

***IEICE Communications Society* GLOBAL NEWSLETTER Vol. 32**

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An Inaugural Message

Junji NAMIKI
President, IEICE Communications Society



I am Junji NAMIKI that serves as the society chairman from May, 2010 by the result of 13000 society member election. Our society has initiated this academic society as the succession of research activities related to the communication infrastructure as the key theme in the history of Institute of Electronics, Information and Communication Engineers that exceeds 100 years, and the prompt shift to a society independent profit system, etc.

It is the still maximum society in four of academic society organization IEICE.

Being aware of heavy responsibility as chairman, I declare to complete my duty for achievement of election belief declaration by my best.

Well, recent net service (not “Communication service in the narrow sense”) spreads tremendously and no one can conceal surprising in prosperity. The field where the net service surpassed the real business services comes to stand out, and the amount of Commercial Message (CM) of the medium wave radio broadcasting has already surrendered the head position to Internet CM in the field of broadcasting. And, simultaneous delivery service of the medium wave radio broadcasting by the Internet (radiko.jp) starts further in the city part of Tokyo and Osaka, and a free charge and high performance service by Web that Google etc. draw out one after another achieves splendid advances. In contrast to net business briskness, it is actual situation to turn our eyes away to the decline of Japanese IT company. It brought a misfortune on “communication” that it has been considered to contribute to the net service most went off from the charm subject of the young students.

Now, all most universities’ capacity fulfillment rate of the department that names such as “Communication” and “Information” are tearfully driven in to the capacity crack for fear of the decrease of T-score (Standard Score) that shows the college administration difficulty low. If the society membership decrease doesn't stop, and either this decrease rate continues, it is a situation to be going to shortly the day when Status as the maximum society in IEICE is slipped out.

The contrast between net service in good condition and Japanese information-technology industry in single-minded decline. What does this contradiction between them mean?

Even if the telecommunications providers in the world have taken long time, the TV telephone has

served so far of no spread and no development. One of venture companies “Skype” deployed just this service all over the world easily by use of the overlay system. We are able to see the appearance of the grandchild and the lover in the distance, and to enjoy it in free manner, in addition the image information of misjudged TV program by free YouTube.

What is the root of recent convenience that Web and P2P bring? The answer might be clear. A general people finds value and the business opportunity only to the convenience that those cooperation (interaction) produces though the individual element technology development like the transmission technique, the signal processing technology, the semiconductor technology, the artificial intelligent technique, the control technology, and the software technology, etc. are remarkable.

A lot of admirable our society leaders have been working out the member value improvement plan one after another at last few years. The typical measures are efforts to the issue of Global News Letter, Society Magazine, and paper online public opening, and the overseas member acquisition. However, it is necessary for us to get down to promote studied of “integration and servicing technology of the elemental technology” seriously in background of their steady, important measure, preparing for the new net service prosperity more and more. Though these themes have been researched by other academic societies mainly, our society has treated them secondarily and temporarily. Now, how about preparing open preferential space for the service solution people who has not shown interest at all on our academic society and for other society? If it is said that financial matters are in fetters, the sub-society can be seen for making such a field be possible. We have fortunately enough funds on hand now, and, in addition, a large sum of surplus is just saved on head office special fund every year. There is no thing related to an inert austerity and the diminishing equilibrium to miss this important paradigm shift stage too much. This year of 2010, carry our society restructuring with new sense of values at any cost.

I promise 13000 Society members to carry out the reform resolutely by my best again as recommended for the chairman.

Report on 26th IN/NS Research Workshop

Takeshi Kawasaki[†], Takashi Ikebe[†], Kiyoshi Ueda[†], Takumi Miyoshi^{††},
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1. Introduction

The 26th IN/NS Research Workshop took place in Miyazaki, Japan, March 3-4, 2010. The workshop was sponsored by the technical committee on Information Networks (IN) and Network Systems (NS) of the IEICE Communication Society. The workshop's aim was to discuss the technical direction and research topics for future networks. It contained a consolidated session with the 21st International Teletraffic Congress Specialist Seminar (ITC-SS21). A record showing of 157 participants underscored the success of the workshop. The overall theme of the workshop was "Beyond the Galapagos - R&D strategy from the viewpoint of Japanese potential." The workshop featured invited talks, overviews of the talks, and a panel discussion.



Fig.1 Overview (Workshop).

