

# ***IEICE Communications Society* GLOBAL NEWSLETTER Vol. 28**

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Call for Paper

# Need of Your Comments to Improve Activities of IEICE-CS

Kunio Sawaya  
President, Communication Society



## 1. Introduction

It is my great honor to serve as the President of the IEICE Communications Society (IEICE-CS) this year until May, 2010. Among the four societies and one group of IEICE, i.e., Engineering Sciences Society, Communications Society, Electronics Society, Information and Systems Society and Human Communication Group, IEICE-CS is still the largest with more than 12,000 members including about 1,600 overseas. IEICE-CS is also very active to improve the quality of service to society members.

In this article, current activities provided by IEICE and IEICE-CS are introduced.

## 2. Activities of IEICE and CS

IEICE-CS covers wide range of research fields related to communications systems, and has 19 regular technical committees as well as 10 fixed-term technical committees. Each committee forms professional community and supports the activities of IEICE-CS through planning of many events such as keynote lectures, symposium and panel discussions held at IEICE General and Society Conferences. Some committees form plans of international symposia on their research fields and technical meetings jointly held with overseas institutions outside Japan.

Technical committees hold their meetings monthly or several times a year in various different academic and research institutions in Japan, where the latest research developments performed by universities, research institutes and companies are presented and hot discussions are made. Proceedings of each meeting are published as “IEICE Technical Report” which is very helpful for obtaining information on the recent progress in each research field. IEICE-CS recognizes the importance of Technical Report and plans to establish website to download Technical Report for its subscribers as a new service provided by IEICE-CS.

IEICE General Conference organized by all societies in March and IEICE Society Conference organized by societies excluding Information and System Society in September are also important activities of IEICE. The total number of man-day participants of IEICE General and Society four-day Conferences are around 13,000 and 5,500, respectively. IEICE-CS will establish the web page called “CS Archives” soon, which provides the proceedings of these conferences for the participants of each conference. Proceedings published

more than two years ago will be available for all CS members.

In the last IEICE Society Conference, IEICE-CS held the first “Welcome Party” for new members of CS, which is the new service for providing greater interaction and extended exchange of information between young and regular CS members.

## 3. Activities of IEICE-CS

First activity of IEICE-CS is the publication of Global News Letter written in English, which was introduced in August, 2002 as the service for overseas CS members as well as domestic members and is published four times a year. This Global News Letter is the 28<sup>th</sup> issue.

The publication of CS Magazine is another service launched in August, 2007, which provides interesting articles such as research history written by senior researchers, report of international conferences and review papers of the latest communications technologies. Unfortunately, CS Magazine is written in Japanese and translation into English is desired for overseas members.

New activities of CS are the Welcome Party held at Society Conference, creation of new websites for proceedings of technical meetings and domestic conferences as described above. In addition to these websites, the “IEICE Explorer”, which provides proceedings of several recent international conferences organized by IEICE, was started by the headquarter of IEICE in last September. These services will provide more information for domestic and overseas CS members.

## 4. Closing words

Many efforts have been made by the members of the Steering Committee of IEICE-CS to improve the services for CS members based on the self-support accounting and independent system started three years ago. However, we know that there are remaining issues to activate IEICE-CS such as more tight collaborations with overseas institutions especially in Asia and Pacific regions in the society level as well as the technical committee level. We believe that the activities of IEICE should be supported by members and technical committees in a bottom-up manner rather than a top-down manner. Comments and suggestions by the members of IEICE-CS are welcome and highly appreciated to set forward future actions of IEICE-CS.

## Special report: Panel discussions in 2009 IEICE General Conference

Hitoshi Ohnishi (National Institute of Multimedia Education)  
Shoichiro Seno (Mitsubishi Electric Corporation)  
Hiroaki Morino (Shibaura Institute of Technology)  
Tomoyuki Ohya (NTT DoCoMo, Inc.)  
Seiichi Sampei (Osaka University)  
Masugi Inoue (NICT)

### Foreword from GNL Editors

Eight panel discussions sponsored or cosponsored by Communications Society in 2009 IEICE General Conference held at Ehime University in Matsuyama-shi, Japan in this March. This is a special report of five panel discussions among them.

Hot topics related to advanced communication technologies were extensively discussed by the experts together with the participants to explore not only the future of communications technologies but also the deployment of new systems and services.

The editors hope the GNL readers to enjoy this special report and to learn what were discussed in the panels in 2009 IEICE General Conference.

### 1. BHP-1: Communication in Virtual Worlds

#### 1.1. Introduction

A panel discussion entitled “Communication in Virtual Worlds” was organized by the technical committees on Communication Quality (CQ) and on Multimedia and Virtual Environments (MVE). New styles of communication are emerging, mediated by Internet services such as blogs, social networking services (SNS), metaverse-like virtual spaces (e.g. Second Life), and video sharing sites. The quality of virtual world services is affected by characteristics unique to virtual worlds as well as by quality of service/experience (QoS/QoE) factors common to traditional information communication services. This session was held to discuss what factors are important and how they affect users’ behavior and satisfaction in virtual worlds and how we can capture users’ unmet demands to improve the quality of virtual world services.

#### 1.2. Invited Talks

The four invited panelists presented their studies on communication in virtual worlds.

**BHP-1-1: Personal Agent-Oriented Virtual Society**  
**Kouichi Matsuda** (Sony Corporation)

Dr. Matsuda introduced the personal agent-oriented virtual society called Personal Agent World, or “PAW<sup>2</sup>”. PAW<sup>2</sup>, which was a “Second Life”-like

virtual world, was developed in 1998. In PAW<sup>2</sup>, each user had a virtual pet agent as well as his or her avatar. An agent autonomously interacted with other agents and other users’ avatars as well as with its owner so that it mediated communication with other users and motivated its owner to revisit PAW<sup>2</sup>. Long term observation of PAW<sup>2</sup> revealed characteristics of usage patterns. Novice users tended to visit PAW<sup>2</sup> to communicate with their own agents while experienced users tended to visit PAW<sup>2</sup> to communicate with other users and to participate in events held by the host. The results suggested that an agent drove its owner user to visit PAW<sup>2</sup> frequently and familiarized him or her with PAW<sup>2</sup> so that he or she participated in events and communicated with other users.

**BHP-1-2: Design of Multi-Scale Multi-Media**  
**Yasuto Nakanishi** (Keio University)

Prof. Nakanishi introduced a framework for design of information and communication systems called multi-scale multi-media and various communication systems based on the multi-scale multimedia framework. The essential concept of the multi-scale multi-media framework is coordination between real space and information space. A communication system may be used in different ways depending on the place where the system is used. Therefore, a communication system would be more effective if it were designed with consideration of the spatial structure of the place where it is used. A real world space could also be more effective if it were designed with consideration of the structure of its information space.

