

## ***IEICE Communications Society* GLOBAL NEWSLETTER Vol. 4**

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# Will the history repeat again?

Tadanobu OKADA



A vice-president, Communication Society

## 1 Continuous growth of internet

Internet is still growing steadily, penetrating our daily life.

Statistics says subscribers of broadband access (DSL, CATV and FTTH) in Japan amount to 7.8 million at the end of last year. More than 50 million, roughly half of the Japan people, have access to internet through their portable phones.

Younger generation of course enjoys internet services. The same happens with elder generation, surprisingly. People aged more than forty send and receive 21 e-mails a day where between twenty and twenty-four, 28 e-mails, says a report (Aug. 2002 by InfoCom. Research, Inc.)

Korea and Singapore among other countries are ahead of Japan in many aspects.

It seems for sure that internet will continue growing as far as the existing applications are concerned. But how about enhanced services such as broadband ones and secure ones?

## 2 Key for more growth

Much of the efforts are having been paid by many people to find so called “killer applications” or “killer contents”, which do not bring enough success so far. It seems necessary not only to find killer applications or killer contents, but to introduce some “sound environment” which allows users to make safe use of such internet services.

In Japan HIKARI Service Architecture Consortium (HSAC), a study group of more than eighty members of Japanese leading corporations, had studied service and network architecture, fully utilizing broadband capability of fiber-optics and optical switching. In its final report (<http://www.hikari-sac.org/e/index-e.html>, in English), a diagram is shown in page 205 which identifies potential business players who all together support contents delivery services over internet. They are contents providers, contents aggregators, network service providers, access service providers, right handling service providers, and so on. To establish a sound environment for those business players to safely do their business is surely one of the most important key for internet growth.

Killer application or killer service will change according time. However, new killer application or killer service will be brought in successively by new business players as far as such sound environment is established.

## 3 Looking at session

Sound environment mentioned above consists of

numerous functions as quality-of-service (QoS) control, user authentication, charging, etc. These functions are widely discussed because they will play important roles. In this article I would like rather to look at session structure on which those functions could be implemented gracefully.

Latest trend on internet architecture indicates a separation of control from packet transferring. In this architecture a call agent or a SIP proxy, in cooperation with other control servers or application servers necessary, sets up a session end-to-end by talking with end user systems in SIP protocol. Recent technology development tells us that more sophisticated QoS control, more flexible charging, etc., could become possible by making full use of session structure.

Similar advanced control is also possible by using application layer functions, for example. In this case, however, control scheme will depend upon each application, hence will vary according to the change of applications. Session, on the other hand, does not lie in application layer. It can be enhanced independently of each application’s life time.

## 4 Will the history repeat?

Reading the considerations above, some readers may remember the ISDN architecture.

In an ISDN we have a control plane (C-plane) and an user plane (U-plane). On the C-plane we establish a call, using standardized signaling functions called DSS1 (Digital Subscriber Signaling system 1) and SS7 (Signaling System no.7). Based upon the call, a variety of sophisticated service and network controls can be performed

Will the same history repeat in the case of internet of the future? There are many researchers and engineers who are skeptical of that scenario. I agree with them: a simple repeat will not happen considering the remarkable technology developments attained in the field of distributed control, and so on.

On the other hand, it seems appropriate to me to reflect the essence, at least, of the control technology developed for ISDN and B-ISDN to control scheme for internet of the future.

Putting aside the correctness or incorrectness of my personal supposition, everyone will admit the importance of the creative discussions held among researchers, engineers and users having various backgrounds.

I would like to add that our Communication Society is one of the most suitable arena in the world where such kind of creative discussions should take place. Isn’t it?

# Technical Committee on Network Systems

Takashi Hanazawa\*, NTT, Iwao Sasase \*\*, Keio University,  
Masanobu Yoshimi \*\*\*, NTT, Takuya Asaka \*\*\*, Kyoto University

\*Chair, \*\*Vice Chair, \*\*\*Secretaries



*Takashi Hanazawa,  
Chair*

## 1 Introduction

The Technical Committee on Network Systems was “re-launched” in 2001 when its predecessor, the Technical Committee on Switching Systems Engineering, was renamed. Regardless of the name changes, the organization boasts a rich tradition, dating back to its establishment in 1964 under the title the Technical Group on Switching Engineering.

As that name implies, the principal research focus of the original Technical Committee was on switching systems. Even though, from an industry point of view, those systems have become obsolete in this Internet age, we believe that many of their key functions - such as switching, routing, service control and charging - are universally required in every kind of network. The Technical Committee on Network Systems studies what forms networks will take in the future drawing on the technical expertise it possesses in these areas. We are certain that this committee continues to flourish because well-established researchers apply their experience in switching architecture, hardware, software, and protocols to meet the challenge of addressing new technical issues, thereby stimulating and educating upcoming researchers.

