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Technical Committee on Space, Aeronautical and Navigational Electronics (SANE) (2004 FY)



Chair; Korehiro Maeda, JAXA*

Vice chair; Yoshiaki Suzuki, NiCT

Secretariat; Yoshinori Arimoto, NiCT and Takashi Miwa, University of Electro-Communications

1. Introduction

The Technical Committee on Space, Aeronautical and Navigational Electronics (SANE) has conducted various activities in 2003 FY.

In May, 2004, Dr.Takashi Miwa (University of Electro- Communications) became new secretariat of SANE as a successor of Dr.Noboru Takata (JAXA). Mr.Yoshinori Arimoto (NiCT) is still secretariat of SANE. Dr.Korehiro Maeda and Dr.Yoshiaki Suzuki (NiCT) are still chairman and vice chairman, respectively.

In 2002-2003, various satellites such as MDS-1 (Feb., 2002), DRTS/USERS (Sep., 2002), ADEOS-II / μ -LabSat, WEOS, FedSat, MUSES-C were successfully launched in Japan. Results of these satellites were presented in SANE regular meetings, general conference of IEICE (March) and society conference (Sep.) of IEICE. After 2005, various satellites such as MTSAT-1R, ALOS, OICETS, ETS-VIII, and MTSAT-2 will be launched and these results will be presented in SANE regular meeting and IEICE conference.

* NASDA has been reborn as Japan Aerospace Exploration Agency (JAXA) on October 1, 2003 merging with the Institute of Space and Astronautical science (ISAS) and National Aerospace Laboratory of Japan (NAL).

2. Area of Interest

The SANE includes all aspects of research on space, aeronautical and navigational electronics and

relevant to areas of applications, systems and equipment.

Subjects to be covered include, but are not restricted to:

- The electronic and electromagnetic wave application systems relevant to moving objects, such as spacecraft, satellites, airplanes, vehicles and vessels (a radar, ranging and positioning, communication, tracking, attitude and orbital control, telemetry, command, etc.)
- The system, equipment, etc of remote sensing , communication, science and technology demonstration/evaluation.
- The system, equipment, and a simulation of navigation and traffic control

3. Activities

The SANE regular meetings are organized with IEEE AES Japan chapter, IEEE GRSS Japan chapter and other related technical groups. Table 1 shows the schedule of the meetings and conference on FY2004-2005 seasons.

Table 1 SANE regular meeting and Conference 2004-06

Date	Place	Main Themes	Co-or- ganizer
March 22-25	2004 General Conference of IEICE /Tokyo Institute of Technology	SB-8 (Results of various satellite missions) KB-2 (Quasi-zenious satellite system and its applications)	

		KB-4 (Challenge to manned and unmanned space exploration technology)	
Apr.25, 2004	Nippon Institute of Technology (Saitama)	Radar signal processing	
May 28	Kochi University of Technology(Kochi)	Remote sensing	
June 24-25	Tsukuba Space Center, JAXA (Ibaraki)	Space Applications Symposium -ADEOS-II-	Sponsored by JAXA
July 30	Electronic Navigation Research Institute. (Tokyo)	Navigation and traffic control	
August 29	Kikai ShinkoKaikan	Radar and Navigation	
Sep.21- 24	2004 Society Conference of IEICE/Tokushima University	BK-1 Spectrum for observation and its technology items	
Oct.29	University of Electro-Communications	Environment measurement	
Nov.26	JAXA(Sagamihara)	Space exploration	
Dec.17	NiCT (Kashima)	Satellite application	SAT
Jan.,28, 2005	Kikai Shinko Kaikan	Navigation	
March 3 and 4	WSANE'2005 Korea Aerospace Research Institute (KARI)		IEEE GRSS Japan Chapter, AIAA Japan Sponsored by NiCT and JAXA
March 21-24	2005 General Conference of IEICE/ Osaka University	Special session: Observation and communication system of space exploration spacecraft	
Apr. 28	Nippon Institute of Technology (Saitama)	Radar signal processing	
May.27	Kochi University of Technology(Kochi)	Remote sensing	
Jun.24	Tsukuba Space Center, JAXA (Ibaraki)	Space Applications Symposium	Sponsored by JAXA
Jul. 29	Electronic Navigation Research Institute. (Tokyo)	Navigation and traffic control	
Aug.26	NiCT(Okinawa)	Radar and navigation	
Sep.20- 23	2005 Society Conference of IEICE/ Hokkaido University		
Oct.6-7	Nagasaki University	Subsurface	MMIJ/

Nov.25	JAXA(Sagamihara)	Space environment	
Dec.22	NiCT(Kashima)	Environment sensing	SAT
Jan.27, 2006	Kobe Aeronautical Center	Navigation	
Feb	WSANE'2006		
March	2006 General Conference		

All regular meetings are co-organized by IEEE AES Japan chapter.

