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Contents

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Report on Special Panel Session of the IEICE Society Conference 2011:"ICT's roles for dependable social infrastructure"

Hisaya Hadama
NTT Network Innovation Laboratories

1. Introduction

The special panel discussion session of "ICT's roles for dependable social infrastructure" was held in IEICE Society Conference 2011, on the 13th of September 2011 at Hokkaido University. The session was jointly organized by IEICE Engineering Sciences Society and Communications Society, to provide participants with the important experience gained from the Tohoku Earthquake of March 11.

After taking a moment of silence for the victims of the quake, Professor Nobuo Nakajima, Vice President of IEICE, gave opening remarks to the audience. The seven distinguished panelists talked about their own actual experiences in the devastated areas. Following all talks, a panel discussion was conducted by session chair Mr. Kazuo Hagimoto, President of IEICE Communications Society.

Fig. 1   Professor N. Nakajima, IEICE Vice President giving opening remarks

2. Invited talks

The chair of the session, Mr. Hagimoto invited seven distinguished speakers involved in their own fields. The speakers addressed their experiences and the challenges faced by their efforts to recover from the disaster after March 11.

Mr. Kiyosumi Kobayashi   Dr. Masafumi Hosokawa
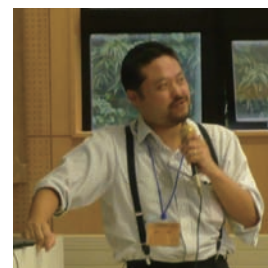

Prof. Haruo Hayashi   Prof. Ken-ichi Mase

Ms. Miyako Hamasaka   Mr. Hiroshi Imai

Prof. Junichi Shimada
Fig. 2   Invited speakers

Fig. 3   Mr. Kazuo Hagimoto, President of IEICE Communications Society, chairing the session

・ Mr. Kiyosumi Kobayashi (NTT) presented damage to NTT Group's network due to the quake and tsunami. He described the significant

reconstruction actions which started just after the disaster. He detailed the recovery processes both on fixed and mobile networks and communication services after the emergency.

・ Dr. Masafumi Hosokawa (National Research Institute Fire and Disaster) made a presentation on the emergency actions of the Firefighting and Disaster Prevention, Danger Management Center. He explained the difficulties created by the disruption of emergency communication from/to local towns in the disaster. He also emphasized the importance of ensuring that citizens could always communicate.

・ Prof. Haruo Hayashi (Kyoto Univ.) introduced six lessons derived from his experience of this disaster. Those are 1)Many local governments suffered at the same time, 2)Maximum Probable Scenario、Maximum Possible Scenario should be considered, 3)the Tsunami caused unprecedented damage, 4)Importance of communication lines for command structure, 5)Necessity of Emergency Mapping Team, and 6)Disaster prevention should be a part of daily life.

・ Prof. Ken-ichi Mase (Niigata Univ.) presented his experiences in setting up ad-hoc wireless network systems for emergency communication for an emergency evacuation shelter in Higashi-Matsushima city. He was able to demonstrate that emergency communication is technically feasible and network building on the site was completed within one week using existing network network components and solar pane and batteries in Niigata University, but it is turned out that network planning survey on the site and various negotiations were time consuming and about 2 months was needed before opening service.

・ Ms. Miyako Hamasaka (NGO JEN) introduced JEN's activities all over the world, and then detailed emergency actions in the Tohoku area after the massive earthquake. She explained their rapid decision making process and emergent response over time using vivid photographs and descriptions. She also showed evaluations of access to mobile phone services in the disaster areas. She recognized the usefulness of Internet tools, such as Twitter and Skype, for communication.

・ Mr. Hiroshi Imai (KDDI) talked about the roles and effectiveness of mobile phones after disasters. He showed KDDI's mechanism to control mobile phone access to the network. He also explained the Earthquake Early Warning service; it utilizes the short message broadcasting technique. The actual track record of the service was shown. He also emphasized the utility of satellite wireless communications after the disaster.

