

# ***IEICE Communications Society GLOBAL NEWSLETTER Vol. 21***

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Call for Paper

# Towards “Communications Society” Closer to You and Serving You Better

Susumu Yoshida  
President, Communications Society



## 1. Introduction

It is my great honor to serve as the President of Communications Society of IEICE (IEICE-CS) this year until the end of May, next year. IEICE-CS is currently the largest society consisting of more than 13,000 members, including nearly 1,600 overseas members. Although the communications society was born more than 10 years ago, we entered the new phase by starting the self-supporting accounting scheme. That is, we have become more financially independent of the IEICE headquarter and have been given lots of freedom to make decisions by ourselves to serve you better. Here in this Global Newsletter, some recent activities and what is going on currently at IEICE-CS are introduced for your information.

## 2. Current status and new activities

We are pleased to inform you that we have launched two new Technical Committees (TC) this year, i.e., Ad Hoc Networks TC and Ubiquitous Sensor Networks TC, reflecting the current strong needs and trends towards ad hoc networking and ubiquitous networked society. All together, we have now 19 TCs reflecting broad coverage of IEICE-CS, excluding ad hoc temporal TCs. The Council of Technical Committee Representatives is currently working hard to establish criteria for starting a new TC or terminating an old TC by making a quantitative assessment of TC's activities so that we can keep them always active and attractive to the members.

As one of the symbolic activities of the self-supporting accounting scheme we introduced last year, we have launched a new colorful IEICE-CS magazine with attractive articles such as tutorials on the state-of-the-art technologies, purpose of which is somewhat similar to the Communications Magazine of IEEE COMSOC, although our current version of IEICE-CS magazine is written in Japanese unfortunately. In the near future, we need to consider publishing English translation of this IEICE-CS magazine to provide overseas members with the same quality service as for the domestic members.

As you know, electronic publications of both Transactions of IEICE-CS (in Japanese) and IEICE Transactions on Communications (in English) started last year. This has contributed a lot to improve the financial condition of the IEICE-CS. With regard to IEICE Transactions on Communications, more than 70% papers come from the outside Japan, mostly from

the Asia Pacific region in the year of 2006, while 26% papers come from Japan.

We are trying to do our best to keep high quality of the transactions while keeping the review cycle to be as short as possible.

## 3. Globalization of our activities

Although we have currently more than 1600 overseas members, it is our big issue to provide them with the same quality of services as for the domestic members. We recognize the need of providing overseas members with useful information and hot topics on what's going on in our Society in English through web site or publications.

Last year, former President of IEICE, Dr. Izawa made a special ad hoc working group whose mission was to identify the urgent matters to make the IEICE more global. The working group led by Professor Aoyama, Vice President of the IEICE at that time, summarized target items to be tackled immediately. One important item in the proposal was multi-language information provisioning to the overseas members. This might take time but is surely very essential for letting overseas members feel IEICE-CS attractive and closer. At least, we need to improve our web site so that we can provide overseas members with more useful and beneficial information in English.

In this connection, we are planning to send questionnaire to overseas members this year to examine how we should improve this Global Newsletter issued quarterly and at the same time what kind of services are expected from IEICE-CS. We appreciate your comments or suggestions to improve our activities.

By analyzing the feedback, we will do our best to improve not only Global Newsletter but also general services to overseas members, so that we will serve you better and at the same time you will feel IEICE-CS closer.

## 4. Closing words

Taking the opportunity to introduce the self-supporting accounting scheme to IEICE-CS, we have been trying to challenge many things to serve you better, as described partially in this article. However, in order for you to feel truly the IEICE-CS beneficial and closer to you, your cooperation is very important. Your comments or suggestions are always welcome and greatly appreciated.