2004 General Conference of IEICE was held in Ookayama campus of the Tokyo Institute of Technology was held in March 22-25, 2004 and special session KB-4 was conducted on March 23, 2004 where chairman of this session is Professor Yoshinori Sakai (President of Communication Society of IEICE, professor of Tokyo Institute of Technology).

The title of this session is “Challenge to Manned and Unmanned Space Exploration Technology”. In this session, there are two special invited presentations. "Developing manned spacecraft technology, utilizing aerospace resources peacefully" (KB-4-1) by Professor Yang Hong of Chinese Academy of Space Technology (CAST) and “Mars Exploration Rovers : Telecom System Design and Operation Highlights (Polly Estabrook, Andrea Barbieri, Chad Edwards, Rob Manning, Monika Danos, ○ P.A.Ilott , Andre Makovsky (Jet Propulsion Laboratory) were presented.

English session “results of various satellite missions “ (SB-8) was also successfully held after KB-4 in March 23-25, 2004. Moreover, special session “Quasi-zenious satellite system and its applications” (KB-2) was presented in Sep.25, 2004.

In Sep.21-24, 2004 Society Conference of IEICE and special session “Spectrum for observation and its technology items” (BK-1) was also conducted on Sep.25, 2004.



Figure 1 Professor Yang Hong (CAST).



Figure 2 Dr.P.A.Illot (JPL).



Figure 3 Conference room for special session KB-4.

In March 3 and 4, 2005, International Workshop for Space, Aeronautical and Navigational Electronics

(WSANE'2005) will be held in KARI (Korea Aerospace Research Institute) in Daejun, Korea. This workshop will be held in collaboration with IEEE AES and GRSS Japan Chapter and AIAA Japan and sponsored by NiCT and JAXA (TBD). Details are shown in Annex 1.

In March 21-25, 2005, General Conference of IEICE (March, 2005) will be held and special session "Observation and communication system of space exploration spacecraft" will be conducted.

Special papers for "design and evaluation technologies of cost effective spacecraft" will be published in Japanese journal b of IEICE in Jan., 2005.

Major topics

Examples of major topics in space technologies are as follows:

[Earth Observation]

AQUA and ADEOS-II (ADvanced Earth Observing Satellite-II) was successfully launched on May, 2002 and Dec.14, 2002, respectively. Figure 4 shows sea surface temperature obtained by AMSR-E mounted on AQUA. Figure 5 shows the change of soil moisture in Africa obtained by AMSR-E.

Results of ADEOS-II were presented in Space Application Symposium-ADEOS-II- by SANE sponsored by JAXA.

ALOS (Advanced Land Observing Satellite) will be launched in 2005 to monitor earth environment. Figure 6 shows ALOS. The launch of (MTSAT)(Aeronautical and Meteorological satellite) series will be launched in 2005; MTSAT-1R (Multi-functional Transport SATellite) as shown in Figure 7 will be launched in 2005 and MTSAT-2 will be launched after 2005. GOSAT (Green-house effect gas Observation Technology Satellite) to observe green-house effect gas will be launched in FY 2007.

GPM/DPR(Global Precipitation Mission/Dual-frequency Precipitation Radar) to measure global rainfall distribution will be launched after 2008.

[Communication]

DRTS (Data Relay Test Satellite) to transfer data from earth observation satellites and the International Space Station to the ground station in Japan was successfully launched on Sep. 10, 2002 and the first earth observation data from ADEOS-II has been transferred via DRTS to Japan on Feb., 17, 2003. This is the first experiment in the world using Ka-band data relay system. ALOS data and JEM data will be transferred via DRTS.

Optical intersatellite communication experiment between OICETS (Optical Inter-Orbit Communications Engineering Test Satellite) and ESA's ARTEMIS is planned in 2005 as shown in Figure 8. Quasi-zenithous satellite (ex. figure-8 satellite) system are studied conceptually for the applications including mobile satellite communications at a high elevation angle, satellite-based positioning and will use half of the band 2605-2630MHz (Japan and Korea) as broadcasting-satellite service (sound) which has been allocated in WRC-2003.