## 2 Scope

The technical fields addressed by this group are shown below. Although some of the key words for technical fields may appear to overlap with those used by other technical committees, our basic approach is to look at networks from the lower-layer point of view.

- Switching/routing system architecture
- Switching/routing system hardware technology
- Mobile communication switching
- Satellite communication switching
- Network architecture
- Access networking relating to the node system
- Communication protocols and signaling systems
- Communication software technology
- Software support technology
- Intelligence in networks
- Network operation
- Network middleware
- Information delivery
- Communication traffic theory, design, control and measurement
- Distributed control technology

- Communication system packaging technology
- Network appliance technology

## 3 Principal Activities

### 3.1. Technical meetings

As a rule, the Technical Committee holds 10 two-day technical meetings each fiscal year. Several of these are co-sponsored: July, by RCS (Radio Communication Systems); September, by CS (Communication Systems) and IN (Information Networks); November, by TM (Telecommunication Management) and CQ (Communication Quality); December, by PS (Photonics in Switching); February, by OCS (Optical Communication Systems); and March, by IN (Information Networks). In addition, the April technical meeting is co-sponsored by the ITC (International Teletraffic Congress) Japan Committee chaired by Professor Konosuke Kawashima of Tokyo University of Agriculture and Technology. We select venues in various parts of Japan in order to encourage exchanges with researchers working in the area where the meeting is held, and to make location an attractive aspect of the technical meeting’s activities. There has been strong participation, with about 190 papers being presented annually.

Recently-presented papers center on technologies that support multicast, content delivery networks, and voice communication. Naturally, most are related to IP-based networks, but there are also papers on future networks, such as ubiquitous networking and active networks. At each technical meeting, we host lectures by invited speakers who are experts in their respective fields. During this fiscal year, we have had guest lectures on P2P, CDN, VoIP and other topics.

In keeping with the IEICE’s general policy of promoting computerization, our Technical Committee became the first to accept submission of papers to technical meetings in electronic form. Unfortunately, it is still not practicable to use electronic form in the final step of handing papers over to the publishers, so we rely on the assistant to the committee secretary to carry out the necessary conversion. However, from the standpoint of those contributing papers, we have an all-electronic documentation process in place.

### 3.2. The 19th NS/IN workshop

In March, the Technical Committee on Network Systems (NS) conducts a workshop, which is co-sponsored by the Technical Committee on Information Networks (IN). This workshop, run conjointly with a technical meeting, features an evening session where it

is hoped that the mainly younger researchers will be stimulated by lively discussions.

This year’s workshop was held on March 5 and 6, with guest lectures followed by a panel discussion on the keynote theme of “Ubiquitous Business. It isn’t just a dream!” A total of more than 150 participants mingled at the Okinawa Convention Center/Laguna Garden Hotel venues. See below for the invited lecturers and panelists. These days, the word “ubiquitous” frequently crops up as a way of encapsulating the concept of a super-convenient, ideal world in which people can access a network from anywhere and under any circumstances, and can input or extract the information they require in the form most appropriate to a given situation. A wide variety of research projects and product and system developments are underway to make this concept a reality. This workshop provided an opportunity for exchanges on the latest technologies in this area, and for in-depth discussions on what makes ubiquitous services viable in business terms, and what efforts are needed to make it happen.

- “Directions of information communication policy: Efforts and issues for building ubiquitous networks,” Junichi Shimada (Communications Research Laboratory)
- “Towards realizing ubiquitous networks,” Hiroyuki Morikawa (The University of Tokyo)
- “Network technology for supporting ubiquitous services,” Kou Miyake (NTT)
- “Future direction of mobile communication,” Ken-ichi Yamazaki (NTT DoCoMo)
- “Information home appliances and network,” Hiroyuki Imai (Matsushita Electric Industrial, Ltd.)
- “μ-chip: the world’s smallest Internet detection IC chip,” Mitsuo Usami (Hitachi, Ltd.)
- “About sensor networks,” Shiro Ogata (Omron Corp.).

**3.3 Special Issues**

Last fiscal year, the Technical Committee began planning a feature issue for the IEICE Transactions on Communications B regarding technology for Content Delivery Networks (CDN), which will be one of the key applications in the era of broadband services. The call for papers was issued during this fiscal year. The Program Committee, comprising 14 members, was chaired by Professor Tatsuro Takahashi of Kyoto University. A total of 23 papers have been submitted. The feature edition will be published in June 2003.