## Report on the 23rd NS/IN Research Workshop

Kenji Hori<sup>†</sup>, Kiyohito Yoshihara<sup>†</sup>, Motonori Nakamura<sup>††</sup>,  
 Hiroyuki Morikawa<sup>†††</sup>, Hiroshi Saito<sup>††</sup>,  
 Hiroyuki Ohnishi<sup>††</sup>, Tadashi Itoh<sup>††</sup>, Hideki Tode<sup>††††</sup>,  
 Miki Yamamoto<sup>†††††</sup> and Kou Miyake<sup>††††††</sup>  
<sup>†</sup>KDDI R&D Laboratories Inc., <sup>††</sup>NTT Corp., <sup>†††</sup>The Univ. of Tokyo,  
<sup>††††</sup>Osaka Univ., <sup>†††††</sup>Kansai Univ. and <sup>††††††</sup>NTT DATA INTELLILINK Corp.

### 1. Introduction

The 23rd NS/IN Research Workshop took place in Okinawa, Japan, March 7-8, 2007. The workshop was sponsored by the technical committee on NS (Network Systems) and IN (Information Networks) of the IEICE Communication Society, and aimed to discuss the technical direction and research topics for future networks. A record showing of 162 participants underscored the success of this workshop. The overall theme of the workshop was “The current trend and future directions of IPTV.” The workshop featured invited talks, and a panel discussion. In this article, we present an overview of the invited talks and the panel discussion.

### 2. Invited talks

The general chair of the workshop, Dr. Kou Miyake (NTT DATA INTELLILINK Corp.), invited six distinguished experts involved in IPTV and future networks. These speakers addressed new challenges in IPTV and the future networks from political and industrial perspectives. Figure 1 shows photographs of the speakers.

- Mr. Tetsuya Hotta (Accenture Japan Ltd.) presented an analysis of current market trends and various business models for IPTV.
- Ms. Kuniko Teramoto (The Ministry of Internal Affairs and Communications) offered a perspective on political and legal issues of IPTV, such as copyright infringements.
- Mr. Ikuo Wada (NHK Japan Broadcasting Corp.) gave characteristics and an analysis of IPTV from the standpoint of a contents provider, along with the future direction of services regarding IPTV.
- Mr. Akira Itoh (I-Cast Inc.) presented his business schemes and posed copyright dilemmas concerning retransmission of digital terrestrial broadcasting and multi-channel broadcasting services with FTTH.
- Mr. Katsunori Hashimoto (Sony Corp.) addressed the technical issues and challenges of IPTV from the standpoint of a television manufacturer.
- Mr. Jay Kishigami (NTT Corp.) presented future directions and requirements regarding the network infrastructure for IPTV, contrasting with the status of the standardization regarding IPTV and NGN.



Fig. 1 Invited speakers.

### 3. Panel discussion

As the chairperson, Dr. Miyake organized the panel discussion. Dr. Miyake and the five invited speakers took their seats as panelists. The audience filled the hall.

Firstly, Dr. Miyake gave the theme of the discussion to the panelists: “Current trends and future directions of IPTV.” The panelists then expressed their opinions from their own perspectives, and actively discussed the issues involved. In addition, they answered various questions from audience.

The discussion showed that there is increasing interest in the IPTV market and related technologies.

### 4. Conclusion

This year’s workshop invited key persons to speak on IPTV and future networks. We believe that the presentations given by the invited speakers and the panel discussion provided fruitful hints for research and development by the participants.

The technical committee on NS and IN plan to hold next year’s workshop in March 2008. Finally, we would like to express our gratitude to the workshop committee members, and particularly, T. Oniki (OKI), T. Nishino (NEC), Y. Sato (TOSHIBA), J. Maeda (Fujitsu), and K. Kusama (HITACHI) who made this workshop possible.

# Annual Report of Technical Committee on Network Systems

Kou Miyake\*, NTT,  
Miki Yamamoto\*\*, Kansai University,  
Ichiro Inoue\*\*\*, NTT,  
Tadashi Ito\*\*\*\*, NTT,  
Hideki Tode\*\*\*, Osaka University,

\*Chair, \*\*Vice Chair, \*\*\*Secretaries, \*\*\*\*Former Secretary

## 1. Introduction

This report covers the annual activities of The Technical Committee on Network Systems (NS) of the IEICE. It describes activities at the monthly technical meetings, recent research topics of the committee, and the research awards for 2006.