**BHP-1-3: Construction of Community by the Synchronization of Comments with Video Content**  
**Shozo Azuma** (NTT Corporation)

Mr. Azuma introduced an alternative to the bulletin board system (BBS) for commenting on videos posted by other users on video-sharing web sites. Users who read the posted comments want the comments to be synchronized with the video and they want the comments to be informative while the users who post the comments want to be able to comment with low

loads. In the proposed system, a posted video is automatically split into scenes and a comment thread is assigned to each scene so that users can skip detailed descriptions of scenes, and they can concentrate on posting elaborate comments. Therefore, the users can read informative comments that are synchronized with their corresponding video scenes. The proposed system led users to post more informative comments than the conventional BBS-style system and promoted exchange of opinions among the users.

BHP-1-4: Consumer Ideas for Innovation and Information Diffusion

**Yuichi Washida** (Hakuhodo Corporation)

Dr. Washida talked about innovation, including value transformation, driven by users. For example, a mobile phone is now a mobile information terminal that functions not only as a phone but also as an e-mail device, a music player, a game device, and so on. This innovation does not seem to be what the providers had planned; rather, these developments have been driven by the users. Experiments were conducted to examine the process by which innovation is driven by users. The results showed that new ideas for innovations emerged during the information diffusion process in a consumer network and that the major players in innovation emergence were in the second cluster that adopts a new technology when the penetration rate reaches about 10%, not the innovators (the earliest adopters).

### 1.3. Panel Discussion

The invited panelists and the participants discussed what factors make a virtual world active and what innovations could be brought to the services in a virtual world. One of the most significant topics was that mechanisms are needed that would drive inactive users to participate in the virtual world's community to make it more active. Anecdotal evidence was reported of unexpected or irregular usage of services by users became triggers that activated communities in virtual worlds. The panelists emphasized that it is important to strike a balance between the flexibility and safety of services in virtual worlds.

### 1.4. Conclusion

Through the discussion, we recognized that virtual worlds have various research subjects to be studied. We look forward to further opportunities to deepen the discussion on communication in virtual worlds.

## 2. BP-4: Next/New Generation Photonic Access Networks

### 2.1. Introduction

Rapid introduction of FTTH (Fiber To The Home) networks around the world as well as recent standardization efforts for higher bandwidth FTTH have been fueling R&D of high-speed photonic access network technologies in these days. In response to such a trend, the Technical Committee on Photonic Network

(PN) organized a panel session entitled "Next/New Generation Photonic Access Networks," which was held on March 17, 2009, during the IEICE General Conference in Matsuyama, Ehime Prefecture, Japan.

### 2.2. Panel Talks

The panel session was intended as a discussion forum on what would be an ideal future network, what applications would be provided over it, and what technical issues might arise for their realization. It featured the following four talks by distinguished speakers.

(1) Key Device Technologies for Next Generation Optical Access Systems, **Junichi Nakagawa**, Mitsubishi Electric Corporation

This talk reported latest developments of optical device technologies for 10G-EPON where key issues were optical budget equivalent to GEPON, wavelength assignment allowing combined use of GEPON and 10G-EPON, and 10G b/s burst synchronization.

(2) Application of Optical Access Network, **Hideaki Tanaka**, KDDI R&D Laboratories.

This talk focused on applications of optical access networks, such as RoF (Radio over Fiber), distribution of digital broadcast signal, and virtualized resource management encompassing access, metro and core networks.

(3) Overview and Status of Standardization Activities for Next Generation Optical Access Network, **Hiroki Ikeda**, Hitachi Ltd. Central Research Laboratory

This talk reported standardization activities of high-speed optical access networks by FSAN/ITU-T and IEEE, with an emphasis on 10G-EPON specification being developed by IEEE 802.3av task force.

(4) The Target of Optical Access in New Generation Network, **Hiroaki Harai** and **Takaya Miyazawa**, NICT

This talk showed on-going researches on New Generation optical access networks, including "WDM-Direct" which would enable on-demand assignment of multiple wavelengths to an individual ONU to accommodate varying traffic.

### 2.3. Panel Discussion

A panel discussion by the above speakers followed, where a lot of insightful thoughts are exchanged.

- Will bandwidth growth of access networks continue or not? One opinion said this trend would hold while another observed that 1 Gb/s bandwidth would be sufficient for an individual user viewing 8k digital cinema.
- It was argued that users would enjoy rich broadcast contents such as video streaming of sports or real-time view of downtown streets, once high-speed optical access would become available.
- On-demand bandwidth service by "WDM-Direct" in access networks would make architectural changes in core networks necessary.

## 2.4. Conclusion

The panel session on “Next/New Generation Photonic Access Networks” attracted more than 40 attendees who enjoyed the talks and discussion on various aspects of emerging optical access network technologies.

## 2.5. References for section 2

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- [2-3] Hiroki Ikeda, “Overview and Status of Standardization Activities for Next Generation Optical Access Network,” IEICE General Conf., BP-4-3, Mar. 2009. (in Japanese)
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## 3. BP-5: Service Integration of Mobile Multimedia Communications and Broadcasting

### 3.1. Introduction

During the IEICE General Conference held in Ehime University, the technical committee on mobile multimedia communications (MoMuC) organized a panel discussion entitled “BP-5: Service integration of mobile multimedia communications and broadcasting” on 20<sup>th</sup> March, 2009

Integration of communications and broadcasting has been attracting attentions especially since the start of One Seg broadcasting. Recently it is expected to go forward to service deployment triggered by the emergence of non-simultaneous broadcasting in digital TV. This panel session was planned to explore future visions of service integration that is attractive both for business players and customers.

### 3.2. Panelists

The following panelists were invited, who have expertise in engineering and business aspects of mobile multimedia communication and broadcasting.

**Mr. Masayuki Ishikawa**, MMBI,

“Overview of Multimedia Broadcasting service (ISDB-T)”

**Mr. Michihiro Uehara**, NHK,

“Outline of Proposed Mobile Multimedia Broadcasting Service”

**Mr. Shingo Izawa** KDDI R&D Labs,

“Multimedia Broadcasting for Mobile Terminals (MediaFLO technology)”

**Prof. Hisashi Miyamori**, Kyoto Sangyo University,

“Expected New Services for Fusion of Communication and Broadcast by Multimedia Broadcasting”

**Mr. Nozomu Yoshida**, Nozomu.net,

“Reality in services integration of mobile multimedia communication and broadcasting”

### 3.3. Discussion

At the beginning of the session, each panelist presented future visions on mobile multimedia service integration from his own standpoint. Adding to the technical trends in mobile multimedia broadcasting such as ISDB-Tmm and MediaFLO, possible new attracting services realized by service integration are presented. One example of them is overlay displaying of Web information related to on going TV programs, such as profiles of main actors and actresses.