[Space station]

Various experiments using JEM (Japanese Experiment Module) are planned. However, launch of JEM FM are delayed due to loss of space shuttle Columbia.

[Technology demonstration]

MDS-1 was launched in Feb. 4, 2002 and satisfactory data on commercial semiconductor devices, terrestrial solar cell, Common Pressure Vessel Type Battery, Solid-state Data Recorder, Parallel Computer System, and on Space Environment Data Acquisition equipment (SEDA)

under higher radiation environment using geostationary transfer orbit have been obtained and radio transmission was terminated on Sep. 27, 2003.

USERS (Unmanned Space Experiment Recovery System) was launched with DRTS to establish an unmanned autonomous-return system and conduct crystal growth experiments of high temperature super conductive material under micro-gravity environment. Recovery was realized early in the morning on May 30, 2003 and capsule was found around 10 am off Ogasawara Island.

The Space Environment Reliability Verification Integrated System (SERVIS) project was launched in Oct., 2003. The SERVIS was developed under a contract from the METI and NEDO. The purpose of this project is to verify Commercial Off-The-Shelf (COTS) parts and technologies in the severe space environment so that they can be utilized for space applications, thus establishing COTS evaluation guidelines and equipment design guidelines to utilize COTS. SERVIS-2 will be launched in 2005 or later.

Small satellites (50kg) such as μ -LabSat (JAXA), and WEOS (Whale Ecology Observation Satellite)(Chiba Institute of Technology), FedSat (Australia) were launched with ADEOS-II as piggyback on Dec. 14, 2002. μ -LabSat was constructed by JAXA engineers and various experiments have been successfully conducted in collaboration with NiCT and JAXA. CubeSat XI and CUTE-1 were successfully launched on June 30, 2003 and have been operated with good conditions where these were developed by Tokyo University and Tokyo Institute of Technology.

INDEX is developed by JAXA and will be launched with ALOS.

SOHLA-1 spacecraft is promoted by the New

Energy and Industrial Technology Organization (NEDO) and implemented by Astro-Technology SOHLA. SOHLA is a private association of non-space SMEs (small and medium-sized enterprises) and developing PETSAT (Panel Extension Satellite) system with the University of Tokyo et al with technical support by JAXA and Osaka Prefecture University. SOHLA-1 is a demonstration satellite of PETSAT. JAXA and the Space Oriented Higashiosaka Leading Association (SOHLA) concluded a "cooperative agreement on small satellite technology" on May 20, 2004.

12 th satellite design contest was held in Oct.24, 2004 in Tokyo Metropolitan College of Aeronautical Engineering and co-chaired by IEICE and other societies, JAXA, Japan Space Forum. Prize of IEICE was provided to students of Shizuoka university which proposes anti-radiation satellite using spherical coil as shown in Figure 9.

[Science]

The MUSES-C(MU Space Engineering Satellite-C)was successfully launched from Kagoshima Space Center by M-V-5 launch vehicle on May 9, 2003. TheMUSES-C spacecraft as shown in Figure 10 was renamed "Hayabusa" (falcon). Hayabusa will observe an asteroid and return rock sample to the earth in the summer of 2007. Hayabusa has been flying smoothly in a heliocentric orbit for about a year using its ion engines. On May 19, 2004 Hayabusa came close to the Earth, and successfully carried out an earth swing-by to place it in a new elliptical orbit toward the asteroid "ITOKAWA". The earth swing-by is a technique to significantly change direction of an orbit and/or speed by using the Earth's gravity without consuming onboard propellant. Hayabusa came closest to the Earth at 3:22 p.m. on

May 19 (Japan Standard Time),2004 at an altitude of approximately 3700 km. The combination of acceleration by the ion engines and the earth swing-by performed this time was the first technological verification in the world, both in the sense of plot and implementation.

SELENE (SELenological and Engineering Explorer) has been developed to observe moon from circular orbit of the moon. and will be launched after FY2005.

These afore-mentioned results for topics are presented in SANE regular meetings including Space Applications Symposium supported by JAXA held last Friday in June every year. They are also presented in SANE session in Society Conference (Sep.) and General Conference (March).

4. Paper Submission to Regular Meetings

Authors are requested to pre-register to the secretariat via E-mail (sane_ac-chair@mail.ieice.org). The following information must be provided in the pre-registration form.