## 2. Technical meetings

As a rule, this Technical Committee holds ten two-day technical meetings each fiscal year. The schedule from April 2007 to March 2008, consisting of nine technical meetings and one workshop, is shown in Table 1. Several of these are co-sponsored by the NSWJ (Network Software), RCS (Radio Communication Systems), CS (Communication Systems) and IN (Information Networks), TM (Telecommunication Management), CQ (Communication Quality), PN (Photonic Network), and OCS (Optical Communication Systems) committees. In addition, the April technical meeting is co-sponsored by the ITC (International Teletraffic Congress) Japan Committee chaired by Professor Konosuke Kawashima of the Tokyo University of Agriculture and Technology.

Recently presented papers mainly focus on technologies that support ad-hoc and sensor networking, traffic control/measurement, quality of service (QoS), P2P networking, and security issues. At each technical meeting, we host lectures by invited speakers who are experts in their fields. During this fiscal year, we have had guest lectures on security issues, traffic

control/measurement, IPTV, photonic network, and other topics. From June 2003, we started to foster the work of young researchers who have presented papers at technical meetings by inviting them to give a follow-up talk some months later. We call these the “encouragement lectures.” We invited 17 young researchers to give such lectures in the past year. We will continue this system. The number of papers presented at our meetings in recent years is shown in Fig. 1. In general, the number of papers is increasing, but those from industry are gradually decreasing.

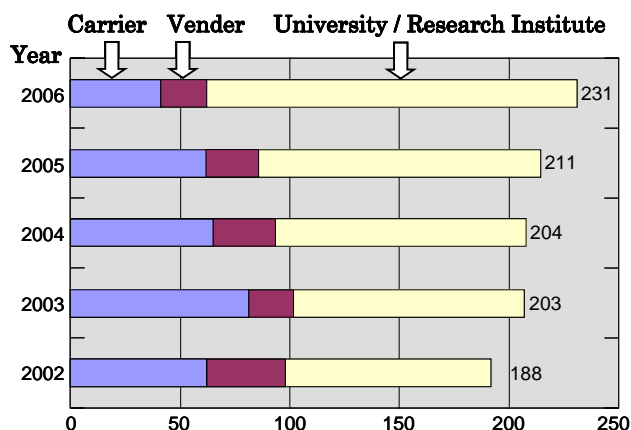


Fig. 1: Trend in number of papers presented at technical meetings.

Table 1: Technical meeting schedule

Date	Place	Themes	Co-organizer
April 19-20	Tokushima University (Tokushima)	Traffic	ITC Japan Committee
May 17-18	Osaka University (Osaka)	Next generation networks, SIP, Presence	
June 14-15	Akita University (Akita)	Video Communication, CDN, Multicasting	NSWJ
July 19-20	Kitami Institute of Technology (Hokkaido)	Mobile networks	RCS
Sep. 20-21	Tohoku University (Miyagi)	VPN, NAT, Security, DDoS, P2P	CS, IN
Oct. 18-19	Kikai-Shinko-Kaikan Bldg. (Tokyo)	Networking technology for the ubiquitous era	
Nov. 15-16	Institute of System LSI Design Industry (Fukuoka)	Network quality, Traffic measurement	TM, CQ
Dec. 20-21	Chiba University (Chiba)	Photonic networks, Photonic routing	PN
Jan. 24-25	Oita University (Oita)	Photonic IP networks, Photonic nodes	OCS
Mar. 6-7	Bankoku Shinryokan (Okinawa)	NS/IN Workshop	IN

### 3. Research Awards 2006

The Technical Committee selected recipients of the Network System Research Award from among researchers that gave, in total, 200 papers at monthly technical meetings from January to December 2006. The award is presented to the authors of the three or four best papers of each year. Last year's recipients attended the IN/NS Workshop, held in Okinawa in March 2007, as shown in Fig. 2. The abstracts of four papers that won awards in 2006 are shown below.