2. Invited talks

The general chair of the workshop, Professor Hiroyuki Morikawa (The Univ. of Tokyo), invited nine distinguished experts involved in Teletraffic and R&D strategy. These speakers addressed new challenges in issues of R&D strategy from the viewpoint of Japanese potential from political and industrial perspectives. Figure 2 shows photographs of the speakers.



Fig. 2 Invited speakers.

- Dr. Akira Takahashi (NTT Corp.) presented QoE assessment and monitoring of IPTV.
- Dr. Satoshi Miyaji (KDDI Corp.) discussed the trends of video distribution services and related standardization activities.
- Mr. Jun Yamada (Qualcomm Japan Inc.) expressed an opinion that Japanese companies should fuss over details.
- Mr. Yoshiyuki Kunito (Sony Corp.) presented an analysis of the Japanese manufacturing industry and technological development. He proposed that Japanese companies should attach importance to "what" instead of "how".

- Mr. Masanori Kusunoki (Microsoft Inc.) addressed the technical issues of the Galapagos phenomenon from the viewpoint of software development.
- Dr. Yuji Inoue (TTC) expressed an opinion on the desirable relationship between Japan and other Asian countries to succeed in the global market.
- Mr. Syunichi Kita (NRI) presented the strategy of development beyond the Galapagos; an escape from the Galapagos.
- Dr. Masanobu Fujioka (Nippon Ericsson K.K.) showed the importance of the international standard and development targeting the global market.

3. Panel discussion

As the chairperson, Professor Morikawa organized the panel discussion. Project Associate Professor Hisashi Onaga presented information and communications policy for Japanese R&D strategy. Professor Morikawa and the six speakers (Mr. Kunito, Mr. Kusunoki, Dr. Inoue, Mr. Kita, Dr. Fujioka, and Project Associate Professor Onaga) took their seats as panelists, and the audience filled the hall.

First, Professor Morikawa gave the theme of the discussion to the panelists: “What is Beyond the Galapagos - R&D strategy from the viewpoint of Japanese potential -.” The panelists then expressed their opinions from their own perspectives, and actively discussed the issues involved. In addition, they answered various questions from the audience.

The discussion showed that there is increasing interest in the R&D strategy of the manufacturing industry.



Fig. 3 Panel Discussion.

4. Conclusion

This year’s workshop invited key persons to speak on the R&D strategy of the manufacturing industry from the viewpoint of Japanese potential. We believe that the presentations given by the invited speakers and the panel discussion provided fruitful insight into research and development.

The technical committees on NS and IN plan to hold next year’s workshop in March 2011. Finally, we would like to express our gratitude to the workshop committee

members, particularly to, T. Usui (Oki), N Saitou (NEC), S. Tanaka (Toshiba), S. Imai (Fujitsu) and M. Shimizu (Hitachi) who made this workshop possible.



Fig. 4 The hall with a large audience

Annual Report of Technical Committee on Information Networks

Takahiro Tamura , Junya Akiba, NTT Corporation.

1.Introduction

The technical committee on IN (Information Networks) is a technical committee 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 Professor Hiroyuki Morikawa of the Univ. of Tokyo. The vice chairman is Mr. Hikaru Suzuki of NTT Communications Corporation. The secretaries are Mr. Junya Akiba of NTT Corporation. and Dr. Naoki Imai of KDDI R&D Labs. Inc. The assistant secretaries are Mr. Takahiro Tamura of NTT Corporation and Assistant Professor Shinji Inoue of Hiroshima City University. This document presents the IN's annual report for activities from May 2009 to Mar 2010.

2.IN Activities

The IN holds ten two-days technical meetings and a workshop every year. Many researchers participate in the meetings and report their latest technical research and development results. The number of technical reports is one of the largest among all technical committees of the Communications Society of the IEICE. Some meetings are co-organized with other technical committees. The venues and the main topics of each meeting are shown in Table 1.

Each technical report is submitted in a paper and published as a Technical Report of the IEICE. Authors of selected papers have received Information Networks Research Awards the ceremony of which is held in March every year. This year, the following 4 excellent papers were selected from 215 papers.