Proceeding to discussion time, “killer services” of



Fig. 3-1: Panel discussion

service integration was mainly discussed to give advantages service integration over One Seg broadcasting. Here are brief summary of discussions.

- Basically, broadcasting service is appropriate for contents with large popularity, or for providing public or lifeline information such as emergency notification for free. In contrast, downloading service should be complementary used for more personalized services. One example of them will be “catch up service” where digest of past programs are prepared for users that missed them in daily or weekly broadcasting programs.
- In downloading service, if large number of short video clips with duration of about five minutes can be prepared that include news, sports, entertainments, popularity of users can be obtained. It can have impacts like iPod did in music downloading.

Further, about 40 audiences joined the session and they had significant discussions with panelists.

Finally, the session closed with the conclusion that service integration of mobile multimedia is still ongoing and has many issues to be investigated through discussions and experiments.

## 4. BP-6: Heterogeneous Wireless Distributed Networks

### 4.1. Introduction

This panel was organized to discuss key challenges and potential technologies for heterogeneous wireless distributed networks (WDN). It was held in March 18, 2009. The main target of the heterogeneous WDN is to provide more spectrally efficient, more flexible and more reliable seamless networks for user centric ubiquitous services. In this panel session, five panelists were invited. After their presentations, participant including panelists had discussion on the topics for about 2 hours. Although the discussion time was limited, we had very fruitful discussions. Even after the session was completed, some participants were still arguing eagerly.

### 4.2. Presentations by the panelists

(1) **Prof. Kei Sakaguchi** of Tokyo Institute of technology explained the basic concept of heterogeneous WDN. First of all, he defined the WDN as the integration of different types of wireless systems and explained the concept using analogy between WDN and the traffic road networks: Wireless link is equivalent to the road where width becomes thin with distance. The road is, basically, two-way which corresponds to the bi-directional link, different types roads are connected which corresponds to heterogeneous networks, roads are connected by a junction which corresponds to a part of routing functionality, and some roads have multiple lanes which correspond to MIMO based spatial multiplexing. He also explained necessity of these functionalities to construct the heterogeneous WDN.

(2) **Prof. Masaaki Katayama** of Nagoya University discussed on reliability of wireless networks from the view points of its applicability to cordlessizing of industrial machine systems. He explained that the metric for reliability and robustness changes with the engineer's backgrounds: For example, when introducing a radio system into industrial apparatus, a radio engineer's metric might not always satisfy the industrial apparatus engineers. Based on these considerations, he claimed necessity of user customized evaluation metrics also in the future heterogeneous WDN.

(3) **Prof. Shinsuke Ibi** of Osaka University talked about dynamic spectrum control (DSC) and spectrum shaping techniques for flexible and efficient radio resource management. He claimed that, when broadband wireless channel is assumed, (bandwidth per user)/(total bandwidth) is relatively low, and a certain amount of interference is tolerable, selfish manner of spectrum selection in the DSC can still enjoy effectiveness of the decentralized radio resource management.

(4) **Mr. Kazunori Takeuchi** of KDDI Laboratories explained the architecture of heterogeneous wireless networks. Especially, he explained how to configure

network controller and MAC layer for the heterogeneous WDN. He also pointed out some strategies to configure scalable heterogeneous WDN.

(5) **Ms. Yukiko Yano** talked about handover techniques in heterogeneous wireless networks. One of the issues she pointed out was, metric for required performance is different system by system, which is sometimes confusing issues for engineers. Moreover, selection of triggers that initiates inter-system handover, as well as inter-carrier (operator) handover are pointed out to be another important issue.

### 4.3. Panel discussion

After presentations by the panelists, we had discussions on whole the subjects related to the heterogeneous WDN. First of all, meaning of the heterogeneous WDN was re-confirmed by the panelists. Of course there was no concrete definition. However, a common understanding was, heterogeneous would be the key for future wireless networking, and "distributed" would have various meaning, such as distributed radio resource, distributed wireless access, and distributed control. Next, in which layers in OSI reference model, the WDN should be focused on was discussed. Summary was, although each layer has tasks in the WDN, lower layers, especially PHY and MAC should be more focused because management of the radio resource, especially the electro-magnetic field is deeply related to these layers. Centralized control vs. decentralized control in the heterogeneous WDN was also discussed. Its summary was as follows. Of course, if all the conditions were possible to be monitored and manageable, the performance should be optimal, theoretically. However, it is impossible actually. So, more important issue is how to reach such a theoretically limit using decentralized based control. Because decentralized control is not as mature as the centralized control, there could be some interesting and innovative technologies in the future. This should be one of the most important technical fields for the heterogeneous WDN.

### 4.4. Conclusions

The purpose of this meeting was to investigate the technical subject to the field which we already recognize to be an important subject, as well as to diversify the application fields of the heterogeneous WDN. Thanks to about 100 participants including members of the other technical study groups which the WDN is related to, we had fruitful discussions in this panel, though our discussion time was restricted to about 30 minutes.

## 5. BP-7: Ubiquitous Sensor Network Platform towards a Future Social Infrastructure

### 5.1. Introduction

This article reports a summary of a panel on ubiquitous sensor network platform.

The author, as the organizer of the panel, thinks that new generation network [5-1] will perform functions as ubiquitous sensor network and that it must work as a platform.

Sensor networks make use of various types of sensors and actuators, obtain various types of information from the sensors, use the information for various purposes and have various types of users. The conventional mainstream type of them have been specially designed and constructed for a specific purpose. They include sensor networks for air quality monitoring in cities, bridge condition monitoring, and vehicle traffic monitoring. On the other hand, future ubiquitous sensor network will be a network that can provide context-aware, personalized, localized services not for all the people but for residents and communities in a region. The market of each service, however, would be relatively small scale and it may not be profitable. We therefore will require a platform that can provide a variety of such diverse services with the use of various, shared sensors, enabling the infrastructure cost to be kept relatively low.

To march towards the realization of the platform, we held a panel session on “Towards Ubiquitous Sensor Network (USN) Platform” [5-2] in Ehime University, Matsuyama City on March 18, 2009, during the IEICE General Conference. [A summary in Japanese of the panel is available at our site \[5-3\].](#)

The panel was organized and chaired by **Dr. Masugi Inoue** (NICT) and co-organized by **Prof. Hiroaki Morino** (Shibaura Institute of Technology). It was proposed jointly by two technical committees on Ad Hoc Networks (AN) [5-4] and on Ubiquitous and Sensor Networks (USN) [5-5]. The invited panelists were **Prof. Shiro Sakata** (Chiba Univ.), **Dr. Sadao Obana** (ATR), **Dr. Masayoshi Ohashi** (ATR), **Prof. Yuuichi Teranishi** (Osaka Univ.), and **Prof. Yoshito Tobe** (Tokyo Denki Univ.). The number of attendees is around 45 and many persons missed the panel due to space limitation. The discussion mainly focused on the necessity of USN platform, its requirements, social impact, fundamental functions, research issues, roadmap to the vision, implementation approaches, and business model. It also clarified current situation and highlighted the requirements of USN platform development.