**Hiroyuki Koga, Hiroaki Haraguchi, Katsuyoshi Iida, and Yuji Oie, “Design and Implementation of Media Optimization Network Architecture for Quality-of-Service Control”**

The expansion of mobile computing has brought about various wireless access networks. Future pervasive networks will be constructed from such networks, which will be diverse in terms of bandwidth, delay, stability, cost, and coverage area. Therefore, the first hop from the mobile host is the most significant link in terms of QoS. How to manage the first link is the most critical issue for QoS provisioning over wireless access networks when a mobile host communicates with a corresponding host through the Internet. To achieve efficient mobile computing in such pervasive networks, mobile hosts must be able to use multiple network media and select the optimum medium for communication according to the prevailing network conditions, but without any interruption of communication through a disconnection.

Therefore, we propose Media Optimization Network Architecture (MONA), which consists of a novel layer, called an association layer, and its protocol, to provide a flow assignment mechanism in pervasive multihomed networks. The association layer is inserted between the transport and network layers. This means that major modifications to the transport layer, including socket APIs, and the network layer, are not necessary, so current applications can be used without any modifications. One of the key functions is to select appropriate network media for each flow according to the network conditions and flow characteristics. In this paper, we demonstrate the effectiveness and validity of the proposed scheme through simulation results and empirical evaluations of the prototype implementation. The simulation results show that MONA improves the loss probability and delay performance of UDP and the TCP throughput performance by selectively using an appropriate network medium for each flow properly according to the traffic characteristics in multihomed networks. Moreover, from the empirical evaluation, we can see that MONA seamlessly selects a suitable medium by which to continue communication without disconnection.

**Yoshikazu Akinaga, Jun Sasaki, Shigeru Kaneda, Takeshi Ihara, and Kazuo Sugiyama “A Method for Early Restoration of Congestion based on Human Communication Network”**

Recently, some big earthquakes have occurred in the world, even more in Japan. During such natural disasters, congestion is observed due to high traffic generation in the disaster affected areas. This is even more serious in mobile communication due to low wireless resources. For example, we observed 40 times higher traffic comparing to normal daily communication in central Niigata in Japan during last earthquake in Niigata, 2004. However, these are the times when a user really needs to communicate with the outside world. In such situation, the mobile network operators such as us have duty to guarantee communication to the users.

On the other hand, in order to protect our network systems from overloading, a common method of congestion control is connection admission control. This admission control is done by regulation, such as enforcing a limit on the number of outgoing or incoming calls from and to the terminals, base stations or switches. Specifically, calls may be regulated by rejecting a specified proportion of outgoing call attempts or by rejecting calls when the resource utilization at any of the certain devices reaches a threshold level.

In order to design such systems where users' requirements are satisfied during emergencies, users' requirements, behavior and communication patterns have to be investigated. In this paper, we propose a user communication model that incorporates users' behavior and traffic generation during disasters and emergencies. In particular, we investigated and developed emergency communication model in which a user communicates with relatives by rotation. The model also implemented similar property of real-world user behavior such as Scale-freeness properties and preference choice model of callee. And we deployed some real-world model to our simulator from observed mobile communication traffic.

By using such a model, our simulator became very sophisticated. By using this simulator, it is possible to simulate and evaluate network systems for natural disasters. By integrating single user and their behaviors in this simulator, we could show the effectiveness of our model in designing network systems that reduce user-perceived congestion in the network and enhance user satisfaction under emergency communication scenarios.