Fig.1 Winners of IN Research Award

(from left to right)Y.Shimamura, M.Youro, S.Miyazaki, H. Suzuki (vice chairman), H. Morikawa(chairman), K.Ishibashi, A.K. Abdul Hamid, K.Sato, M. Toyama

- Keisuke Ishibashi, Tsuyoshi Toyono, Kazumichi Sato, Meidai Saito, “Monitoring DNS Cache Poisoning Attacks”
- Minori Youro, Sumio Miyazaki, Yuichi Shimamura, “An Application Method of DNS in Selection of IPv4 over IPv6 Tunnel”
- Haruno Kataoka, Masashi Toyama, Yoshiko Sueda, Osamu Mizuno, Kenji Takahashi, “Contents collaborative control method in the SIP-Web session linkage system”
- Ahmad Kamil Abdul Hamid, Yoshihiro Kawahara, Tohru Asami, “Cache Design for RESTful Active Proxy for Efficient SNMP Monitoring”

Reference

[1] IN, <http://www.ieice.org/cs/in/eng/>

Date	Venue	Main topics	Num. of reports	Num. of participants each day
May. 21-22	Kikai-Shinko-Kaikan Bldg. (Minato)	Multihop, Mesh Network, Network Coding, Wireless communication	11	55,70
Jun. 11-12	University of Fukui. (Fukui)	Session Management, P2P, Overlay Network, Performance Analysis and Evaluation, Reliability	13	32,25
Jul. 9-10	Hokkaido Univ. (Sapporo)	Distributed Autonomous Network, Grid Computing, VPN, DDoS, Network Security, PAN, Sensor Network	14	23,24
Sep. 10-11	Tohoku Univ. (Sendai)	Post IP Networking, Network Model, Internet Traffic, TCP/IP, Multimedia Communication, Network Management, Resource Management, Private Network, NW Security	24	90,61
Oct. 8-9	KDDI Laboratory (Fujimino)	IP Backbone, MPLS, GMPLS, Photonic Network	5	44,22
Nov. 12-13	Fukuoka Institute of Technology .(Fukuoka)	Home NW, Ubiquitous NW, Context-aware and e-commerce	19	47,37
Dec. 10-11	Kobe Univ. (Kobe)	Network Control, QoS, Routing, Multicast, Mobile Network, Mobile IP	23	33,28
Jan. 14-15	Hiroshima city Univ. (Hiroshima)	Contents Delivery, Context-aware, IPv6, Authentication, Identity/Naming Management	16	35,23
Feb. 4-5	Okinawa TEXIRURU. (Naha)	NGN, VoIP, FMC, Distributed Autonomous Network, Software Agent, Web Service, Web2.0	18	28,28
Mar. 4-5	Miyazaki Phoenix Seagaia Resort.(Miyazaki)	NS/IN technical meeting and workshop	72	216,220

Report on the Forth International Symposium on Medical Information and Communication Technology (ISMICT2010)

Huan-Bang Li

National Institute of Information and Communications Technology (NICT)

1. Introduction

The Forth International Symposium on Medical Information and Communication Technology (ISMICT2010) was held in Taipei, Taiwan on March 22 through 25, 2010. The focus of ISMICT2010 is on “Intelligent Mobile Computing for Better Medical Services”. The event is sponsored by a number of universities and organizations. IEICE Communication Society is one of the technical sponsors. This report provides a brief overview on the event with background knowledge.

2. Background

Increase of aging population and demand for high quality of medical and healthcare services motivate the research and development (R&D) activities on the related technologies. In 2006, IEICE Communication Society approved a time-limited Technical Committee on Medical Information and Communication Technology (TC-MICT) [1], which can be regarded as an important effort from academy to promoting MICT.

One main characteristics of TC-MICT is the cooperation among professors, researchers, as well as engineers from both ICT and medical societies. TC-MICT has been carrying out a series of academic activities including organization of regular domestic workshops, edition of special sections on IEICE Transactions, and organization of special sessions at IEICE General Conferences and Society Conferences, etc. International Symposium on Medical Information and Communication Technology (ISMICT) is one of the main events technically sponsored by TC-MICT.

The first event, ISMICT2006, was held in Yokohama, Japan on December 1-2, 2006 with members from TC-MICT as main local organizers. ISMICT2007 was held in Oulu, Finland on December 12-13 with Oulu University as the local host. The third event was held in Montreal, Canada on February 24-26, 2009, although it was originally scheduled in December 2008. The local host of ISMICT2009 is McGill University Health Center. The delay of the third event is a direct result of the world economic shrink during that period. ISMICT2010 is the fourth event in this series. The local hosts include National Chiao Tung University and China Medical University. This combination of organizers reflects the principle of the symposium very well to get ICT researchers and engineers together with medicine professionals.