### 5.2. Scope of Panel Presentations

The panelists provided prosper, broad, and deep discussions on USN platform, ranging from the low layer network connectivity to the upper layer service provisioning, as depicted in Fig. 5-1. Layers A, B and C form the transport network, and they have different scopes varying from sensor networks, regional networks, and wide-area networks. Layers D and E are

information query and distribution, and service provision, respectively.

Dr. Obana presented a protocol called OSNAP for integrating heterogeneous sensor networks whose main issue was in Layer A. Dr. Inoue provided a regional ubiquitous service platform for sensor information collection and distribution that focused mainly on Layer B. Prof. Sakata showed the connections of sensor networks to the Internet at Layer C. Dr. Ohashi introduced a ubiquitous network architecture developed in the Ubila project and its successor called CUBIQ, which covers Layer D and E. Prof. Teranishi talked about PIAX, a P2P service platform in Layer D. Prof. Tobe presented the project named OSOITE, which is to provide ubiquitous sensing information to users in Layer E.

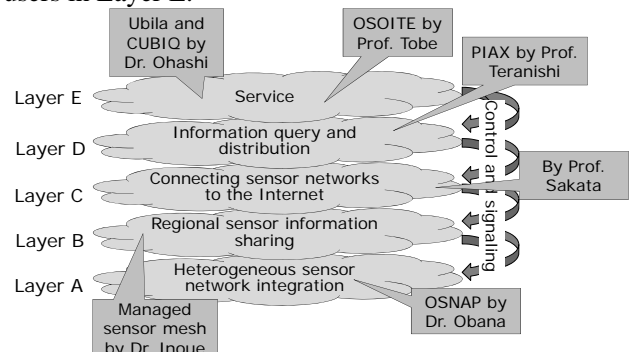


Fig. 5-1: Items covered in the panel discussion

### 5.3. Ubiquitous Sensor Network Platform

As shown in Fig. 5-1, the panelists focused on different topics of USN platform, which are very important for the development of comprehensive USN platform. We will provide an overview of their presentations and discussions in the following.

#### 5.3.1. OSNAP: A Protocol for Integrating Heterogeneous Sensor Networks

Dr. Obana introduced a general protocol called OSNAP for the communication over heterogeneous sensor networks. The gateways with general interface to applications are utilized to connect different sensor networks with wide-area networks. One of the important characteristics is that both small volume of sensing data and large volume of video data can be processed. OSNAP includes the physical sensor layer, sensor access layer, logical sensor network layer, and P2P agent layer.

Dr. Obana also presented the OSNAP verification testbed deployed among the University of Tokyo, Osaka University, and Akihabara. The verification testbed consists of the face authentication sensor system, illumination actuator system, air conditioner actuator system, and humidity and temperature sensor system. To show the generality and connectivity in the testbed, various applications have been implemented simultaneously. The OSNAP is publicly available to all potential users, who wish to participate in testing the system.

### 5.3.2. Regional Ubiquitous Service Platform on Managed Wireless Mesh Network

Dr. Inoue pointed out that in the ubiquitous sensor networking environment, sensor information related to environment such as traffic or weather condition of a certain area will be used frequently by the users residing in the relevant local region. It is better for such information to be transported, accumulated, and processed locally. Dr. Inoue stressed the need of regional ubiquitous service platform that formulate logic community domains above the physical network.

This platform can contain various such services as school information service, neighbors' management, hospital information service, and government service. To realize this concept, the managed wireless mesh network is utilized for collecting and distributing sensor information.

The characteristics of such regional platform include logic groups together with simultaneous communication within different logical domains. When implementing this platform, both terminals and Community Service Gateways (CSGs) are treated as peers. Several applications can be incooperated to provide services to end users.

Introducing regional service platform can reduce cost to create small business by the community itself, so as to act as an important promotion power towards USN platform.

### 5.3.3. The Ubiquitous Network Platform

Prof. Sakata identified the explosive growth of terminals which will be used in 2015, through which the necessity of network platform can be shown. Network related platform evolves from a specific application-supporting to a general purpose platform. The example includes operating systems of cell phones (iPhone, Android, and LIMO), SDP in NGN, and PaaS.

Prof. Sakata listed the requirements of a platform as autonomous context-ware information collection, secure and trustable transportation, and autonomous service discovery. The SENSEI project prompted in FP7 has also been introduced.

As an example of platform, he introduced the history of wireless LAN mesh network development and the status of related researches in Japan. Based on the viewpoint of mesh network, he discussed the different aspects of platform such as security, reliability, and business model.

### 5.3.4. Issues on Ubiquitous Network Architecture – from Ubia to CUBIQ project

Dr. Ohashi firstly introduced the architecture of the ubiquitous network components which have been developed in the Ubia project. Ubia's goal is to provide context aware, user-centric services to users. The proposed architecture includes the context flow component, service control component, and network control component. In this architecture, sensing information has been collected through various methods, and then transported, stored, processed to form a suitable service for users finally.

He then presented the successor of the Ubia project called CUBIQ, which aims to provide general platform,

where all resources have been identified by URI. Using this technology, the seamless access to virtual space and real space can be assured, while cost can be reduced.

### 5.3.5. An Overlay Agent Platform PIAX and Its Applications

Traditionally, the communication services are provided by a client-server model, and recently, the services provided by Google are based on the client-cloud model. In the future, these service provision models will be surpassed in the way of the combination of services of several P2P servers. PIAX is just the platform towards this vision.

While introducing PIAX composition, Prof. Teranishi showed that the most important characteristic of PIAX was the multi-overlay functions. That is, plug-in functions including Skip-Graphs, LL-Net (Location-based Logical P2P Network), and DOLR (Decentralized Object Location and Routing) have been developed at the multi-overlay layer in the composition. Meanwhile, at the overlay transport layer, ID/Locator separation has also been implemented.

PIAX has been used as the overlay platform by the Live E! and CUBIQ projects. The PIAX overlay testbed has also been planned to be deployed on the JGN2 Plus network.