・ Prof. Junichi Shimada (JAIST) briefly introduced MIC's direction and activities to strengthen Japanese society against disasters. He presented his expectation of a future network that can counter disasters. He also pointed out important differences between Japanese society in 1995(Han‐Shin Awaji Earthquake disaster) and that in 2011. They include improved digital literacy of people, greater variety of network services, and progress in wireless technology.

3. Panel discussion

The panel discussion was moderated by Mr. Hagimoto, and we had many vibrant Q&A exchanges. The discussions covered many issues; such as, cooperative work of national and local governments, and the weakness of current communication links between city governments and local community centers or fire houses. It was recognized by the audience that very special communication tools intended to be used only after a disaster, cannot work well. It was agreed that reliable and dependable communication technologies or services to catastrophic disasters must be a daily-life communication tool. It was also pointed out that we should not expect drastic advances in the digital expertise of aged people.

4. Conclusion

We express our thanks to all speakers, their organizations and all participants of this session. We strongly hope that the discussions of this session will help to accelerate movements towards a truly dependable ICT infrastructure for society. This session was organized in cooperation with Prof. Masahide Abe (Tohoku Univ.), Dr. Kazunori Okada (NICT), Mr. Takao Tashiro (Oki), Dr. Toru Hasegawa (KDDI Labs.) and Dr. Tetsuya Yokotani (Mitsubishi Electric).

Fig. 4   Panel discussions

Restoration Status for Damage Caused by the Great East Japan Earthquake and Future Responses

Kiyosumi KOBAYASHI
Director, Information Sharing Laboratory Group, NTT

1. Introduction

With the Great East Japan Earthquake on March 11, 2011, which was the fourth strongest earthquake ever recorded in world history, telecommunication facilities were impacted in unprecedented ways. Fixed-line and mobile communications services had tremendous damage, principally in the Tohoku region, northeast part of Honshu Island. In addition, since both fixed-line and mobile networks were over-crowded and congested with voice calls immediately after the earthquake, it was so difficult for most people to make a call over a wide area, including regions in and around Tokyo, where people were unable to return home from their offices in the city, because of breakdown of major transportation.

Here, we would like to describe our damage condition, major restoration efforts and some countermeasures against future disaster based on experience with the Great East Japan Earthquake.

2. Damage Status

The damage from the Great East Japan Earthquake was so tremendous that approx. 385 exchange offices and 1,500,000 circuits for fixed-line services, and 4,900 mobile base stations were in service disruptions. (18 exchange offices were demolished and 23 exchange offices were flooded. Approx. 65,000 telephone poles were flooded or collapsed in coastal areas. 90 routes of relay transmission lines were disconnected. Approx. 6,300km of aerial cables were flooded or damaged in coastal area. 375 mobile base stations were required of restoration. Damaged buildings were approx. 5% of the total buildings in Iwate, Miyagi, and Fukushima Prefectures. In particular, the damage by tsunami in coastal areas was severe. As shown in Figure 1, this exchange office was carried 500 meters away by tsunami from its original site, and as shown in Figure 2, this exchange office was carried away by tsunami from its original site into the ocean. We estimate that our financial impact of such damages will be approx. 110 billion yen.
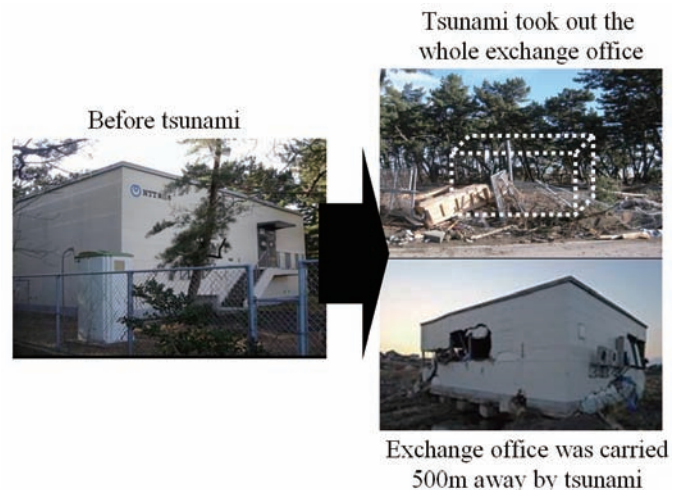
Fig. 1   The Damaged Shichigahama Exchange Office, in Miyagi Pref.