**Hideki Tode, Taichi Fujie, and Koso Murakami, “A Proposal of Inter-Stream FEC Method for Multi-Server Distribution”**

In this paper, we aim to establish a seamless and highly robust content distribution technology in the environment of multi-server content distribution networks by focusing on Forward Error Correction (FEC) as an error recovery method. We actually propose a new concept, Inter-Stream FEC method, which is a method for data recovery involving several Technical and poster sessions streams, using redundant parity streams generated via Inter-Stream

cooperation. In general, when we pursue higher data recovery capability for reliable content delivery, the approach is to increase the appended redundancy per original stream. By contrast, in our proposal, the FEC redundancy of each content (the "Intra-Stream FEC") is limited to a constant value, and the parity data derived by XOR operations between multiple contents (the "Inter-Stream FEC") is added.

Our proposal can be implemented independently of the existing per content FEC methods. This is one of its important and attractive features. In our proposal, at an enhanced edge node (EEN) that manages client requests and the data reception ratio from servers, a specified number of parity streams are determined according to the current network conditions. Next, an allocation to each XOR Group is performed. Whether the estimated restoration ratio satisfies the requested threshold can be judged, so efficient XOR grouping can be attained. Our proposal performs this XOR grouping process periodically, and updates both the number of parity streams and their membership. With this proposal, even if an original content transfer degrades the QoS, lost data can be recovered by making use of the corresponding parity stream and the other well-conditioned original streams. Therefore, this approach can be expected to realize a fair QoS for all content deliveries, without controlling the FEC redundancy of a specific content dynamically.

By means of simulation results, the effectiveness of our proposal was verified.

#### **Tsutomu Kitamura, Takayuki Shizuno, and Toshiya Okabe, "An Application Identification Technology based on Flow Behaviors"**

Current application identification practices rely on the use of signatures, which are unique bit patterns in packet payloads, and of transport-layer port numbers. Signatures and port numbers are not, however, necessarily reliable for application identification, since many current applications may operate on inconsistent ports and encrypt packet payloads.

To address this problem, several studies have deployed application identification methods based on application traffic behaviors that are independent of both signatures and port numbers. Some of these studies focus on behavior in media-data transfer and develop discrimination criteria based on a statistical analysis of various flow attributes, such as packet size distribution per flow, the inter-arrival times between packets, etc. These application identification methods are effective in identifying applications having stable flow-statistics, and then they are applicable to use with such applications as voice, video, and bulk-data transfer. Other studies focus on behavior dependent on application network composition and develop discrimination criteria based on a statistical analysis of host-level attributes, such as the number of destination hosts and destination ports, etc. These methods can be

contributory to application identification by telling the composition of application network (e.g. client-server type for web etc., collaborative type for P2P etc.).

In this paper, we present an application identification method that employs new discrimination criteria based on message exchanging patterns, specifically changes in attributes, such as message size and direction. These criteria are effective to use with signaling traffic, because the attributes of signaling messages differ usually among all messages. This proposed method can be contributory to application identification by revealing signaling protocol. We assume that, in application to such traffic controllers as firewalls and routers, this proposed method will be employed in combination with conventional methods in order to identify an increased number of applications.

#### **4. Future plans**

The Technical Committee has begun to plan a special edition of the IEICE Transactions on Communications B covering Peer-to-Peer networking technology, which will be one of the key applications in the era of broadband services. The call for papers will be issued in November of this year. The Program Committee, which has about 10 members, is chaired by Dr. Kou Miyake of NTT, who is also the chair of the Technical Committee. This special edition will be published in December 2008.

The Technical Committee will organize a special event: an Open Symposium on "Technologies for Service Realization in Next Generation Network (NGN)" at the IEICE Society Conference in September 2007.

In addition, to ensure the creation of a large number of high-quality papers in our technical field, we will continue to organize the IEICE Transactions on Communications B.

(For more information, please see our home page.