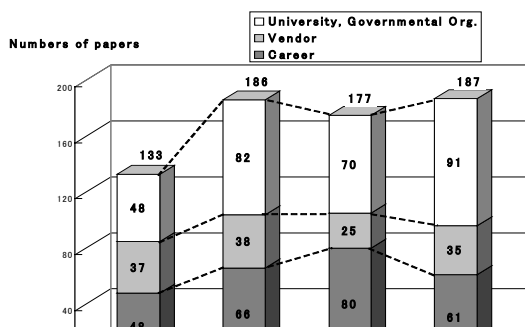
In addition, the Technical Committee organized two special events at the IEICE General Conference and the IEICE Society Conference: an Open Symposium on “Ubiquitous Network Architecture in the Age of IP Broadband Services,” and an English-language session on “P2P Network Architecture/Services.”

**4. Future Plans**

We recognize that the Technical Committee is at a stage where it is desirable to redouble our efforts to stimulate activity, and to raise the overall standard of papers presented. We are thinking of, for example,

giving encouragement to young researchers who have presented their papers, by inviting them to deliver what have been done after the previous presentation. We may call it “encouragement lectures.” In addition, we will follow the IEICE Communications Society’s guidelines for promoting globalization of technical committees. In order to ensure the production of a large number of high quality papers in our technical field, we will continue to organize English-language feature issues for the IEICE Transactions.

(For more information, please see our home page. URL: <http://www.ieice.org/cs/ns/>)



**Fig.1: Changes in the number of papers presented in technical meetings**



**Fig.2: Scene from the 19th NS/IN workshop**



**Fig.3: Research awards recipients**



# A Report of the Panel Discussion on “Home-networking, Sensor, and Network Appliance”

Hiroshi Tomonaga

Secretary of Technical Committee on Communication Systems,  
Fujitsu Laboratories LTD.



## 1 Introduction

The technical committee on Communication Systems (CS) produced the panel discussion on “Home-networking, Sensor, and Network Appliance” in the 2003 IEICE General Conference at Tohoku University in Sendai. The panel discussion was held on March 20<sup>th</sup>.

Recently, various devices including the sensor, terminals, and network appliances are connecting each other for indoor or outdoor through the network. Under such a situation, the communication between various objects is currently increasing as well as the communication between people, or between people and objects. In this panel, the latest trend was discussed about home networking, which has the possibility to change future life of the consumer.

## 2 Program overview

The following 4 panelists presented their theme and after that discussed on the theme with the attendees.

- Chair person: Dr. Ryutaro Kawamura (NTT)
- 1. Progressing and Issues on Network Appliance  
Mr. Susumu Kitaguchi (SHARP Corp.)
- 2. Sensing Technology for Ubiquitous network society  
Mr. Takuya Fujimoto (OMRON Corp.)

- 3. Network Middleware for Ubiquitous Information environment  
Dr. Hiroyuki Morikawa (Univ. of Tokyo)
- 4. The technical trend of home-networking using information appliance  
Dr. Fumihiko Itoh (NTT)

Fig. 1 shows the position of their theme in the home network.

## 3 Remarks

The panel was a great success with 80 or more attendees. Following questions were discussed.

- Home network configuration and required function for interconnection
- The synergy effect by connecting home network and the internet.
- In general consumer's standpoint, What profit

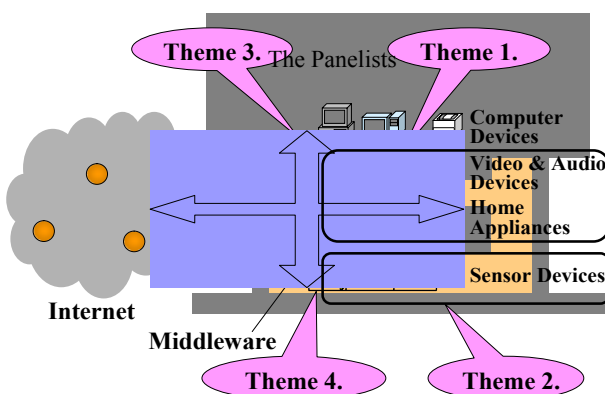


Fig. 1 Home network and panelists' theme



Fig. 2 The Panelists



Fig. 3 The panel discussion

# The 2003 IEICE General Conference, 19-22 March, Tohoku University,

reported by  
Masato Tanaka

CS Secretary, Technical Activities and Planning; CRL



The 2003 IEICE General Conference is composed of conferences of Engineering Science Society, Communications Society, Electronics Society and Information and System Society. The 2003 IEICE General Conference has successfully completed. The opening day of the conference has the presentation “A Monumental Blunder” by Kouichi Tanaka, Nobel Prize winner. More than three thousand technical presentations were given at Tohoku University in Sendai city locating in the northeastern part of the main island of Japan. Further detail concerned with CS Society is described below. As for the presentation by Nobel Prize winner and the second Young Engineer Award for English sessions, the description is made in another report by Shinichi Nomoto.