Fig. 2   The Damaged Tokura Exchange Office, in Miyagi Pref.

3. Major Restoration Efforts

Faced with this severe disaster, NTT Group companies quickly established the Disaster Countermeasures Office and over 11,000 people from NTT group companies and partner companies across the nations made an all-out effort to restore the damaged communication facilities and services. At the end of March, we had restored more than 90% of the affected exchange offices and mobile base station equipment, and released future restoration prospects. As steps toward the restoration of fixed line services, we had installed "Container-BOX" in severely damaged exchange office, had built temporary transmission lines, and had installed metal and optical fiber cables

immediately using materials stocked for planned constructions. As steps toward the restoration of mobile services, we had restored transmission lines to mobile base stations, and had used large zone schemes where a single station covers multiple stations. With these efforts, the restoration proceeded at a faster pace than initially planned, and by the end of April 2011 most of the restoration of the damaged exchange offices and base stations was completed.
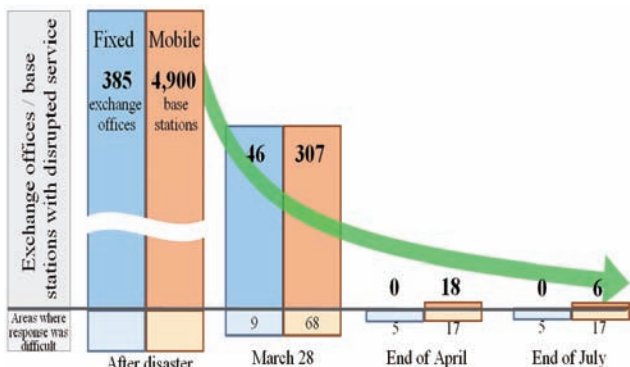
Fig. 3   Restoration Status

4. Activities for Securing Means of Communication, Efforts in Providing Life Support to the Affected People

First, we offered the Disaster Emergency Message Dial service, the Disaster Message Board service, and the Disaster Emergency Broadband Message Boards for safety confirmation. To secure communications in the disaster area, we also installed special public telephones and lent mobile phones and satellite mobile phones for free to the affected people of disaster and government agencies in order to respond to all requests from local governments. One feature of this disaster concerned ICT needs. Information needs evolved, from the need not just for telephone conversations, and, as time passed, the need for the transmission, collection, and analysis of information on the disaster area through SNS and the Internet became remarkable. To respond to this change in information needs, we set up free internet booths, lent out tablet devices, and provided of free public wireless LAN.

Fig. 4   Main Activities for Securing Means of Communication

Furthermore, to offer customers easy to understand and quickly updated information, we also created and provided restoration area maps that displayed on maps the places where customers could borrow free mobile phones. The maps also indicated areas where service is available or disrupted, and the restoration schedule of disrupted areas. These maps were well-received by many customers.

In addition, to support social activities and the return to normal daily activities, we have been providing supports using ICT. In government field, we have been providing government agencies with free map data and aerial photographs that can confirm conditions before and after the disaster. In medical field, we have been providing affected people of disaster with remote health consultations via free video telephones at evacuation centers. In educational field, we also have been providing affected school of the disaster with a comprehensive contact system for communication from schools to parents and guardians.

5. Major Countermeasures against Future Disaster

Based on its experience of past disasters, NTT Group has carried out various countermeasures to provide disaster-resistant network infrastructures and services. These countermeasures include the duplication of transmission routes, based on its experience in the 1968 the Tokachioki Earthquake; the development of the Disaster Emergency Message Dial based on its experience of the Great Hanshin Awaji Earthquake in 1995 and the development of the Disaster Message Board based on its experience of the the Miyagioki Earthquake in 2003.

However, with the Great East Japan Earthquake, telecommunication facilities were impacted in unprecedented ways by massive earthquake and tsunami, large quantities of debris, widespread and long-term power outrages and scheduled outrages, etc. The increased variety of means for information exchange with the advancement of mobile phones and the Internet was remarkable.