URL: <http://www.ieice.org/cs/ns/>)



**Figure 2: Research award recipients with NS chair Dr. Miyake and vice-chair Prof. Yamamoto.**

# Report on the Sixth International Workshop on Assurance in Distributed Systems and Networks (ADSN2007)

Yoshiaki Kakuda  
Hiroshima City University



## 1. Introduction

The International Workshop on Assurance in Distributed Systems and Networks (ADSN) was initiated in Vienna, Austria in 2002, and after the great success of five continent events, the sixth workshop was held in Toronto, Canada on June 29, 2007 in conjunction with the 27th International Conference on Distributed Computing Systems (ICDCS). All the past workshops and ADSN2007 were sponsored by the IEEE Computer Society Technical Committee on Distributed Processing in cooperation with the IEICE Technical Committee on Information Networks and the IEICE Technical Committee on Dependable Computing. The details of the workshop are seen in [1].

## 2. Objective of ADSN

The objective of the workshop is to provide an effective forum for original scientific and engineering advances in Assurance in Distributed Systems and Networks. Along with recent rapid growth of the Internet and ubiquitous networks, autonomous decentralized systems are connected with each other. In these distributed systems and networks, heterogeneous requirements are independently generated and the requirements themselves are frequently changing. Assurance in these distributed systems and networks is defined as capability of guaranteeing functional and nonfunctional system properties such as dependability, security, timeliness and adaptivity to heterogeneous and changing requirements. The workshop theme is critical in meeting ever more demanding requirements for assurance in systems and networks, especially in the future Internet and ubiquitous networks. Technologies supporting assurance including integration of various

technologies such as real time, fault tolerance, autonomy, mobility and intelligence will have to be incorporated in complex distributed systems and networks.

## 3. ADSN2007 Organization

ADSN2007 organizers are as follows.

General Chair: Kinji Mori, Tokyo Institute of Technology, Vice Chair: Yoshiaki Kakuda, Hiroshima City University

Program Chair: Chin-Tser Huang, University of South Carolina, Vice Program Chairs: Takeiki Aizono, Hitachi, Yinong Chen, Arizona State University, Miroslaw Malek, Humboldt-Universitaet zu Berlin

The Program Committee consists of 21 members from Asia, Europe and Americas.

## 4. ADSN2007 Program

In response to the Call for Papers, twelve papers have been submitted to the workshop. As a result of comprehensive reviews by the Program Committee, eight high quality papers were selected to be included in the program of ADSN2007 [2].

The program consists of the following four sessions.

Session 1: Assurance in Ad Hoc and Sensor Networks

(Chair: Chin-Tser Huang) 3 papers

Session 2: Assurance Technologies and Applications

(Chair: Tomoyuki Ohta) 3 papers

Session 3: Analysis of Assurance Methods

(Chair Junichi Funasaka) 2 papers

Session 4: Panel on Assurance Provision

(Chair: Chin-Tser Huang) 3 panelists

About twenty participants joined the workshop and enjoyed paper presentations and panel discussions. The panelists Murat Demirbas, Yoshiaki Kakuda and Kinji Mori discussed the assurance system concepts and the current and future assurance technologies.

## 5. Summary

This report has concisely explained ADSN2007. We are grateful to the ICDCS Steering Committee Chair Ming T. (Mike) Liu, Ohio State University for his constant advice and support to ADSN. The ADSN2008 will be held in Beijing, China in June, 2008 in conjunction with ICDCS2008.

## References

- [1] <http://adsn.nets.ce.hiroshima-cu.ac.jp>
- [2] Proceedings of 27th International Conference Distributed Computing Systems Workshops, ISBN 0-7695-2838-4, 2007.



Fig. 1 Paper Presentation

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

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

### IEICE Societies and Publications

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

### Membership Charges (UNIT : Japanese YEN)

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

#### NOTE

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

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

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.