## 1. Conference Statistics concern with CS Society

The number of sessions and presentations are summarized as follows.

- Special sessions: 2
- Panel sessions: 4
- Tutorial sessions: 2
- Technical sessions (normal): 19
- Technical sessions (symposium): 14
- Aural presentations (normal): 1551
- Aural presentations (symposium): 75

The symposium include four English sessions: “Positioning, Remote Sensing and Navigation–Methodologies and Systems–”, “Advanced Radio Link Control Techniques for Broadband Wireless Access”, “P2P Network Architecture/Service”, and “Networking Technologies for Mobile Internet System”. The number of aural presentations in English sessions is 17.

## 2. Special Sessions

(1) Plan, Management, Evaluation Method, Subject and View of Joint Research Project by Industrial, Administrative and Academic Sectors

This special session was performed on the 3rd day of the conference. Although a keyword called “cooperation among industry-university-government” was generally known widely and various measures have been taken, but it is fact that there are many problems. Invisible subjects such as the evaluation method, financing method, treatment of the intellectual property rights, personnel problem, research period setup etc. exist.

About these we have a keynote speech "a university reform and cooperation among industry-university-government" from

Dr. Anzai, the president of Keio University. Then the discussions from all the approaches were made by the representatives of university sector, government sector, and private company sector, based on the concrete example.



Fig. 1 Dr. Anzai, the president of Keio University, presenting a keynote speech.



Fig. 2 Four panelists at the Special Session of Joint Research Project by Industrial, Administrative and Academic Sectors: Mr. Oki, Vice President of Japan Science and Technology Corporation, Mr. Tomita, Vice President of NTT communication, Mr. Kuwahara, Vice President of Hitachi, and Mr. Mochida, Executive Director of Fujitsu Laboratories (from left to right).



Fig. 3 The chairperson of the special session of Joint Research Project by Industrial, Administrative and Academic Sectors: Prof. Tominaga, Waseda University.

## (2) Present Condition and View of Mobile Multimedia Communication

-From broadband to application-

This special session was performed on the 2nd day of the conference. The spread of the mobile communications represented by the cellular phone is remarkable, and offer of the 3rd generation mobile communications service is progressing.

In this session the discussion about the direction to which future mobile communications tend to go and about the technical view of research and development in a future mobile communications system and a satellite communication system, was made using keyword of broadband and application, while analyzing the present condition of the present mobile communications.



Fig. 4 Panel discussion of the special session of Present Condition and View of Mobile Multimedia Communication: Prof. Adachi, the chairperson, Tohoku University, Associate Prof. Sanpei, Osaka University, Dr. Atokawa, NEC Networks, Dr. Yasui, NTT docomo, Prof. Aizawa, Tokyo University, Dr. Yamazaki, NTT docomo (from right to left). The present writer is also a panelist.

## Acknowledgement

The success of the conference owed to a large number of contributors including officers and staff of Tohoku University, the steering Committee of Technical Groups, and IEICE secretaries.



## Mr. Koichi Tanaka, 2002 Nobel Prize Winner, lectures at The IEICE General Conference

Shinichi Nomoto

CS Secretary, Technical Activities and Planning; KDDI R&D Labs.



Mr. Koichi Tanaka, one of the most famous engineers in Japan, after named winner of The 2002 Nobel Prize, gave a special lecture to IEICE members at 2003 IEICE General Conference, Tohoku University, Sendai, Japan, on 19 March, 2003. The special lecture was co-sponsored by IEICE and IEEJ (Institute of Electrical Engineers of Japan and also supported by the Tohoku Branch of IEIJ (the Illuminating Engineering Institute of Japan) and the Tohoku Branch of ITEJ (the Institute of Image Information and Television Engineers).

The reason why the special occasion was realized is that Mr. Tanaka received his BE degree in Electrical Engineering from Tohoku University in 1983. Mr. Tanaka's bachelor's thesis had something to do with electronics and communications; his paper was published in the *Transaction of the IECE (now IEICE) of Japan*. The title of the paper was "Scattering of a Plane Wave by an Impedance-Loaded Dipole Array Buried in a Lossy Medium."

From 1983 to date, he has been with Simadzu

development of mass spectrometers for identification and structure analysis of biological macromolecules such as proteins.

More than 2,000 audiences (including standing people at the Tohoku University's largest auditorium) have enjoyed the special lecture entitled "A Monumental Blunder." Although the lecture was academic with a lot of technical viewgraphs on his achievement in chemistry, his soft speech enchanted the audiences. Actually, as a research engineer, he most emphasized the importance of the mind of challenges and steady efforts in collaboration with colleagues.