We reconfirmed the vitality of communication services in society, and in light of the above points, advance efforts as stated in Figure 5 for countermeasures against Future Disaster.
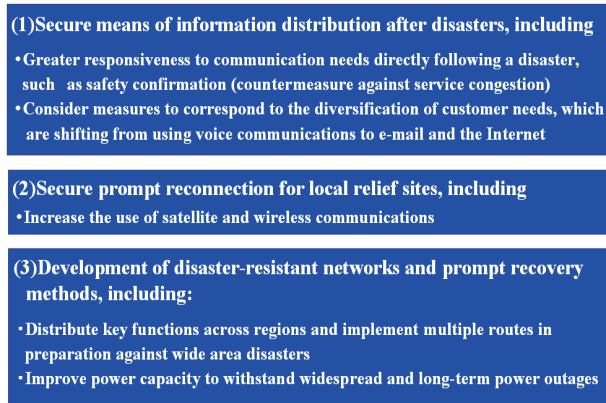
Fig. 5   Basic Stance on Future Disaster Countermeasures

Specifically, in regard to (1), we began working to establish a framework of converting voice messages into digital files that can then be delivered through packet communications. This proposal is based on that the needs of the safety confirmation by mobile phone are great, both fixed-line and mobile networks were over-crowded and congested with voice calls immediately after the earthquake, and customers had difficulty getting connections, however, the users of Internet-based services could get connections to the network.

In regard to (2), we have advanced our efforts as the convenience store deploy Information Station at store site: Set up Wi-Fi network in the store, be available for free in the case of emergency; keep emergency phones (special public phone) at the store, be available for free in the case of emergency; We have also been investigating the promotion and use of satellite and wireless communication, since these have the advantages of instantaneous speed and easy mobility.

In regard to (3), we advance our efforts on: distribute network key functions across regions; Implement multiple routes of relay transmission lines in preparation against wide area disasters; Strengthen exchange office countermeasures against flooding and immersion; Deploy base stations with large zone scheme in densely populated location; use uninterruptable power supply systems or ensure 24-hour battery supply in base stations.

6. Conclusion

The Great East Japan Earthquake was an unprecedented disaster in Japan, but through our response to this disaster, we realized once again the importance of communications, and keenly felt the gravity of our responsibility in this society. We hope to continue to make all-out efforts toward further development of information communication and toward reconstruction.

Fig. 6   Scene of This Session

7. Copyright

The Disaster Caused by the 2011 Great East Japan Earthquake and Fire Fighting Operation by Japanese fire service

Masafumi HOSOKAWA
National Research Institute of Fire and Disaster

1. Introduction

The magnitude 9.0 massive earthquake which struck off the coast of Japan on March 11, 2011, with the epicenter offshore Miyagi Prefecture, triggered devastating tsunami waves exceeding 10 meters in height at some parts of the stricken coasts. It caused a total of 19,906 people dead or missing (as of September 26, 2011) and about 300,000 buildings damaged or destroyed [1].

At some dangerous facilities such as oil refineries and petrochemical plants, oil spill took place and refineries and plants were set on fire. In some coastal areas of Iwate and Miyagi Prefectures which were hit by the tsunami, large fires spread over for long hours to reduce towns to ashes. The National Research Institute of Fire and Disaster conducted a field investigation of the areas affected by the earthquake and tsunami focusing on petrochemical complex damage and wide area fires in order to gather data and detailed information that will be required when working out countermeasures against similar situation in the future.

2. Wide area fires

Large fires, each spreading over a wide area, broke out in many locations from the Sanriku coast extending to Miyagi Prefecture stricken by the tsunami. Our field investigation included inquiries into the cause and outbreak situation of these fires and the extent of fire spread in Taro area of Miyako City, Yamada Town, and Otsuchi Town (in Iwate Pref.), Kesennuma City, Ishinomaki City, and Yuriage area of Natori City (in Miyagi Pref.). Table 1 shows comparison of the burnt area between the 2011 Great East Japan Earthquake and the 1995 Kobe Earthquake