3. Main topics in ISMICT2010

The organizers successfully invited many famous figures to deliver plenary speech from different aspects. These plenary speeches well addressed main topics related to ISMICT. Titles of total 12 plenary speeches delivered at ISMICT2010 are as follows.

- What of the medical information do we really need from communication technology — A cardiologist's view
- Standardization of body area networks
- Body area networks – application, market and technology
- Standard and business of wireless body area network(BAN) and further research for ubiquitous medical healthcare based on advanced ICT
- Global personal health record
- Personal health record
- Wearable body area network for healthcare applications
- Application of wireless EKG monitor in telecare
- The application of telecare for patients with cardiovascular disease
- Current development of wireless EKG monitor in Taiwan
- You can run but you can not hide: methodology and applications of an accurate RFID-based indoor location tracking system
- Opportunities and challenges in adoption of electronic medical records in Taiwan



Figure 1 Panel discussion
(The first on the left is co-chair, Prof. Ryuji Kohno,
The second from the right is the author)

As can be seen from the above plenary speeches, body area network (BAN) was a main focus on the symposium. A panel discussion was held to discuss “Technology Solution for Body Area Network”. Steering committee co-chair and general co-chair, Prof. Ryuji Kohno coordinated the panel as shown in Figure 1. The author also joined the panel as a speaker.

There was also a demonstration entitled “ICT in ECG applications - Demo Show” organized by general co-chair, Prof. Chen-Yi Lee as shown in Figure 2. This demonstration showed a prototype ECG delivery network system developed by National Chiao Tung University, Taiwan.

Besides the above topics, two separated tracks were organized for presentations of technical papers. Main categories of the technical presentations are as follows.

- ICT for healthcare and safety
- New technology for WBAN
- Wireless WBAN channel models
- Bio-informatics
- Science & technologies for healthcare and medicine
- WBAN transport protocol for biomedical information
- Telemedicine

One can find more detail about the technical program from the WEB of the symposium [2].

4. Statistics

As summarized by the local organizers, there were 85 registered participants in ISMICT2010. The author noticed that many local university students were around the symposium site and some of them acted as organizing staffs. Therefore, the number of attendees should be around 100 in total. The participants hold a broad geographical distribution including Japan, South Korea, Finland, Taiwan, United States, Australia, Sri Lanka, Belgium, Greece, Poland, Canada, India, and Belize. Total 46 technical papers were accepted and presented at the symposium.

Some very important figures from Taiwan attended the symposium. A minister without portfolio delivered a welcome speech. President of National Chiao Tung University and Chairman of China Medical University Hospital also attended the opening session and some of the technical sessions.

5. Connecting to the Next

ISMICT2010 was held in Grand Hyatt Taipei Hotel, which is next to the famous Taipei 101 finance tower. Some of the participants may have taken the chance to experience the record height. During the symposium, the steering committee members held a meeting to evaluate the next host for the symposium. Several proposals were submitted to bid for ISMICT2011. A decision will be made and announced soon.

6. Reference

- [1] <http://www.ieice.org/~mict/>
 [2] <https://www.ismict2010.org/index.htm>

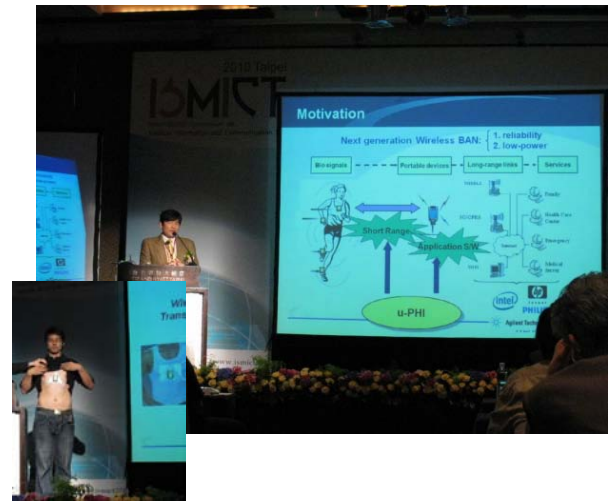


Figure 2 Demonstration for ECG delivery (Co-chair, Prof. Chen-Yi Lee (upper) is explicating the system while a student (lower) is showing the devices.)