After the forty-minute lecture, he has awarded an Honorary Member of IEICE by President M. Hatori. (In 2002, he awarded an Honorary Doctorate by Tohoku University.)

For more information on "The 2002 Nobel Prize in Chemistry," refer to

<http://www.nobel.se/chemistry/laureates/2002/>

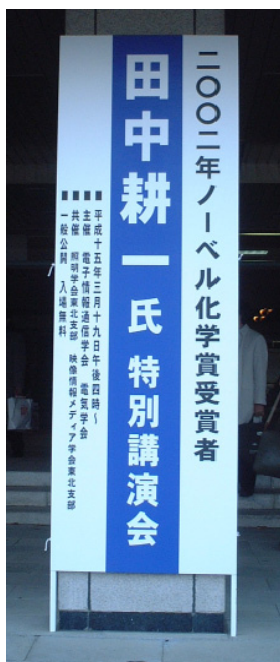


Figure 1. Mr. Koichi TANAKA, one of the winners of The 2002 Nobel Prize in Chemistry, gives us a special lecture entitled "A Monumental Blunder," 19 March, 2003. He is now a Honorary Member of IEICE. (Authorized photography)

Corporation, Kyoto, Japan, where he has worked on the



## Forty distinguished young engineers from CS received The IEICE Young Engineers Award

Shinichi Nomoto

CS Secretary, Technical Activities and Planning; KDDI R&D Labs.



*The IEICE Young Engineers Awards of the 2002 Academic Year have been given to seventy-two engineers in total, out of whom forty engineers were recommended by The 2002 CS Young Engineers Award Committee (Chair: Prof. Y. Sakai, Tokyo Institute of Technology). The awards are annually given to young engineers (below 32) who make an excellent presentation at The IEICE General Conference (in March) and/or The Communications Society Conference (in September). The list of This Year's recipients follows together with photos from the ceremony at the 2003 IEICE General Conference's banquet on March 20, 2003.*

*Many congratulations to all!*

- Tomoko ADACHI, Toshiba
- Takeshi AMISHIMA, Mitsubishi Electric
- Satoru ARAKAWA, TAO
- Manabu ISOMURA, KDDI R&D Labs.
- Yoshihiro ICHIKAWA, Ibaraki Univ.
- Masugi INOUE, CRL
- Masaki Umayabashi, NEC
- Yasunori OWADA, Niigata Univ.
- Atsushi KITADA, Fujitsu Labs.
- Katsuya KUSABA, Mitsubishi Electric
- Toshiyasu KURASUGI, NEC
- Kazumi SATO, Toshiba

- Fumiyo SATO, YRP Key Tech. Res. Labs.
- Masahiro SAWADA, NTT DoCoMo
- Takashi SHONO, NTT
- Hiroto SUGAHARA, NEC
- Junichiro SUZUKI, Toshiba
- Yoshinori SUZUKI, NTT
- Chisa TAKANO, NTT-AT
- Shinichi TAKEUCHI, Fujitsu Labs.
- Nobuyasu TAKEMURA, Mitsubishi Electric
- Keiji TANAKA, KDDI R&D Labs.
- Masafumi TSUTSUI, Fujitsu Labs.
- Susumu NAKAZAWA, NHK
- Takuyo NAKAJI, Nagoya Institute of Technology
- Shinobu NANBA, KDDI R&D Labs.
- Sumaru NIIDA, KDDI R&D Labs.
- Michiaki HAYASHI, KDDI R&D Labs.
- Kenichi HIGUCHI, NTT DoCoMo
- Youichi HIDAKA, NEC
- Akifumi HIRATA, ATR
- Masaru FUKABORI, NTT
- Katsumi FUJII, Tohoku Univ.
- Satoru HORI, NTT
- Naoki HONMA, NTT
- Masataka MASUDA, NTT
- Naoki MATSUOKA, Fujitsu Labs.
- Nobuhiko MIKI, NTT Docomo
- Masateru MINAMI, Tokyo Univ.
- Noriyuki YAGI, Waseda Univ.



Figure 1. Photos at the IEICE Young Engineers Award ceremony.

# Call for Participation ANTA 2003

## (The 2nd International Workshop on Active Network Technologies and Applications)

Naoki Wakamiya  
ANTA 2003 TPC Chair, Osaka University

### 1 Introduction

Active network technologies have been paid much attention to as a new network architecture that accelerates introduction of new services without spending time on standardization. Network programmability enables fast and dynamic service deployment at desired time and location. Applications that will benefit from active network technologies include multicast, mobile computing, ad-hoc networking, content distribution, web caching, information filtering, AAA (authentication, authorization, and accounting), and network management.

