in IEICE Electronics Society.

Notice from GLOBAL NEWSLETTER

Changing IEICE-CS GLOBAL NEWSLETTER
in printed version to online version

The IEICE-CS GLOBAL NEWSLETTER (GNL) has been established since 2002. We quarterly publish an English newsletter every March, June, September and December. The printed version of these magazines has been delivered including a lot of useful information and interesting contents to IEICE CS members. We are now considering changing GNL in printed version to online version. As the first step of this change, the printed version is delivered only for the overseas member from the current issue, and publishing GNL in the website at:

https://www.ieice.org/cs/pub/global_news.html

With I-Scover (http://i-scover.ieice.org), you can easily search articles including related keywords efficiently. I-Scover covers about 215,000 articles from IEICE transactions, IEICE technical reports, proceedings of the IEICE General/Society conferences and some IEICE related international conferences.

(*) Depending on material, IEICE membership account, password attached to proceedings DVD, etc. may be required to view PDF contents.