Report on the 14th International Conference on Optical Network Design and Modeling



Nagao Ogino, TPC Member (KDDI R&D Laboratories Inc.)

Hajime Nakamura, Publication Co-Chair (KDDI R&D Laboratories Inc.)

Ken-ichi Kitayama, General Chair (Osaka University)

1.Introduction

The 14th International Conference on Optical Network Design and Modeling (ONDM 2010) was held from January 31st to February 3rd, 2010 in Kyoto Institute of Technology, Japan. ONDM 2010 was co-sponsored by International Federation for Information Processing (IFIP) Technical Committee 6 (TC6), Information Processing Society of Japan (IPJS) and Kyoto Institute of Technology, and was technically co-sponsored by IPJS SIG-IOT, IEICE Communications Society, IEICE Technical Committee on Photonic Network, IEEE Communications Society and Photonic Internet Forum. About 100 researchers attended mainly from Italy, USA, France, UK, Spain, Denmark, Belgium, Australia, Canada, Germany and Japan. ONDM 2010 first held in other than Europe was the fruit of the successful invitation activity for a long term.

2.ONDM 2010 program

ONDM is a relatively small-scale but unique annual international conference focusing on cutting-edge and state-of-the-art research in optical networking and newly emerging areas. ONDM 2010 consisted of 2 workshops, 2 keynote speeches and 8 serial technical sessions including a poster session. The exhibition program which 10 companies participated in was also held simultaneously.

Two workshops were held in the afternoon of the first day. The first one was entitled "NGN current situation, capabilities and expectations," and 6 speakers discussed on the NGN from various viewpoints. The second one was entitled "FTTH today and tomorrow," and 5 speakers introduced the progress of FTTH deployment in their countries.

The technical program consisted of 10 invited papers, 23 oral papers and 12 poster papers involving 16 papers presented from Japan. The keywords in the technical sessions were "Optical network performance and monitoring," "Energy efficiency in optical networks," "Optical network control and management," "Optical network planning and migration," "Optical access networks designs and protocols," "OPS and OBS network design" and "Optical grids and parallel networking," respectively.

3.Best paper award

ONDM 2010 Best Paper Award was certified to Ankitkumar Patel, Chengyi Gao, Jason Jue, Xi Wang, Oiong Zhang, Papparao Palacharla and Takao Naito for their paper entitled "Traffic Grooming and Regenerator Placement in Impairment-Aware Optical WDM

Networks". Moreover, two students were awarded the Travel Grant for their excellent papers.

4.Summary

ONDM 2010 was very successful and fruitful for encouraging the research activity in the field of optical network design and modeling. The next ONDM will be held in Bologna, Italy.

5.Reference

- [1]Official homepage:
<http://www-mura.ist.osaka-u.ac.jp/ondm2010/>.
- [2]ONDM 2010 Proceedings published by IFIP and IEEE Communications Society.



Fig.1 Workshop room



Fig. 2 Exhibition room



Fig. 3 Best paper award winner

Report on the 21st International Teletraffic Congress Specialist Seminar

Hajime Nakamura* and Hiroshi Saito**

*Organizing Committee Secretary, KDDI R&D Labs.

**Organizing Committee Chair, NTT



1.Introduction

The 21st International Teletraffic Congress (ITC) Specialist Seminar [1], sponsored by IEICE Communications Society and technically co-sponsored by Technical Committees on Information Networks (IN) and Network Systems (NS), were held on March 2nd and 3rd at Phoenix Seagaia Resort in Miyazaki.

The ITC represents a wide community of researchers and practitioners and is regularly organizing events like Congresses, Specialist Seminars and Workshops in order to discuss the latest changes in the modeling, design and performance of communication systems, networks and services [2]. The ITC Specialist Seminars are regularly organized on specific themes which are usually hot topic issues. Their purpose is to gather more frequently top level experts for in-depth discussion on key issues relevant to the chosen themes. The theme of the 21 ITC Specialist Seminar is “Multimedia Applications - Traffic, Performance and QoE”.