We had a successful workshop ANTA2002 in Tokyo and we decided to continue the workshop to foster active network R&D in Japan by bringing together researchers and engineers who have gained experience in different aspects of active and programmable networks. We also welcome those who are not familiar with active networks, in order to activate research, development, and deployment more than current situations.

At ANTA2003, aiming at involving more researchers, engineers, and developers, we invited papers from all research groups that are, may be, or will be, related to active network technologies. We welcomed not only papers that included quantitative evaluations or proof of concept, but also those that had any brilliant, interesting, or novel ideas leading the future potential evolution of active network technologies.

The workshop is mainly organized by Special Technical Group on Active Network Technologies and Applications, The IEICE Communications Society and is supported by CRL, ETH Zurich, and Osaka University.

Organizing committee members are,

General Chair: Hiroshi Yasuda (University of Tokyo)

Vice Chairs: Bernhard Plattner (ETH Zurich)

Fumito Kubota (CRL)

TPC Chair: Naoki Wakamiya (Osaka University)

Secretaries: Hideki Otsuki (CRL)

Yoshiaki Kiriha (NEC)

### 2 Scope

Papers will cover such topics as;

- \*Architectures and new concepts for active and programmable networks and systems,
- \*Applications and services for active and programmable networks and systems,
- \*Hardware and software platforms for next generation networks,
- \*Grid and Next Generation Computing support networks,
- \*Active security and mobility support capability in next generation networks,
- \*Dynamic service creation, deployment, and Management,
- \*New techniques in Ubiquitous and P2P networking,
- \*Contents and service aware networking for next generation networked applications,
- \*Dynamic SLA management, QoS Control, and Monitoring,
- \*Network processor platforms for active networks,
- \*Implementation, Deployment, Standardization, and Case Studies.

### 3 Schedule

This year's ANTA will be held at **Convention Center of Osaka University** from **28th to 30th May**. The first day will consist of tutorials, one is introductory for those new to active network technologies and the others are for specialists. We organize technical sessions (oral and poster) on the other two days. Among papers from Europe, USA, Asia, and Japan, we accepted 18 papers as oral presentations and 5 papers as poster presentations. A simultaneous translation will be provided.

### 4 Further Information

Any further information including a detailed program, registrations, and accommodations is available at <http://www.ieice.org/~an/ANTA2003/>

### 5 Conclusion

We are waiting for those new to active network as well as experienced researchers and engineers.



## 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
<b>A. Engineering Sciences</b>	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>B. Communications</b>	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
<b>C. Electronics</b>	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
<b>D. Information and Systems</b>	ED:Trans. on Inf. & Syst.	Theory/Models of Computation, Theory of Automata, Formal Language Theory, Algorithms, Computational Complexity Theory, Computer System Element, VLSI Systems, Computer Systems, Theory and Models of Software, Software Systems, Software Engineering, Databases, Network, Fault Tolerance, Applications of Information Security Techniques, Cooperation in Distributed Systems and Agents, Artificial Intelligence, Cognitive Science, Man-Machine Systems, Multimedia Processing, Educational Technology, Welfare Engineering, Pattern Recognition, Speech and Hearing, Image Processing, Image Pattern Recognition, Computer Graphics, Multimedia Pattern Processing, Natural Language Processing, Biocybernetics, Neurocomputing, Medical Engineering

Membership Charges (UNIT: YEN):

Membership grades	Entrance Charge	Annual Membership Fee	Additional Society Registration	Additional Transaction Subscription	Journal Subscription
<b>Service coverage for overseas members</b>	_____	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)
<b>Regular Member (overseas)</b>	1,400	7,000	3,500( /1 Trans.)	3,000( /1 Trans.)	6,000
<b>Regular Member (overseas) with OMDP*</b>	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.)	-
<b>Student Member (overseas)</b>	0	2,000	2,000( /1 Trans.)	1,500( /1 Trans.)	6,000
<b>Student Member (overseas) with OMDP*</b>	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.)	-
<b>Affiliate Member* (overseas)</b>	800	4,000	3,000( /1 Trans.)	2,500( /1 Trans.)	6,000
<b>Affiliate Member* (overseas) with OMDP*</b>	400	2,000	2,500( /1 Trans.)	2,000( /1 Trans.)	5,000
Associate Member* (in Japan)	1,800	9,000	3,000( /1 Trans.)	2,500( /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 <sup>st</sup>	Asia; Guam; Midway islands	5,600 yen	3,200 yen
2 <sup>nd</sup>	Oceania; Near & Middle East; North & Central America; Europe	7,800 yen	4,400 yen
3 <sup>rd</sup>	Africa; South America	11,000 yen	5,600 yen

**Further information:** Please contact **IEICE Membership Activities Section;**  
**IEICE Headquarters Office, 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](mailto: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](mailto:member@ieice.org)

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

### Personal Information

Male  
 Female  
**Full name:** \_\_\_\_\_ **Nationality:** \_\_\_\_\_  
First name Middle name Last name  
 Prof.  Dr.  Mr.  Mrs.  Ms.  Miss **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!)