- ◆ Title
- ◆ Names and affiliations of authors (Presenter is requested to be a member of IEICE or IEEEJ)
- ◆ Abstract (about 50 words)
- ◆ Address of corresponding author (Mail address, Fax number and E-mail address)

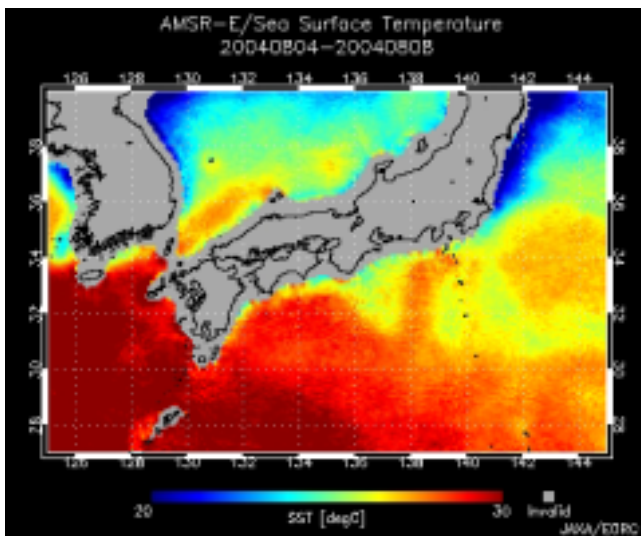


Figure 4 Kuroshio's large meander appearing in sea surface temperature distribution observed by AMSR-E (provided by JAXA)

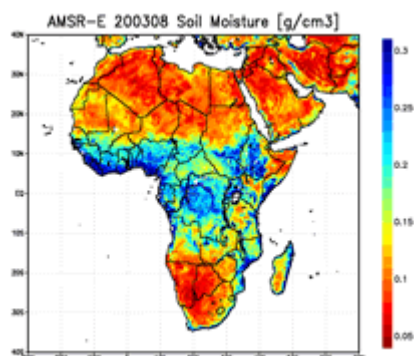
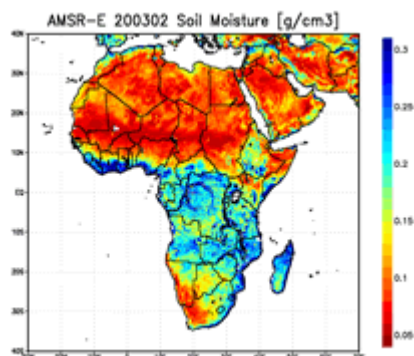


Figure.5 Change of soil moisture distribution of Africa observed by AMSR-E (provided by JAXA)



Figure 6 ALOS (provided by JAXA)

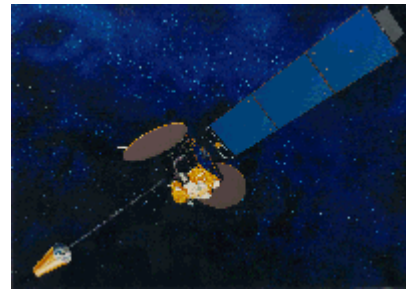


Figure 7 MTSAT-1R (provided by MLIT)



Figure 8 OICETS (provided by JAXA)



Figure 9 Anti-radiation satellite (provided by Shizuoka University)



Figure 10 MUSES-C (provided by JAXA)

Annex

Workshop for Space, Aeronautical and Navigational Electronics (WSANE'2005)

Conference room at Korea Aerospace
Research Institute (KARI),
Daejun, Korea, March 3-4, 2005

Objective and Topics

The first international Workshop for Space, Aeronautical and Navigational Electronics (WSAN'2004) will provide an opportunity for system engineers and researchers to discuss new and viable technical topics of electronics system in spacecraft, aircraft, ships and ground facilities.

Topics covered will include but are not limited to the followings:

- (1) Satellite and space station system
- (2) Communication and navigation system
- (3) Radar, remote sensing technology
- (4) On orbit demonstrations

Organized by

Technical Group on Space, Aeronautical and Navigational Electronics (SANE), IEICE, Japan
(TBD), Korea

Sponsored by

Japan Aerospace Exploration Agency(JAXA)
National Institute of Information and Communications Technology
(NiCT)

In cooperation with

IEEE AES Society Japan Chapter
IEEE GRSS Japan Chapter
AIAA Japan

Instructions for Authors:

Prospective authors are cordially requested to submit, abstract with the title of the paper, the author's name(s), affiliation, and contact information of mailing address, telephone/ facsimile numbers and e-mail address, to the secretaries of Space, Aeronautical and Navigational Electronics Technical Group of IEICE via IEICE's Web site.