Table 1 Results of field investigation of wide area fires

The 2011 Great East Japan Earthquake		The 1995 Kobe earthquake	
Area name	㎡	Area name	㎡
Noda village	500	Sumaku, Ohuta intermediate school area (North side) (0.4ha)	4,000
Otsuchi Town, Otsuchi Elementary School Area （11.6ha）	116,000	Sumaku, Ohuta intermediate school area (South side)(0.7ha)	7,000
Otsuchi Town, Akahama area (1.4ha)	14,000	Sumaku, Ohuta 4 Chome （0.1ha）	1,000
Miyako City, Tarou area (4.0ha)	40,000	Sumaku, Yokozuna building （0.2ha）	2,000
Yamada Town, Rikuchuu-yamada Station area (17ha)	170,000	Sumaku Chitose park area （1.4ha）	14,000
Kesennuma City, Shishiori area （11.0 ha）	110,000	Nagataku, Takahashi hospital area (6.2ha)	62,000
Kesennuma City, Ninohama area （2.7 ha）	27,000	Sumaku/Nagataku, Nishidai market area (3.4ha)	34,000
Ishinomaki City, Kadonowaki Elementary School area (5.8 ha)	58,000	Sumaku/Nagataku, Mizukasa park area （9.7ha）	97,000
Ishinomaki City, Kadonowaki 3 Chome, Cold storage (0.2 ha)	2,000	Nagataku Hiyoshi 2 Chome(0.3ha)	3,000
Ishinomaki City, Kadonowaki 3 Chome, Apartment	300	Nagataku, New Nagata station area (3.5ha)	35,000
Ishinomaki City, Kadonowaki 3 Chome, Iron factory	400	Nagataku, Kobe Department Store area （3.6ha）	36,000
Ishinomaki City, Hebita area	500	Nagataku, Hosoda 4 Chome （0.4ha）	4,000
Sendai City, Miyagino, Factory (0.88 ha）	8,800	Nagataku , Mifune Dori 2/3/4Chome(1.5ha)	15,000
Sendai City, Miyagino, Residential house(0.21 ha)	2,100	Nagataku , kawanishi Dori 1 Chome （0.3ha）	3,000
Sendai City, Miyagino, Apartment house and factory (0.18 ha)	1,800	Nagataku, Mifune Dori 5/6 Chome (2.0ha）	20,000
Sendai City, Miyagino,Warehouse (0.24 ha)	2,400	Nagataku, Sugawara market area （4.5ha）	45,000
Sendai City, Miyagino, Vehicle fire(0.22 ha)	2,200	Nagataku Higashi Shiriime 7 Chome (0.3ha)	3,000
Sendai City, Miyagino, Warehouse (0.41 ha)	4,100	Hyougoku Egeyama Minami （5.2ha）	52,000
Natori City, Yuriage area , Assisted living residence (1.25 ha)	12,500	Hyougoku Nakamichi Dori 6 Chome （0.4ha）	4,000
Natori City, Yuriage area , Hirta bridge (4.2ha)	42,000	Higashi-Nadaku Uozaki-kita 5/6 Chome (1.0ha)	10,000
Iwaki City, Hisanohama area(1.8 ha)	18,400	Higashiku, Aoki Station area (0.6ha)	6,000
Total	633,000	Total	457,000

Most of these fires reportedly originated from houses destroyed by the tsunami and/or sweptaway cars, ships, etc. Some of them continued burning for three consecutive days.
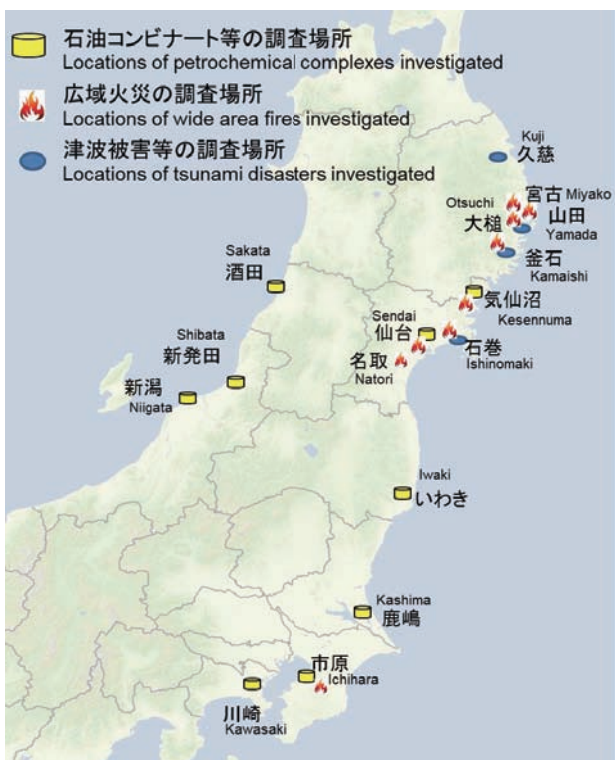