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

**Society registration (It includes one Transaction in English):**

- A: Engineering Sciences  B: Communications  C: Electronics  D: Information & Systems

Additional Society registration (optional):  A: Engineering Sciences  B: Communications  C: Electronics  D: Information & Systems  
Additional Transaction subscription (optional):  EA: Fundamentals  EB: Communications  EC: Electronics  ED: Information & Systems  
 A (Japanese)  B (Japanese)  C (Japanese)  DI (Japanese)  DII (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 Transaction (optional)..... \  SAL mail..... \ \_\_\_\_\_  
Total remittance..... \ \_\_\_\_\_

Credit Card:  MasterCard  VISA  American Express Card number: \_\_\_\_\_ Expiry date(Y/M)\_\_\_\_/

Credit Card Holder: \_\_\_\_\_ Signature: \_\_\_\_\_

### 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.

Endorser's name	Membership number	Endorser's signature	Date
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

### ● Now I want to say thank-you.

Cherry blossoms!

April is the beginning season in Japan. On the campus of Tokyo Institute of Technology, which is my workplace, an entrance ceremony has been carried out yesterday. Full-blown cherry blossoms welcome newcomers.



Currently, this IEICE Global News Letter is issued seasonally and it is numbered to four. Here I express my thanks to each reader at first. Next, Thanks to Dr. Naoaki Yamanaka and Dr. Toshio Morioka. They give me a good chance to issue these Global News Letters, and furthermore, they give me much suggestion and help.

IEICE Global News Letter will see the first anniversary on the next issue. And perhaps this editors' room also will welcome new staffs on it. Please look forward to the next issue!

IEICE Global News Letter Editorial Staff

### ● IEICE Global News Letter Editorial Staff

Editorial Staffs of this issue  
No special order is observed.

**Tokumi Yokohira**  
Okayama University

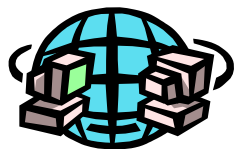
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Fujitsu Laboratory

**Hideki Otsuki**  
Communications Research Laboratory

**Katsunori Yamaoka**  
Tokyo Institute of Technology  
*Director, Newsletter Publications, IEICE Communications Society*

# Call for Papers

## Special Issue on **Internet Technology Series IV**



The IEICE (Institute of Electronics, Information and Communication Engineering "Transaction on Communications announces a forth coming special issue on "Internet Technology IV" to be published in March 2004.

The purpose of this special issue is to exchange recent information and to promote research and development on internet technology for further improvement of current internet information and for development of future advanced IP technology especially focusing on IPV6 technology. The special issue solicits paper submission from all people engaged in this field.

**The topics of interest within the scope of this special issue include, but are not limited to be the following areas:**

[Category 1] Internet technologies and architectures

- Internet architecture
- Routing
- Protocol
- Traffic Control issue
- Mobile IP
- System
- Experiments and applications
- Security CDN (Contents Distribution Network)

[Category 2] IP v.6 system and technologies

**The deadline** of the paper submission is **June 24, 2003**. Manuscripts should be prepared according to the style guidelines indicated in the Information for Authors attached to the IEICE Transactions. The style guidelines are also available at <http://www.ieice.org/eng/shiori/mokuji.html>. The length of a paper should not exceed eight printed pages in principle.

**Online paper submission** and registration is highly recommended (pdf file only).-> [http://review.ieice.org/regist\\_e.wbt](http://review.ieice.org/regist_e.wbt)

However, attached file of e-mail is also available (Microsoft word, PS). -> [internet@lab.ntt.co.jp](mailto:internet@lab.ntt.co.jp)

When you send your manuscript, please include following information in your e-mail.

- the contact author's name, postal address, telephone number and e-mail address
- the manuscript's title, abstract and key words

**Please note** that special issue limits the number of papers, so some of the submission papers are deal with regular section.

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NTT Network Innovation Labs.

3-9-11 Midori-cho Musashino-shi, Tokyo, 180-8585 Japan

Tel: +81-422-59-2047 Fax: +81-422-59-6387 E-mail: [internet@lab.ntt.co.jp](mailto:internet@lab.ntt.co.jp)

### Guest editors :

Guest Editor-in-Chief: Hiroshi ESAKI (The University of Tokyo)

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Motonori NAKAMURA (Kyoto University)

\* Please note that if accepted for publication, all authors, including authors of invited papers, should pay for the page charges covering partial cost of publication. Authors will receive 100 copies of the reprint.