## IEICE Overseas Membership Application Form

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

**Personal Information**

**Full name:** \_\_\_\_\_ **Nationality:** \_\_\_\_\_  Male  
 Female

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 & Systems

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

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

**Journal subscription (optional)**  (Japanese)

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

Entrance charge..... \_\_\_\_\_ Journal subscription (optional)..... \_\_\_\_\_  
 Annual charge..... \_\_\_\_\_ Mailing option:  Air mail..... \_\_\_\_\_  
 Additional Society (optional)..... \_\_\_\_\_  SAL mail..... \_\_\_\_\_  
 Additional Transactions (optional)..... \_\_\_\_\_ **Total remittance**..... \_\_\_\_\_

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Endorser's name \_\_\_\_\_ Membership number \_\_\_\_\_ Endorser's signature \_\_\_\_\_ Date \_\_\_\_\_

## From Editor's Desk

### 2007 IEICE Society Conference in Tottori

2007 IEICE Society Conference will be held in Tottori prefecture in September. Where is the most popular tourist destination in Tottori? Tottori dune came to mind at first, so I checked Tottori dune. It is the largest dune in Japan. Tottori dune spreads 16 km in east and west, and 2.4 km in south and north. The largest ups and downs difference of geographical features of the dune is about 92 meter. Tottori dune is also chosen as the best 100 setting sun in Japan. If I have a chance to visit Tottori, I would like to go to the dune in the evening and enjoy the dune which reflects the setting sun and changes its color in every moment.

IEICE replaced its board members of IEICE Communications Society in May of this year. New Global News Letters (GNL) Editorial Staffs edit GNL from this issue. We would like to provide attractive articles and information. We hope you will enjoy this issue!

IEICE Global News Letter Editorial Staff

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No special order is observed



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## Call for Papers

### Joint Special Section on Opto-electronics and Communications toward NGN and beyond

The IEICE (Institute of Electronics, Information and Communication Engineers) Transactions on Communications (EB) and the IEICE Transactions on Electronics (EC) announce a forthcoming joint Special Section on Opto-electronics and Communications toward NGN and beyond to be published in July 2008. This Special Section is being published in conjunction with the 12th Optoelectronics and Communications Conference (OECC 2007)/16th International Conference on Integrated Optics and Optical Fiber Communication (IOOC 2007) which will be held in Yokohama, Japan on July 9-13, 2007, cosponsored by IEICE Communications Society and IEICE Electronics Society.

The purpose of this Special Section is to present a collection of original papers that give an overview of current progress of research, development, and applications of optical communication systems and optoelectronics.

The major topics of interest include:

1. Networks and Applications toward NGN and beyond,
2. Transmission Systems and Technologies,
3. Optical Fibers, Cables and Fiber Devices,
4. Optical Active Devices and Modules,
5. Optical Passive Devices and Modules

Submission of the paper which will be presented at OECC/IOOC 2007 is strongly encouraged, but presentation of the paper at OECC/IOOC 2007 will not be mandatory for its inclusion in this Special Section. At the same time, presentation at the Conference will not ensure the acceptance of the paper. Note that the regular reviewing process will be performed for this Special Section.

The deadline for the paper submission is October 12, 2007. Manuscripts should be prepared according to the guidelines indicated in the Information for Authors. The latest version of it is available at the web site, [http://www.ieice.or.jp/eng/shiori/mokuji\\_cs.html](http://www.ieice.or.jp/eng/shiori/mokuji_cs.html) for EB and [http://www.ieice.or.jp/eng/shiori/mokuji\\_es.html](http://www.ieice.or.jp/eng/shiori/mokuji_es.html) for EC, or you can refer its brief summary attached to IEICE Transactions. The length of a paper should not exceed eight printed pages in principle. The term for revising the manuscript after acknowledgement of conditional acceptance for this special section could be shorter than that for other issues (60 days) because of the tight review schedule. In this special section, only the electric submission is adopted. Prospective authors are requested to follow carefully the submission process described below.

1. Submit papers using the IEICE Web site [https://review.ieice.org/regist\\_e.aspx](https://review.ieice.org/regist_e.aspx). The acceptable format of the file is PDF file. Other any files, e-mail submission, and postal mail are NOT acceptable. Authors should choose, considering the technical field of the paper, the [Special-EB] or [Special-EC] Joint Special Section on Opto-electronics and Communications toward NGN and beyond as a "Type of Issue/Category of Transactions" on the online screen. Do not choose [Regular-EB] or [Regular-EC] or other special sections.
2. "Copyright Transfer and Page charge Agreement" and "Confirmation Sheet of Manuscript Registration" must be sent by postal mail to the following address (secretariat of this issue). Please mark "Joint Special Section on Opto-electronics and Communications toward NGN and beyond" on the envelope. We cannot start the review process without them, even if we receive the manuscript.