### 5.3.6. OSOITE: Towards Urban Sensing

The OSOITE project presented by Prof. Tobe aims to provide real-world searching services for ubiquitous sensing information in urban areas to users. The proposed OSOITE architecture is composed of two layers, data collection layer and data storing and processing layer. In the data collection layer, local weather information and human behavior information can be detected and collected. The storing and processing layer contains a virtual space called TomuDB, which consists of distributed databases and supports real world information queries. In other words, the characteristics of OSOITE include distributed information storage, real world searching, web API.

### 5.3.7. Panel Discussion

Panel discussion had been held for about 40 minutes. Dr. Inoue (chair) sorted out the discussed topics, which included the influence of USN platform, fundamental function components, research topics, roadmap to USN platform, implementation approach, and business model.

In the panel discussion, both the panelists and participants showed their interests in the various aspects of the social impact of USN platform, such as social security, dependability, reducing disparity between the rich and the poor, supporting aging society, restraining the problem of insufficiency of food, and environmental protection. The current problem of low satisfactory on the push-type sightseeing information distribution system had been posed. It had been clarified that the motivation and interests of users should be considered when designing ubiquitous system. They also warmly talked about the transportation network, and finally concluded that wireless access, GPS, and database should be



integrated to provide services. The topic of financial support on R&D from government or society had also been discussed. It had been showed that both government and public and private organizations should jointly prompt the advancement of this area.

#### 5.4. Conclusions

This panel was very successful. It helped clarify many topics on USN platform. Firstly, it clarified the requirements of USN platform as various application support and sharing, openness, scalability, evolvability, context-aware information gathering, inclusion of terminals and tiny devices, secure and dependable network transportation, logic domain with various purposes, large-volume distributed data storage and processing, autonomous real-time service discovery and acquisition, and user-centric application. Secondly, the social impact of USN platform was widely discussed, which showed the great support for the settlement of social problems. Thirdly, the fundamental functions identified in the panel included heterogeneous network connection, access network platform connecting sensors, large volume attribute searching, sensor information collection, storage, processing, and distribution. The research topics include architecture, cost-efficiency, privacy, authentication and access control. The roadmap to USN platform is still unknown but it will be definitely developed with the evolvement of networking technology, such as Internet, NGN, and NWGN [5-1]. Although there is no killer applications developed for USN platform, small business can be created to greatly influence on the people's daily life.

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- [5-4] Tech. Committee on Ad Hoc Networks (AN), <http://www.ieice.org/~an/eng/>
- [5-5] Tech. Committee on Ubiquitous and Sensor Networks (USN), <http://www.ieice.org/~usn/en/>



Fig. 5-2: Opening speech by Dr. Inoue (Chair)



Fig. 5-3: Panelists: from the left, Dr. Obana, Prof. Sakata, and Dr. Inoue (Chair).



Fig. 5-4: Panelists: from the left, Prof. Tobe, Prof. Teranishi, and Dr. Ohashi.

**Session Chairs/Organizers of the panels**



**BHP-1: Prof. Hitoshi OHNISHI**  
National Institute of  
Multimedia Education



**BP-4: Mr. Shoichiro SENO**  
Mitsubishi Electric Corporation



**BP-5: Prof. Hiroaki MORINO**  
Shibaura Institute of Technology



**BP-5: Mr. Tomoyuki OHYA**  
NTT DoCoMo, Inc.



**BP-6: Prof. Seiichi SAMPEI**  
Graduate School of Engineering,  
Osaka University



**BP-7: Dr. Masugi INOUE**  
National Institute of Information  
and Communications  
Technology

# Annual Letter of the Technical Committee on Communication Systems

Tomohiro Ishihara\*, Fujitsu Labs.; Hiromi Ueda\*\*, Tokyo Univ. of Tech.; Yoshio Kajiyama †, NTT; Yuji Waizumi †, Tohoku Univ.; Hiroshi Ishii ‡, NTT;

\*Chair, \*\*Vice-Chair, † Secretary, ‡ Assistant

Web page: <http://www.ieice.org/cs/cs/>

## 1. Introduction

This article reports the activities of the Technical Committee on Communication Systems (CS). Table 1 and Table 2 show the schedules in this and the coming year, respectively. Our principal work is planning and holding technical conferences and workshops.

## 2. Scope

The technical committee on CS covers the major technologies for communication networks. Our technical interests include optical access networks, broadband services, Ethernet technologies, transport networks, communication theory and etc. We have held many productive discussions in these research areas. We are going to plan discussions regarding new technology fields, such as sensor networks and next-generation networks (NGNs).

## 3. Conference schedule

We hold domestic conferences seven times every year. In the fiscal year 2008, we held seven conferences. We'll also have seven scheduled conferences in the fiscal year 2009, as shown in Table 2.

### Participating in the Conference:

All members of the IEICE (and related institutes, i.e. IEE, ITE, IEIJ and IPSJ) can participate in the conferences with no registration nor extra fee.

The technical committee on CS maintains a relationship with other technical committees, such as Communication Quality (CQ), Optical Communication Systems (OCS), Information Networks (IN), Network Systems (NS), Audio Visual and Multimedia Information Processing (AVM), Image Engineering (IE), Broadcasting Technology (BCT), Circuit and Systems (CAS), and Signal Processing (SIP). The AVM and BCT belong on the IPSJ and the ITE, respectively.

### Submission rules:

To make a presentation, we need your application before the deadline for presentation of each conference. You must register at least two months before each conference date. Submissions will be made via the web page at <http://www.ieice.org/cs/cs/>. A short abstract should be included in an application.

After making your application, PDF files of the paper manuscript of four or six pages in A4 size, reprint order sheet and speaker's introduction sheet should be uploaded. The manuscript deadline will be three weeks before the conference date.

At most of the conferences, social gatherings are planned to share information among the participants. Moreover, poster sessions have been held since 2005. We welcome your submissions to and participation in our technical conferences.

Table 1 Technical conference schedule, 2008-2009

Date	Place	Date	Place
Apr. 24-25, 2008	Hirosaki Univ.	Dec. 11-12	Nagoya Univ.
June 12-13	Chitose Inst. of Sci. and Tech.	Jan. 22-23, 2009	Iriomote Island
Sep. 11-12	Tohoku Univ.	Mar. 2-3	TBD (gifu)
Nov. 5-7	Akan, Hokkaido		

Table 2 Technical conference schedule, 2009-2010

Date	Place	Theme	Joint
Apr. 16-17, 2009	Okinawaseinenkaikan	QoS in Ubiquitous/Broadband Networks, etc.	CQ
July 2-3	Fukue Bunkakaikan	NGNs, power-line communication, etc.	
Sep. 10-11	Tohoku Univ.	Overlay networks, network security, VPN, etc.	IN, NS
Nov.	Hokkaido	Broadband access systems, home networks, etc.	CSWS
Dec.	Nagoya Univ.	Image coding, streaming technologies, etc.	IE, BCT, AVM
Jan. 28-29, 2010	Yamaguchi pref.	WDM technology, OTN, Optical LAN, etc.	OCS
Mar. 1-2	Marine terminal, Miyakojima	Signal processing for networking and communication, etc.	CAS, SIP

#### 4. January Conference

The conference in January 2009 was held on Iriomote Island, slightly bigger than its neighbor Ishigaki Island, the largest island (284 sq km) in the Yaeyama Shotou island group in Okinawa, Japan. There are about 2,000 inhabitants in Iriomote Island. It is well known as the only habitat of the Iriomote Yamaneko (Iriomote wild cat), discovered in 1965 and identified as a new species in 1967. Unfortunately, we couldn't see it, because it is very rare creature, as even inhabitants cannot see it in the life.