Committees

Organizing Co-chairs:

K. Maeda

(Japan Aerospace Exploration Agency)

Eunsup Sim

(Korea Aerospace Research Institute)

Vice Co-chair:

Y. Suzuki,

(National Institute of Information and
Communications Technology)

TBD

(korea)

Organizing Committee Members:

Yang Hong (TBD)

(CAST, China)

J.Kingwell(TBD)

(CISRO, Australia)

Y. Arimoto

(National Institute of Information and
Communications Technology)

T. Miwa

(The University of Electro-Communications)

N. Takata

(Japan Aerospace Exploration Agency)

S. Ozeki

(Electronic Navigation Research Institute)

Y. Yamaguchi

(Niigata University)

A. Okamura

(Mitsubishi Electric Corporation)

OthersOthers

A. Yasuda

(Tokyo University of Marine Science and
Technology)

others

For further information, please visit
<http://www.ieice.org/cs/sane/eng/>

Beyond Broadband

Report on XIXth World Telecommunications Congress Incorporating the International Switching Symposium (WTC/ISS2004)

Tetsuya Oh-ishi and Kohei Shiimoto International Scientific Committee
NTT Network Service Systems Laboratories, NTT Corporation

Introduction

This article will report on the successful holding of the XIXth World Telecommunications Congress incorporating the International Switching Symposium (WTC/ISS2004) at Seoul, Korea on Sept. 12 - 15 2004, thanks to technical sponsorship by the IEICE Communications Society.

Concept and Brief History of WTC/ISS

This congress was started in 1957 as an international conference focusing on switching technologies, and this year the 19th one was held. From 2000, it has been named the “World Telecommunications Congress”, and expanded into a conference dealing with the communication field broadly. The feature of this conference is that many people, from companies’ executives to young researchers, gather to discuss the current situation and future directions of switching and network technologies.

Outline

- Conference title: XIX World Telecommunication Congress Incorporating the International Switching Symposium (WTC/ISS2004)
- Organizer: KT (International steering committee is organized by representatives from France, Korea, Canada, Germany, Italy, Japan, the U.K. and the U.S.A.)
- Technical co-sponsors: KICS (Korean Institute of Communication Science), IEEE, IEEE COMSOC, IEICE Communications Society, and China Institute of Communications
- Date: Sept. 12 to Sept. 15, 2004
- Venue: COEX Convention Center, Seoul, Korea
- Participants: about 400 people
- Major participating countries: Korea, Japan, China, Taiwan, the U.S.A., the U.K., and Germany
- Program and the number of sessions: Opening (1), Technical (22), Poster (1), Panel discussion (7), and Tutorial (5)
- The number of contributed papers: [submitted] 182 [accepted] 101 including 24 from Japan and 13 for the poster session
- Technical visit: Samsung, KT, SK Telecom, and LG
- URL: <http://www.wtc2004.com>
COEX Convention Center



Session report

In this conference, a wide range of the current technology trends was covered, for example, optical, QoS, security, ubiquitous, and mobile. It seems the next paradigm shift was sought. In particular, East Asia is one of the most successful regions in the development and deployment of broadband services. In Korea, the ADSL market is gradually becoming saturated at 70% of household penetration. Therefore, great attention is being paid toward technology trends beyond broadband. Furthermore, the trends of investments into networks and competition versus cooperation, corresponding to a traffic increase due to the growth of broadband, received a lot of attention.

The details are described below.

(1) Opening session

This session consisted of an audience participation questionnaire and three keynote speeches.

In the questionnaire, participants answered some questions about recent topics of telecommunications using portable devices. Many participants seemed to have interests in NGN, Wireless, and Triple Play service.

In the first keynote speech, Dr. Yong-Kyung Lee, President and CEO of KT, introduced various efforts toward achieving ubiquitous services such as those “beyond broadband service” in Korea. Next, Dr. Yuji Inoue, Vice President & Executive Director of Dept. III of NTT, talked about NTT’s R&D strategy. Lastly, Dr. Pradeep Sindhu, Vice Chairman and CTO of Juniper Networks, described “Infranet initiative” (<http://www.infranet.org>).