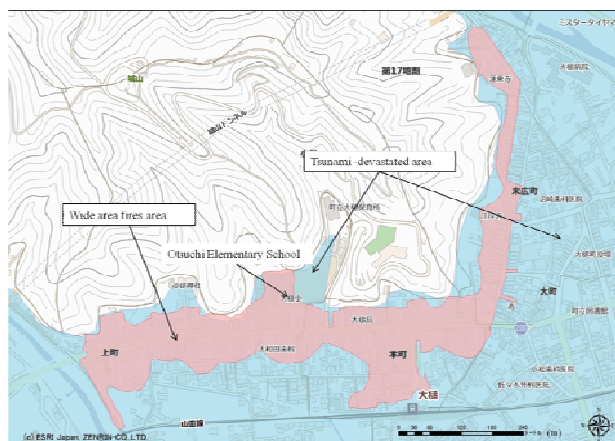Fig. 1　Locations of Investigation Completed before June 30, 2011

Fig. 2　Wide area fire in Otsuchi-chou

Fig. 3   Burnt-off Otsuchi Elementary School

The following pieces of eyewitness information were obtained: "a boat drifted by the tsunami wave upon the quay caught fire, then the fire spread over to the rubble and debris created by the tsunami and to surrounding forests and fields," "the rubble and debris created by the tsunami began to burn when swept into the sea. I saw flames moving riding on the waves," "fire engines started fire-fighting but extinguishment was not achieved because fire cistern was emptied soon," and so on.

These testimonies indicate that fire engines could not come up to the fire scenes because of obstacles such as rubble and debris and flooding caused by the tsunami. This is a very important issue of fire-fighting and rescue activities in case of tsunami disaster. Countermeasures are required.

3. Tsunami damage to fire stations and firefighters

Some volunteer fire fighters became the victims of, or otherwise suffered from, the tsunami. Also, town offices and fire department buildings in various municipalities in the disaster areas were badly damaged by the tsunami. A survey of damage and inundation was conducted in Kamaishi, Otsuchi, Ishinomaki, etc. focusing on town offices and fire station buildings.

Fig. 4   Otsuchi Fire Station (Flooding depth is estimated at 10 meters or higher.)

There were a lot of volunteer fire stations in the areas inundated by the tsunami. The difficulties we face during fire fighting and rescue activities when attacked by a great tsunami, and resulting problems to be solved, were verified during the field reconnaissance. These

observations clearly showed that the fire stations and volunteer fire stations were either completely destroyed or washed away by the devastating tsunami wave exceeding 10 meters in height (of course, fire engines and fire fighting equipment were totally swept away).

Fig. 5   Site where one of volunteer fire stations of Otsuchi Town had been located before the tsunami attack(Flooding depth is estimated at around 3.5 - 4 meters.)

4. Communication system and disaster information sharing

The disaster was so enormous that local fire fighting force could not response to all disaster site. The Fire and Disaster Management Agency (FDMA) dispatched relief team named "Emergency Fire Response Teams (EFRT)" mobilized from outside of affected prefectures. Total 28,620 firefighters, 7,577 units were dispatched to the affected area. (783 of 798 fire departments and 4,354 units were registered to the EFRT as of April 2011.)

The FDMA needs actual damage information of the struck area to determine where rescue teams must be dispatched, and communication systems of information sharing between the headquarters and disaster site, for an effective relief operation. The Satellite-based communication system provided by "the Local Authorities Satellite Communications [2]", played a big role to gather damage information from the local governments in the disaster site.