The committee decided that at least one conference a year should be held on beautiful Japanese islands in 2006. After that, January conferences were held on Yonaguni Island in 2007, Amami-Oshima Island in 2008 and Iriomote Island in 2009, and we will have Fukue Island in the next time. The place was the meeting room of Iriomote Sanctuary Resort Nirakanai, and more than 30 participants/speakers joined the technical sessions, welcome banquet and special night discussions.

The tutorial lecture entitled "Standardization on Ethernet Ring Protection Switching in ITU-T SG15" was presented by Mr. Masahiro Maruyoshi (NTT). He introduced the activities and the latest information on the ITU-T standardization. He also mentioned the significance of standardization, and feature issues for Ethernet ring protection technologies.

The special invited talk entitled "A Challenge to Network Design Based on a Novel Methodology for Network Analysis" was presented by Prof. Takeshi Ozeki (Sophia University). He introduced a new methodological analysis on web information in the Internet. He showed some analytical results as examples, when he had used the initial knowledge of just only the station names and its shape of the JR Yamanote railway line that loops around central Tokyo. They seemed to give us very interesting discovery and more different meanings rather than the page rank scheme.

Lastly, we should like to say special thanks to Prof. Koichiro Wakasugi (Kyoto Institute of Technology) and Dr. Tetsuo Tsujioka (Osaka City Univ.), who had planned this technical conference in Iriomote for recent two years.



Conference hotel.



Technical session.



Prof. Ozeki as a special invited speaker.



Welcome banquet.

## **5. Other Events**

The technical committee on CS organized some special events, such as symposium, tutorial and panel discussions at the IEICE Society and general conference. For example, at the 2009 IEICE general conference, a tutorial session entitled “Standardization Trends in 10GE-PON” was given.

## **6. Web Site**

We have provided a web site for announcements, paper submission and applications, and registration for technical conference. Please visit our web site at <http://www.ieice.org/cs/cs/>.

General information about the CSWS can find as <http://www.ieice.org/cs/cs/jpn/cs/ws/index-e.html>

## **7. Conclusions**

We have introduced some of the activities of the technical committee on CS. We welcome your requests and comments and promise to continue planning interesting, useful and enjoyable events. We are looking forward to seeing all of you at this year’s technical conference and the 22th CSWS!

# Annual Report of Technical Committee on Information Networks

Daisuke Arai and Manabu Isomura, KDDI R&D Laboratories Inc.

## 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 Corporation. The secretaries are Mr. Manabu Isomura of KDDI R&D Labs. Inc. and Mr. Junya Akiba of NTT Corporation. The assistant secretaries are Mr. Daisuke Arai of KDDI R&D Labs. Inc. and Mr. Takahiro Tamura of NTT Corporation. This document presents the IN's annual report for activities from May 2008 to April 2009.

## 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 3 excellent papers were selected from 231 papers.

Fig.1 Winners of IN Research Award



(from left to right) H. Suzuki (vice chairman), N. Yamai, H. Funakoshi, T. Chiba

- Takumi Seike, Tatsuya Harukuni, Kiyohiko Okayama, Keita Kawano, Motonori Nakamura and Nariyoshi Yamai, "Delivery Path Analysis of E-mail for Spam Mail Filtering."
- Hiroyuki Funakoshi and Tatsuya Matsukawa, "A study on time to repair distribution for telecommunication networks."
- Tsunehiko Chiba, Satoshi Komorita and Hidetoshi Yokota, "Performance Analysis of Mobility Protocols for IMS Network."

Figure 1 shows the winners of this year's award, together with the vice chairman at the ceremony.

## Reference

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

Table 1: Technical meeting schedule

Date	Venue	Main topics	Num. of reports	Num. of participants each day
May 29-30	Kikai-Shinko-Kaikan Bldg. (Minato)	Wireless NW, Ad hoc NW and Sensor NW	8	59, 63
Jun. 19-20	Hokkaido Univ. (Sapporo)	NW control, QoS, Routing and Multicast	17	28, 28
Jul. 17-18	Kobe Univ. (Kobe)	NGN, VoIP, Contents delivery and IPv6	17	28, 39
Sep. 11-12	Tohoku Univ. (Sendai)	Overlay NW, P2P, Grid and NW software	25	115, 69
Oct. 9-10	The Univ. of Tokyo (Meguro)	IP backbone NW, MPLS, GMPLS and Photonic NW	6	34, 21
Nov. 13-14	Kyusyu Institute of Technology (Izuka)	Home NW, Ubiquitous NW, Context-aware and e-commerce	14	46, 38
Dec. 11-12	Hiroshima city Univ. (Hiroshima)	Internet traffic, TCP/IP, Performance analysis/evaluation and NW model	22	33, 41
Jan. 22-23	Nagoya Institute of Technology (Nagoya)	Mobile NW, Multimedia communication and WEB service	14	47, 46
Feb. 5-6	Kagawa Univ. (Takamatsu)	VPN, DDoS and NW/Contents security	10	23, 17
Mar. 3-4	Okinawa Zampamisaki Royal Hotel (Nakagami)	NS/IN technical meeting and workshop	90	196, 187

## Report on the 25th NS/IN Research Workshop

Daisuke Arai<sup>†</sup>, Manabu Isomura<sup>†</sup>, Junya Akiba<sup>††</sup>, Takahiro Tamura<sup>††</sup>,  
 Hikaru Suzuki<sup>††</sup>, Hiroyuki Morikawa<sup>†††</sup>, Ichiro Inoue<sup>††</sup>, Takumi Miyoshi<sup>††††</sup>,  
 Takashi Miyamura<sup>††</sup>, George Kimura<sup>†††††</sup> and Miki Yamamoto<sup>††††††</sup>,  
<sup>†</sup>KDDI R&D Laboratories Inc., <sup>††</sup>NTT Corp., <sup>†††</sup>The Univ. of Tokyo,  
<sup>††††</sup>Shibaura Institute of Technology, <sup>†††††</sup>NTT West Corp. and <sup>††††††</sup>Kansai Univ.