Opening session by Dr. Yuji Inoue (NTT)



(2) Executive panel sessions

Some company executives and professors gathered into panels for given topics (listed below), and made their presentations and had discussions. As a result, active discussion involving the audience occurred. In the session about “Lessons from Broadband-Leading Asian Market Opportunities,” organized by Dr. Shiimoto, delegates from four leading countries of broadband (Japan, Korea, China and Hong Kong) introduced and discussed the future direction beyond broadband.

Executive Panel Session titles

- Ubiquitous Networks Including Wireless (Hot spots, 3G, and 4G)
- Telecom Frontier
- Lessons from Broadband-Leading Asian Market Opportunities
- New Business Aspects of Emerging Telecom Services
- Internet Security, Privacy, and Reliability
- Hot Applications – Games and Content
- Standards for Next Generation Network

(3) Technical sessions

Accepted papers were categorized into 22 sessions listed below, and oral presentations were given. In addition, there was a poster session for presenting papers that were suitable for deep discussion.

Technical Session titles

- Performance Analysis
- Optical Technologies
- IP QoS & Admission Control
- GMPLS
- Traffic Engineering & Network Planning
- Security and Privacy
- Service Portability & Usability
- QoS
- IP over Optical Networks
- Broadband Access
- Home Networks and Future Technologies
- Provisioning and Traffic Measurement
- Economics of New Services
- IP Mobility
- Accounting and SLA
- Mobility in Multimode Environments
- Next Generation Business Services

- Personal and Ad Hoc Networks
- Service Enabling Platform
- Applications
- RFID and Sensor Network
- IP Multimedia Subsystem

Invitation of join IEICE membership

During the conference, the Communication Society of the IEICE (IEICE-CS) booth was set up to promote its activity and overseas membership campaign. Many researchers had an interest in the activity of IEICE. As a result, 27 new members joined the IEICE-CS. The campaign activity was volunteered by Mr. Tetsuya Ohishi and Dr. Eiji Oki (NTT Network Service Systems Labs), the IEICE members participating in the WTC/ISS 2004 conference.



IEICE booth

Information

The next WTC/ISS conference will be merged with ISSLS (International Symposium on Services and Local Access). It will be held from Apr. 30 to May 3, 2006 in Budapest, Hungary.



Flag handover to Budapest, Hungary



IEICE Overseas Membership Page

The Institute of Electronics, Information and Communication Engineers

Membership for Overseas Candidates: **You can join one of the IEICE Societies and subscribe to IEICE Transaction (in English) of the registered Society as IEICE Overseas Regular Member, Overseas Student member, or Overseas Affiliate Member without voting right at the Institute's election. Still more, you can receive Journal and Japanese Transactions by paying an additional charge. OMDP (Overseas Membership development program) is provided for candidates from countries/areas in Asia, 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.**

◆Please be noticed that Overseas Membership applies only to candidates who reside outside of Japan and who have non-Japanese citizenship.

IEICE Societies and Publications:

Societies	Transactions	Topical areas covered
A. Engineering Sciences	EA:Trans. on Electronics	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:Trans. on Commun.	Fundamental Theories, Communication Devices / Circuits, Transmission Systems and Transmission Equipment, Optical Fiber, Fiber-Optic Transmission, Wireless Communication Technology, Terrestrial Radio Communications, Satellite and Space Communications, Optical Wireless Communications, Switching, Wireless Communication Switching, Network, Network Management / Operation, Software Platform, Internet, Antenna and Propagation, Electromagnetic Compatibility (EMC), Sensing, Navigation, Guidance and Control Systems, Energy in Electronics Communications, Terminals, Multimedia Systems, Broadcast Systems, Integrated Systems, Media Compound Method
C. Electronics	EC:Trans. on electron.	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:Trans. on Inf. & Syst.	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

Membership Charges (UNIT: YEN):

Membership grades	Entrance Charge	Annual Membership Fee	Additional Society Registration	Additional Transaction Subscription	Journal Subscription
Service coverage for overseas members		Included one Society and its Transaction	Registration of one more Society and its Transaction	Subscription to an additional Transaction of registered Society	(Written in Japanese only)
Regular Member (overseas)	1,400	7,000	3,500(/1 Trans.)	3,000(/1 Trans.)	6,000
Regular Member (overseas) with OMDP*	1,000	5,000	3,000(/1 Trans.)	2,500(/1 Trans.)	5,000
Regular Member (in Japan)	2,600	13,000	3,500(/1 Trans.)	3,000(/1 Trans.)	-
Student Member (overseas)	0	2,000	2,000(/1 Trans.)	1,500(/1 Trans.)	6,000
Student Member (overseas) with OMDP*	0	1,000	1,500(/1 Trans.)	1,000(/1 Trans.)	5,000
Student Member (in Japan)	0	4,500	2,000(/1 Trans.)	1,500(/1 Trans.)	-

*OMDP is to support members from countries/areas of Asia, Africa, Central America, & South America.