2.Program

To support the emerging multimedia/video services that are accessed from diverse devices over various networks, it is crucial to better understand the fundamental characteristics of services and the underlying systems; e.g., characterizing service workload and modeling/evaluating system performance. It is also crucial to address how we can monitor and improve end-to-end QoS and user QoE (Quality of Experience) in these services. The primary objectives of this seminar are to identify early and future traffic and performance issues and to develop methodologies that address various aspects of traffic and performance in multimedia applications and video services.

Twenty-seven people including speakers from Germany and Sweden participated in the seminar. It started with a keynote speech titled "Future TV services conveying an enhanced sense of reality" by Mr. Eisuke Nakasu, NHK. Mr. Nakasu presented a trend of TV services and a direction of technology pursuing reality. Twelve papers were presented and discussed in four technical sessions focusing on “QoE”, “traffic modeling”, “P2P” and “new applications and QoS”, respectively. The presented papers covers technical topics such as congestion control, traffic measurement, performance measurement, QoS management, traffic forecasting and network design. Closing is a consolidated session with the 26th IN/NS Research Workshop. In the session, Mr. Akira Takahashi, NTT, and Mr. Satoshi Miyaji, KDDI, made presentations

titled "QoE assessment and monitoring of IPTV" and "Trends on video distribution services and related standardization activities", respectively, as invited speakers. There were around one hundred attendees in this session.

3.Summary

Through the keynote, the invited talks, the technical paper presentations and discussion, the participants exchanged their latest information on research activities and enhanced their expertise in the target areas of this seminar. The 22nd International Teletraffic Congress will take place on 7-9 September 2010 in Amsterdam, Netherlands [3].

Finally we would like to express our appreciation to the participants, the organizing committee members, the TPC members and particularly to J. Akiba (NTT), T. Mori (NTT), M. Kobayashi (NTT) and H. Koto (KDDI R&D Labs.) for their every effort in organization of this seminar.

4.Reference

- [1] <http://www.ieice.org/cs/in/itc-ss21/index.html>
- [2] <http://www.i-teletraffic.org/home/>
- [3] <http://www.i-teletraffic.org/itc22/home/>

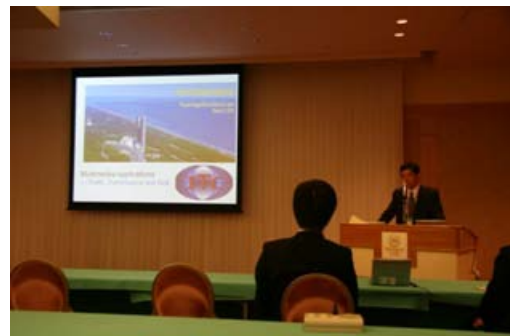


Fig.1 Opening Speech by Organizing Committee Chair



Fig.2 Banquet
(Photos by Dr. Markus Fiedler)

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)	Transactions (written in Japanese or in English)	
					(In one society)	
One title	Two titles					
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.

● **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

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- ◆ Please type or print in English. The deadline for submitting application form is the 1st day of every month.

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I recommend this applicant for IEICE membership.

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From Editor's Desk

● Job Hunting Activities

Students in Japanese graduate schools are experiencing harder time than ever in their job hunting. Since most research and development positions in the industry are occupied on a first-come first-serve basis by the prearrangement called *job matching*, some students who have involved too much in their university research and delayed their “research for job hunting” tend to suffer the loss of job opportunities. On the other hand, some students who desperately seek for security may suspend their research activity too early. Some of them may obtain informal assurances of employment from an unnecessarily large number of companies as an outcome of their job-hunting research. Now it's university professors' turn to have hard time motivating exhausted students to continue their university research after a long break.

By the time this Global Newsletter is available, the Board of Directors of our society will have been reorganized. Please look forward to next coming Global Newsletters!

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No special order is observed



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Call for Papers

Special Section on Extremely Advanced Optical Transmission Technologies and Transmission Optical Fiber Technologies towards Exabit Era

The IEICE Transactions on Communications announces that it will publish a special section entitled "Special Section on Extremely Advanced Optical Transmission Technologies and Transmission Optical Fiber Technologies towards Exabit Era" (**February 2011**).