### 1. Introduction

The 25th NS/IN Research Workshop took place in Okinawa, Japan, March 2-3, 2009. The workshop was sponsored by the technical committee on NS (Network Systems) and IN (Information Networks) of the IEICE Communication Society, and aimed to discuss the technical direction and research topics for future networks. A record showing of 156 participants underscored the success of the workshop. The overall theme of the workshop was “The Network Neutrality in the IP era.” The workshop featured invited talks, and overview of the invited talks and the panel discussion.

### 2. Invited talks

The general chair of the workshop, Professor Miki Yamamoto (Kansai Univ.), invited six distinguished experts involved in the network neutrality. These speakers addressed new challenges in issues of the network neutrality in the IP era from political and industrial perspectives. Figure 1 shows photographs of the speakers.

- Dr. Kou Miyake (NTT Corp.) presented an analysis of current trends and technical issues on the network neutrality.
- Mr. Shin Takamura (MIC, Ministry of Internal Affairs and Communications) showed some foreign policies on the network neutrality, and expressed his opinion to ensure sustainable growth of the network.
- Mr. Shinji Kashima (KDDI) showed an opinion that a traffic growth is the prime cause of the issue of the network neutrality for network carriers, and presented the measures taken by KDDI for the traffic growth.
- Mr. Noriyuki Kishikawa (NEC BIGLOBE) presented an analysis of the trend of the Internet traffic from the standpoint of an ISP (Internet Service Provider).
- Dr. Naoya Ikeda (ALAXALA Networks Corp.) addressed the technical issues and challenges of traffic monitoring to realize the network neutrality.
- Mr. Kazuo Fujita (Google) expressed an opinion on the desirable relationship between a CP (Contents Provider) and ISP from the stand point of a CP.



K. Miyake  
(NTT)



S. Takamura  
(MIC)



S. Kashima  
(KDDI)



N. Kishikawa  
(BIGLOBE)



N. Ikeda  
(ALAXALA)



K. Fujita  
(Google)

Fig. 1 Invited speakers.

### 3. Panel discussion

As the chairperson, Professor Yamamoto organized the panel discussion. Professor Yamamoto and the six speakers took their seats as panelists. The audience filled the hall.

Firstly, Professor Yamamoto gave the theme of the discussion to the panelists: “What is the Network Neutrality in the IP era? -Network Neutrality and Openness-.” The panelists then expressed their opinions from their own perspectives, and actively discussed the issues involved. In addition, they answered various questions from audience.

The discussion showed that there increasing interest in the network neutrality.

### 4. Conclusion

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

The technical committee on NS and IN plan to hold next year’s workshop in March 2010. Finally, we would like to express our gratitude to the workshop committee members, and particularly, T. Usui (OKI), T. Nishino (NEC), S. Tanaka (TOSHIBA), T. Sano (Fujitsu) and M. Kashiwabara (HITACHI) who made this workshop possible.

# Call for Participation: 12<sup>th</sup> Asia-Pacific Network Operations and Management Symposium

## 23-25 September, 2009, Jeju, Korea

Kitawaki Jun\*, Uno Hiroshi\*\*

\*Publicity co-chair of the conference, Hitachi

\*\* Vice chair of the conference, NTT

### 1. Overview of APNOMS 2009

The 12th Asia-Pacific Network Operations and Management Symposium (APNOMS 2009[1]) will be held in Jeju Korea from September 23rd to 25th, 2009.

APNOMS 2009 is organized by IEICE ICM Committee and KICS KNOM with support from IEEE CNOM, IEEE APB, TMF, IFIP WG6.6, BUPT, CIC, CCSA TC7. The theme of APNOMS 2009 is "Managements Enabling the Future Internet for Changing Business and New Computing Services." Recently, various convergences in wired and wireless networks, and convergence of telecommunications and broadcastings are taking place for ubiquitous multimedia service provisioning. For efficient support of service provisioning for ubiquitous multimedia services on the broadband convergence networks, well-designed and implemented network operations and management functions with QoS-guaranteed traffic engineering are essential.

APNOMS 2009 will provide excellent opportunities for researchers, engineers, network planners, service providers and network operators in telecommunications to learn and share ideas, views, technologies and experiences on network/service operations and management.

### 2. Topics

In APNOMS 2009, the topics of technical sessions, short paper sessions, innovation sessions (for ongoing research, work-in-progress ideas, practical solutions, experimental studies), special sessions, tutorials, keynotes, exhibitions and distinguished experts panel include:

- 1) Network Management
- 2) Architectures, Methods & Technologies
- 3) Service Management
- 4) Business Management
- 5) Experiences

### 3. Jeju Island and the Venue

Jeju Island is located in the southwest sea of the Korean peninsula and the largest island in South Korea.

Jeju has a mild oceanic climate throughout the year and Korean people sometimes call Jeju "Korean Hawaii."

The venue is Phoenix Island [2]. Phoenix Island is located the east of Jeju Island, about 50 minutes by car from Jeju international airport.

The Jeju Island has several sightseeing spots. Halla Mountain is located the center of the island. Sunrise Peak, Seaworld are near from Phoenix Island. More information is available from [3].



Fig. 1 Picture of Halla Mountain



Fig. 2 Picture of Sunrise Peak

### 4. References

- [1] <http://www.apnoms.org/2009/>
- [2] <http://www.phoenixisland.co.kr/en/index.aspx>
- [3] <http://english.tour2jeju.net/main/index.php>





● **Membership for Overseas Candidates:** Overseas Members may opt to join **one IEICE Society of their choice** and may request to **receive the IEICE Transactions of online version** of that Society. Furthermore, Overseas Members may request to receive the IEICE Journals and Transactions (published in paper) at an additional cost. Similar services are available to **Overseas Student Members**. Voting privileges in the IEICE election do not apply to Overseas Members. 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 (<http://www.ieice.org/eng/books/trans.html>)**

The IEICE Transactions provide a forum where members can publicize results of their studies. There are four different series of Transactions, corresponding to the different Societies, and each series is published monthly.