# Call for Papers

## Special Issue on Mobile Multimedia Communications

The IEICE (Institute of Electronics, Information and Communication Engineers) Transactions on Communications announces a forthcoming special issue on Mobile Multimedia Communications to be published in **May 2004**.

Recently, intensive efforts are underway to promote practical use of mobile multimedia communications technologies; Progress has been achieved in the international standardization activities such as IEEE 802.11 and 15, IMT-2000, IrDA, MPEG-4, etc. Various research and developments are widely in progress in the field of application and terminal technologies such as mobile contents, broadcasting for mobile terminals, PDA terminals, wireless information appliance, etc., and of networking technologies such as mobile IP, quality of service, mobile agent, etc.

The purpose of this special issue is to present the recent advance of technologies for mobile multimedia communication services including mobile applications, terminals, network, broadcasting, etc., and to promote future progress of research, development, and new applications of mobile multimedia communications.

### 1. Scope

Suggested topics include but are not limited to the following:

- **Mobile multimedia applications and terminals**

Mobile computing, mobile contents, architecture for multimedia mobile terminals, mobile IP, personal multimedia applications, audiovisual compressions for mobile applications, security

- **Mobile multimedia systems and implementations**

System architecture for mobile multimedia, quality of service for mobile multimedia communications, agent systems, multimedia satellite, implementation techniques of advanced wireless systems for mobile multimedia, data integration for mobile communications, multimedia location service

- **Network for Mobile Multimedia**

Broadband wireless network, Ad-hoc Network, adaptive wireless access method, distributed networking, multimedia data integrated service network for mobile communications

### 2. Submission Instructions

Submitted papers will be reviewed by referees in accordance with the regular rules of the Transactions Editorial Committee. The standard number of pages is 8 for a paper and 2 for a letter. Refer to "Information for Authors" at the following web site for more details; <http://www.ieice.or.jp/eng/shiori/mokuji.html>. Prospective authors are requested to submit an electric version of an original manuscript in PDF or Postscript format to the address below. The authors are also requested to attach a text file that contains the title, authors, and abstract of the paper, and the name, postal address, telephone number, fax number and email address of the corresponding author to the email. This information is also available at <http://infonet.aist-nara.ac.jp/member/mokada/momuc.html>.

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### 3. Paper Submission Deadline

Papers must be received by **August 26, 2003**

(Mind that the deadline has been shortened from the previous call for papers announcement.)

### 4. Special Issue Editorial Committee

Editor-in-Chief    Masami Yabusaki (NTT DoCoMo)

Secretaries        Yoshimitsu Aoki (Shibaura Institute of Technology), Minoru Okada (NAIST),

Guest Editors     Satoru Aikawa (NTT), Kiyoharu Aizawa (Univ of Tokyo), Yoshihiko Akaiwa (Kyushu Univ), Kiyoshi Hamaguchi (CRL), Takeshi Hattori (Sophia Univ), Keiichi Hibi (Sharp), Susumu Ishihara (Shizuoka Univ), Hirohisa Jozawa (NTT), Eiji Kamioka (National Institute of Informatics), Hiroyuki Kasai (NTT DoCoMo), Hideaki Kimata (NTT), Aki Kobayashi (Tokyo Institute of Technology), Akihisa Kodate (Waseda Univ), Shozo Komaki (Osaka Univ), Masakatsu Kourogi (National Institute of Advanced Industrial Science and Technology), Mitsuji Matsumoto (Waseda Univ), Masateru Minami (Shibaura Institute of Technology), Hisashi Miyamori (CRL), Takashi Miyazaki (NEC), Hiroyuki Morikawa (Univ of Tokyo), Hideshi Murai (Ericsson Japan), Akira Nakagawa (Fujitsu Labs), Tomoyuki Ohya (NTT DoCoMo), Osvaldo A. Gonzalez (Motorola Japan), Shiro Sakata (NEC), Masakazu Sengoku (Niigata Univ), Shinsuke Tanaka (ATR), Koji Ukena (Matsushita Electric Industrial), Toshihiko Wakahara (Fukuoka Institute of Technology), Akira Yamaguchi (KDDI Lab), Miki Yamamoto (Osaka Univ), Katsunori Yamaoka (Tokyo Institute of Technology), Susumu Yoshida (Kyoto Univ), Noriaki Yoshikawa (Cyber Creative Institute)

*\*Please note that if accepted for publication, all authors, including authors of invited papers, should pay for the page charges covering partial cost of publication. Authors will receive 100 copies of the reprint.*