Over the last twenty years, the optical communication technologies have seen an increase in transmission capacity per fiber by three orders of magnitude, achieving several Tbit/s transmission. If the data traffic continues to increase at a rate of 40 %~70 % per year, a capacity increase by three to five orders of magnitude is anticipated over the next twenty years. This means that in twenty years, the backbone transmission capacity should support well over Pbit/s per fiber and the core network should support Ebit/s throughput, where at home Tbit/s access handling 3D super-high definition stream videos will be a reality. The present optical technologies primarily based on WDM, however, have begun to see the ultimate physical limitations of the present systems, i.e., the transmission capacity imposed by Shannon's limit, the amount of optical power (bit/s rate) that can be transmitted safely in transmission optical fibers, the optical bandwidth for optical amplification, and the capacity of optical submarine cables systems now limited by the electrical power supplied to the optical amplifier repeaters. In order to go beyond these limits and to develop break-through technologies that will enable this dramatic leap, totally new multiplexing schemes beyond TDM/WDM, novel transmission optical fibers handling well over Pbit/s capacity as well as far-advanced optical submarine cables systems should be developed. Based upon the above background, a special section is being planned (scheduled to appear in the February 2011 issue) to further promote research and development of future "extremely advanced optical transmission technologies".

1. Scope

This special section aims at timely disseminating research activities in these areas. Topics include, but are not limited to:

- Novel transmission optical fibers towards Pbit/s transmission and beyond including photonic crystal fibers, photonic bandgap fibers, multi-core fibers, large-mode area fibers, multi-mode fibers etc.
- Advanced optical connectors, splicing and cabling technologies for the above novel transmission optical fibers
- Optical fiber fuse phenomenon, its mechanisms and halting/detection schemes
- Advanced multi-level modulation schemes (QAM, OFDM etc.) and demonstrations
- Novel multiplexing technologies such as SDM (Space-division Multiplexing), MDM (Mode-division Multiplexing), MIMO processing, etc.
- Novel optical signal processing schemes in the temporal, frequency and spatial domains
- Ultra-high capacity transmission experiments
- Novel optical amplifiers including broadband optical amplifiers, multi-core fiber amplifiers, parametric amplifiers, Raman amplifiers, etc.
- Novel optical node architectures towards Ebit/s throughput employing novel optical fibers and multiplexing schemes
- Advanced optical submarine cable systems and related technologies

2. Submission Instructions

The standard number of pages is eight for a PAPER and two for a LETTER. The maximum number of pages for the initial submission of a LETTER is four. 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. Prospective authors are requested to follow carefully the submission process described below.

1. Submit a manuscript and electronic source files (TeX/Word files, figures, authors' photos and biography) via the IEICE Web site https://review.ieice.org/regist_e.aspx **by June 30, 2010**. Authors should choose the [Special-EB] Extremely Advanced Optical Transmission Technologies and Transmission Optical Fiber Technologies towards Exabit Era as a "Type of Issue (Section)/Category of Transactions" on the online screen. Do not choose [Regular-EB].
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Send the above documents to:

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Call for Papers

---Special Section on Photonic Network Technologies in Terabit Network Era ---

The IEICE Transactions on Communications announces that it will publish a special section entitled "Special Section on Photonic Network Technologies in Terabit Network Era" in **April 2011**.

Since large-capacity stream transmissions for 4-K digital cinemas and high-definition video applications, and large-size file transmissions for P2P applications are widely used. Photonic networking technologies are required to support high-speed, cost-effective, flexible, scalable, reliable, and robust communication network infrastructures. To offer a terabit communication environment, a new scenario to crossly interact with upper layers is also required. To achieve these requirements, research and development on photonic networking technologies including their standardizations are extensively performed. Because of such reasons, a special section is being planned (scheduled to appear in the April 2011 issue) to further promote research and development of future photonic network technologies, which covers areas such as network devices, transport networking, and applications.

1. Scope

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

- Photonic network architecture
 - New-generation transport network, optical network test bed, inter-operability test, integration of electrical and optical technologies, low-power network
- Photonic network control and management
 - Traffic engineering, path computation element, protocols
- Photonic network system
 - Optical packet/burst/path switching, optical multiplexing, optical label processing, optical access
- Photonic network application
 - Grid computing, high-speed transmission protocol
- Photonic network device
 - Optical switch, optical signal processing, optical memory

2. Submission Instructions

The standard number of pages is 8 for a PAPER and 2 for a LETTER. The maximum number of pages for the initial submission of a LETTER is 4. 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 is 30 days.**

This special section will accept papers only by electronic submission. Prospective authors are requested to follow carefully the submission process described below.

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