★ **Communications (Communications Society)**

Society	Transactions	Editorial Subject Indexes
<b>B</b> (Communications)	B (Japanese Edition) EB (English)	Fundamental Theories for Communications, Devices/Circuits for Communications, Transmission Systems and Transmission Equipment for Communications, Optical Fiber for Communications, Fiber-Optic Transmission for Communications, Switching for Communications, Switching for Mobile Communications, Network, Network Management/Operation, Internet, Wireless Communication Technologies, Terrestrial Radio Communications, Satellite Communications, Optical Wireless Communications, Antennas and Propagation, Electromagnetic Compatibility (EMC), Sensing, Navigation, Guidance and Control Systems, Energy in Electronics Communications, Terminals for Communications, Multimedia Systems for Communications, Broadcast Systems, Integrated Systems for Communications, Space Utilization Systems for Communications

★ **Fundamentals of Electronics, Communications and Computer Sciences (Engineering Sciences Society)**

★ **Electronics (Electronics Society)**

★ **Information and Systems (Information and Systems Society)**

For further information, please refer to the above website.

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

**NOTE:**

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

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

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

Example: If you want to subscribe to Transaction of EA and EB, please check **Society Registration** as "A", **Additional Society registration (optional)** as "B".

Your membership fee amounts to 7,000+3,500 yen / 5,000+3,000 yen.

3. If you want to subscribe to one Transaction of paper version, please check "Additional Transaction subscription (published in paper)".

Example: If you want to subscribe to Transaction of EC in paper version additionally, please check **Society Registration** as "A", and **Additional Transaction subscription (in paper version)** as "C" or as "EC". Your membership fee amounts to 7,000+4,000 yen / 5,000+4,500 yen.

4. If you want to change membership from Member (In Japan) to Overseas Member, you don't need to pay an Entrance charge.

● **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	5,600yen	3,200yen
Oceania; Near & Middle East; North & Central America; Europe	7,800yen	4,400yen
Africa; South America	11,000yen	5,600yen

Please contact the IEICE Membership Activities Section: E-mail:[member@ieice.org](mailto:member@ieice.org) FAX: +81 3 3433 6659

# IEICE Overseas Membership Application Form

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

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

First name      Middle name      Last name

Prof.  Dr.  Mr.  Ms.      Place of birth: \_\_\_\_\_      Date of birth: \_\_\_\_\_  
Day      Month      Year

### Mailing Address

Home  Office

\_\_\_\_\_  
 Name of Company/School/College      Department/Section

\_\_\_\_\_  
 Street      City      State/Province

\_\_\_\_\_  
 Postal code      Country

\_\_\_\_\_  
 TEL      FAX      E-mail

### Academic Background

The highest academic degree:  Ph.D.  Masters  Bachelors  Others: \_\_\_\_\_

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

(For Student Member) Academic degree which will be conferred on you.      Month & year when the degree will be conferred on you.

### Application Information

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

Member (Overseas)  Student Member (Overseas)

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

**Society registration (Membership fee includes one Society of Transaction of Online version.):**

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

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

**Additional Transactions of paper version (optional):**

EA: Fundamentals  EB: Communications  EC: Electronics  ED: Information & Systems

A (Japanese)  B (Japanese)  C (Japanese)  D (Japanese)

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

### Remittance

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

Entrance charge..... \_\_\_\_\_ Journal subscription (optional)..... \_\_\_\_\_

Annual charge..... \_\_\_\_\_ Mailing option:  Air mail..... \_\_\_\_\_

Additional Society (optional)..... \_\_\_\_\_  SAL mail..... \_\_\_\_\_

Additional Transactions (optional)..... \_\_\_\_\_ **Total remittance**..... \_\_\_\_\_

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 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

## From Editor's Desk

### ● Golden Week

“Golden Week” is the successive 7 days from April 29th to May 5th, on which the national holidays concentrate. “Golden Week” is Japanese original, and this word is Japanese English. It was originally a start that a film company called this period when the box-office record was good so. From then, "Golden Week" had been widely popularized in Japan. This year, May 6th was compensatory holiday. When we took the holidays on both April 30th and May 1st, we could take the successive 8 days vacation. Moreover, in this autumn we can have the successive 5 holidays from September 19th to September 23rd. "Second Golden Week" is created.

After Golden Week, IEICE Communications Society replaces its Board of Directors including GNL Editorial Staffs. At the moment, a new organization will start from May. Please look forward to the new organization of Board of Directors, and also next GNL, with expectation!

Note) April 29<sup>th</sup>: Showa Day, May 3<sup>rd</sup>: Constitution Memorial Day, May 4<sup>th</sup>: Greenery Day, May 5<sup>th</sup>: Children's Day, Sep. 21<sup>st</sup>: Respect for the Aged Day, Sep. 22<sup>nd</sup>: Holiday by law, Sep. 23<sup>rd</sup>: Autumnal Equinox Day

IEICE Global News Letter Editorial Staff

### Editorial Staffs of this issue

No special order is observed



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## --Special Section on New Generation Network towards Innovative Future Society--

The IEICE Transactions on Communications announces that it will publish a special section entitled "Special Section on New Generation Network towards Innovative Future Society" in March 2010.

As information communication networks are becoming indispensable social infrastructure, many kinds of requirements and expectations have been arising within this and next decade. Society needs safe, secure, and high-quality information communication infrastructures, service and application platforms which can satisfy various end-users' requirements on demand, sophisticated capability such as unified mobility management in large scale of terminals and sessions, infrastructure virtualization which can provide transparent and high-level API in various types of communication access media, and so forth. In order to deal with these challenges, further innovations and evolutions from a clean-slate design are strongly required in the future. Many research projects launched in the United States and the European Union in FIND, GENI, and FP7 programs have stimulated researches concerning those hot issues. Taking this situation into account, it is obviously important to share and discuss new visions, ideas, concerns, and latest results of state-of-the-art technologies in wider range of research communities. For this purpose, a special section is being planned (scheduled to appear in the March 2010 issue) to further promote researches and developments of new generation network technologies. This special section solicits not only standard full papers and letters but also position papers describing mainly innovative ideas. A position paper will be handled as a LETTER.

### 1. Scope

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

- Re-design and re-evaluation of today's network architectures and new principles of network design
- New networking and communication paradigms including DTN, Internet of Things, overlay, etc.
- Infrastructure virtualization technology and services, sustainable network
- Green network architecture, protocols, and management
- Network science, self-management and/or autonomic networking framework
- Mobility architecture, secure networking, service platforms
- New traffic models and traffic engineering
- New wireless communication paradigm and architecture
- New optical switching architecture and services

### 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 guideline in the "Information for Authors". The latest version is available at the web site, [http://www.ieice.org/eng/shiori/mokuji\\_cs.html](http://www.ieice.org/eng/shiori/mokuji_cs.html). 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 accepts submissions of not only standard full papers and letters but also position papers describing mainly innovative ideas on new generation networks. A position paper will be handled and published as a LETTER containing contents of (5), (6), or (7) defined in "1.3 Type of Manuscript" of "Information for Authors".

This special section accepts electronic submissions only. Prospective authors are requested to follow the instruction below.

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