(For the paper to IEICE Transactions on Communications)

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\*The papers related to the optical communication systems will appear in the Special Section of the IEICE Transactions on Communications (EB), and the papers related to the devices and modules will appear in the Special Section of the IEICE Transactions on Electronics (EC).

**\*Please note that at least one of the authors must be an IEICE member when the manuscript is submitted for review. If the manuscript is accepted for publication, all authors, including authors of invited papers, should pay for the page charges covering partial cost of publication. Authors will receive 50 copies of the reprint.**

# Call for Papers

## *Special Section on 2007 International Symposium on Antennas and Propagation*

The IEICE (Institute of Electronics, Information and Communication Engineers) Transactions on Communications announces a forthcoming Special Section on “2007 International Symposium on Antennas and Propagation” to be published in **June, 2008**.

The 2007 International Symposium on Antennas and Propagation (ISAP2007) will be held in Niigata, Japan on August 20-24, 2007, which aims at providing an international forum for exchanging information on the progress of research and development in antennas, propagation, electromagnetic wave theory, and related fields. This symposium, the 12<sup>th</sup> ISAP, is organized and sponsored by *IEICE*, and is held in cooperation with URSI, IEEE/AP-S, IET, CIE, and KEES. By taking this opportunity the Special Section on ISAP2007 has been planned to publish articles which are **limited** to the papers **presented** at oral or poster session in ISAP2007. Your participation to the ISAP2007 and the contribution to this special section would be greatly appreciated.

### 1. Scope:

The major topics include, but are not limited to

- Special Topics (AP for Ubiquitous Systems, AP-related MIMO Technologies, On-body Wireless Communications, Broadband and Multi-band Antennas and Applications, EBG and Metamaterials, SAR Polarimetry and Interferometry)
- Antennas
- Propagation
- Electromagnetic Wave Theory
- AP-related Topics

Deadline information of ISAP2007 is provided at the web site: <http://www.isap07.org/>

### 2. Submission Instructions:

Papers have to be submitted by **October 15, 2007 (JST)**. Manuscripts should be prepared according to the guideline given in the “Information for Authors”. The latest version is available at the web site, [http://www.ieice.org/eng/shiori/mokuji\\_cs.html](http://www.ieice.org/eng/shiori/mokuji_cs.html), or you can refer to its brief summary attached to IEICE Transactions. The length of the paper should not exceed 8 printed pages in principle. The term for revising the manuscript after acknowledgement of conditional acceptance for this special section could be shorter than that for other sections (60 days) because of the tight review schedule. In this special section, only electronic submission is accepted. Prospective authors are requested to follow the submission process described below carefully.

1. Authors have to present their paper at oral or poster session in ISAP2007 for submitting their paper to this special section. At least one of the authors must be an IEICE member when the manuscript is submitted for review. Deadline for online paper submission of the ISAP2007 is **March 1, 2007 (JST)**.
2. Submit papers using the IEICE web site [https://review.ieice.org/regist\\_e.aspx](https://review.ieice.org/regist_e.aspx). The PDF file format is the only acceptable file format. Any other file formats, e-mail submission, or postal mail are NOT acceptable. Authors should choose the [**Special-EB**] *2007 International Symposium on Antennas and Propagation* as a “Type of Issue (Section)/Transactions” on the online screen. Do not choose [Regular-EB] Communications or other special sections.
3. The “Copyright Transfer and Page Charge Agreement” and “Confirmation Sheet of Manuscript Registration” have to be sent by postal mail to the following address (guest editor of this special section). Please write “Special Section on ISAP2007” on the envelope.

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