*Affiliate Member is a person who is not a specialist of fields which IEICE subject to and who have an interest to our fields. And when you want to join IEICE as an Affiliate Member, you need recommendation of the society which you want to belong to.

Notice

1. Annual Membership Fee includes one Society and one Transaction which you choose.

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, 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", and **Additional Transaction subscription (optional)** as "EB". Your membership fee amounts to 7,000+3,500 yen / 5,000+3,000 yen.

3. If you want to subscribe to more than one Transaction in the same society which you register, please check “Additional Transaction subscription”.

Example : If you want to subscribe to Transaction of EA and A, please check **Society Registration** as “A”, and **Additional Transaction subscription (optional)** as “A”. Your membership fee amounts to 7,000+3,000 yen / 5,000+2,500 yen.

4. If you want to change membership from “Regular Member” to “Overseas Member”, you don’t need to pay an Entrance Charge.

Optional Rapid Mailing Service: Surface mail charge is included in the Annual Membership Fee. 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 following table.

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

Further information:

Please contact **IEICE Membership Activities Section;**
Kikai-Shinko-Kaikan Bldg., 5-8, Shibakoen 3 chome,
Minato-ku, Tokyo 105-0011 JAPAN
 Fax +81 3 3433 6659
 E-mail: member@ieice.org
 URL: <http://www.ieice.org/>

IEICE Overseas Membership Application Form

The Institute of Electronics, Information and Communication Engineers

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

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

Personal Information

Full name:

First name _____ Middle name _____ Last name _____ Nationality: _____

☐ Male

☐ Female

☐ Prof. ☐ Dr. ☐ Mr. ☐ Ms.

Place of birth: _____

Date of birth: _____
Day _____ Month _____ Year _____

Mailing Address

☐ Home ☐ Office

Name of Company/School/College _____ Department/Section _____

Street _____ City _____ State/Province _____

Postal code _____ Country _____

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

I want to enter the IEICE from ☐ April ☐ October year: _____

Membership: I want to apply for the following membership (check one item!)

☐ Member (Overseas) ☐ Student Member (Overseas)

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Endorsement

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

I recommend this applicant for IEICE membership.

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ate

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

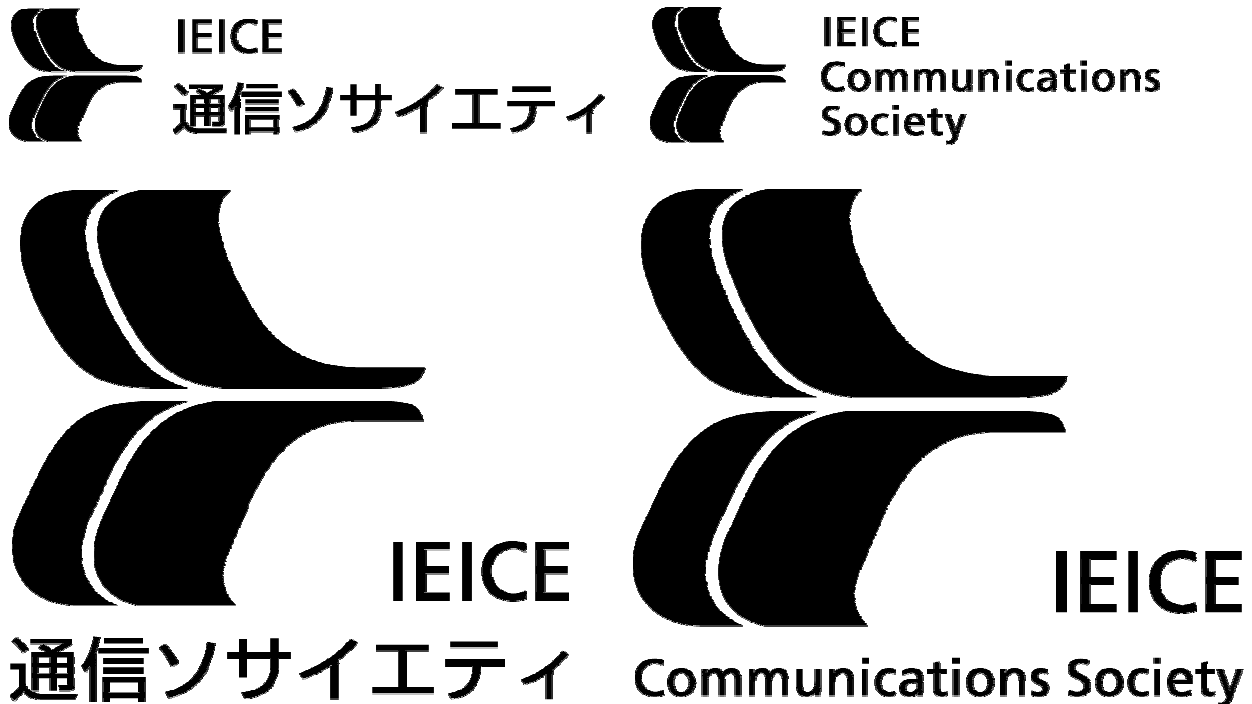
Send this form to:

The Membership Activities Section, IEICE Headquarters Office,
Kikai-Shinko-Kaikan Bldg., 5-8, Shibakoen 3 chome, Minato-ku, Tokyo 105-0011 JAPAN

From Editor's Room

● IEICE Communications Society now launches new logo item!

IEICE Communications Society has discussed new logo item design of IEICE Communications Society. Now new logo item is launched. Here, I introduce some basic design samples by using this new logo.



Editors of GNL now plan to design a new GNL cover page. Please look forward to the new GNL cover page with expectation!

IEICE Global News Letter Editorial Staff

Editorial Staffs of this issue

No special order is observed.



Shinji UEBAYASHI

NTT DoCoMo

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Director, Newsletter Publications, IEICE Communications Society



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Tokyo Institute of Technology

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Director, Newsletter Publications, IEICE Communications Society

Call for Papers

Special Section on Next Generation Photonic Network Technologies

The IEICE (Institute of Electronics, Information and Communication Engineers) Transactions on Communications announces a forthcoming special section on "Next Generation Photonic Network Technologies" to be published in **October 2005**. The purpose of this special section is to present the recent advances and to promote research and development on photonic network technologies. The special section solicits paper submission from all people engaged in this field.

◆ SCOPE

Contributions are solicited in photonic networking research and applied areas. These include, but are not limited to, the following feature topics:

- *Optical packet/burst switching, WAN/MAN, Broadband optical access, Datalink layer technologies, Multi-layer switching, Adaptation technologies, Interoperability technologies, Testbeds, Deployments*
- *Network architecture, Operation, Administration and management, GMPLS, Protocols, Multi-domain technologies, QoS/Gos(Cos), Resiliency (Protection and restoration), Traffic engineering, Facility planning, Pricing, Optical VPN, New service concept, Broadband application*
- *Optical add-drop multiplexers, Optical crossconnects, Optical switches, MEMS, AWG, Wavelength conversion Tunable lasers, Optical buffers, Optical signal processing, Radio on fiber, etc.*

◆ SUBMISSION INSTRUCTIONS

Submitted papers will be reviewed by referees in accordance with the regular rules of the Transactions Editorial Committee. The length of a paper should not exceed eight printed pages in principle. The style guidelines are available at <http://www.ieice.org/eng/shiori/mokuji.html>. 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 http://review.ieice.org/regist_e.wbt. The acceptable format of the file is PDF file. Other any files, e-mail submission, and postal mail are NOT acceptable. Authors should choose the [Special-EB] Next Generation Photonic Network Technologies as a "Type of issue (section) / Category of Transactions" on the online screen. Do not choose [Regular-EB] Communications 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 "Special Section on Next Generation Photonic Network Technologies" on the envelope.

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◆ PAPER SUBMISSION DEADLINE

Papers must be received by **January 30, 2005**

◆ SPECIAL SECTION EDITORIAL COMMITTEE

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** Please note that if accepted for publication, all authors are requested to pay for the page charges covering partial cost of publications. Authors will receive 100 copies of the reprint.*