5. Reference

[1] "The report of the 2011 Great East Japan Earthquake", The Fire and Disaster Management Agency, No.139, Sept. 2011.
[2] http://www.lascom.or.jp/.

Tohoku Earthquake; Overview of JEN's assistance and its challenges

Miyako HAMASAKA
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1. Introduction

First of all, I'd like to express my sincere gratitude for those who have contributed to the emergency assistance for the Great Eastern Japan Earthquake which struck on Friday the 11th March 2011. Amongst all the humanitarian agencies, JEN (Japan Emergency NGO) has received not only donations from people around the world, but also warm messages, addressed to people in the affected area. It has been a pleasure for JEN to deliver those messages to the people in Tohoku.

Today, on their behalf, I'd like to share the voice of the people, and the progress of JEN's assistance implemented over the first four months and finally, the challenges JEN faces.

Below are some notes from our team in Ishinomaki who had experienced the disaster themselves. How did they overcome the fear of the disaster on that day in terms of information sharing?

"On the day, the source of getting the information was limited. The only stable media was radio. The MC on the radio continuously warned us saying 'Look! The huge Tsunami is about to hit!' I thought, 'I don't dare go out and watch the moment. No way.' We were overwhelmed by fear in the complete darkness, freezing cold evacuation center, which we had never experienced before; all of us hoping the information was wrong."

"The information fed by the media was all about the large cities like Sendai, whereas, we were all living in surrounding areas or suburbs near the coastal area. What sort of action were we expected to take?"

"Whether accurate or not, we had been hoping to hear some news about our neighborhoods, community, and our city. However, the local information only begun to be fed through community radio channels, 4 to 5 days after the tragedy."

"What helped us to worry less was to be able to listen to the wireless station for disaster prevention and the local community radio channel. However, we have been able to do so, only a few days after the disaster."

2. JEN's assistance

2.1 Emergency Assistance

Right after the Earthquake and Tsunami occurred, JEN decided to dispatch an expert team to the affected area. However, due to the concerns arising from the accident at the nuclear plant in Fukushima, JEN had to postponed the dispatch due to staff safety. Finally, on Sunday the 13th, 3 staff members left for Sendai city by car. It took them 5 hours to reach Sendai due to the unstable condition of the highway. Virtually a continuous status update to headquarters of both the staff's health condition and location was made during the journey using three different mobile phones. When the team was entering Fukushima prefecture, the damage from the disaster became visible by the bumpy and damaged road and the bad reception of the mobile phones.

Immediately after they safely arrived in Sendai City Central, the staff began interviewing the government officers and rushed to the affected area where JEN faced the aftermath of the disaster. JEN responded to the immediate needs of those affected, by supplying various emergency Non-Food Items and providing a Soup Kitchen at a secondary school acting as an evacuation center. At that time, the school was accommodating more than 1,000 people who have been evacuated, without their belongings and wearing mud and water covered clothes. Although there was a lack of reliable information from the authorities at that time to ensure the delivery of support, needs were accurate. JEN continuously listened to and extracted the needs at the grass roots level; this helped to confirm the gravity

of the situation. It was then that JEN's long term assistance began.

Hot meals and non-food items were delivered to evacuation centres and homes for the elderly immediately. Some items were purchased and some were donated as in-kind donation. A soup kitchen was organized in the evacuation center located in the secondary school.

JEN's 2nd team was dispatched on the 21st March, to Sendai city where the head office was setup. The team split into two, to enable them to assess a wider area. Again, the major source of information was from the people in the evacuation center. After the initial needs assessment, it became apparent that up to Minami Sanriku, large areas were completely destroyed. JEN finally set up the field office in Ishinomaki City, the worst-hit and second-largest city of Miyagi Prefecture.

Since then, JEN has started their assistance with cooperation from the local volunteering center where information continued to be gathered at a grass roots level, to deliver the immediate assistance for the affected individuals.

2.2 Sludge Removal

There are large needs to clean the mud inside and outside of the houses and many volunteers willing to give a hand to the needs in the field. JEN has started to receive and coordinate volunteer activities in the field. Although the lack of infrastructure slows down the implementation of the assistance, to date, more than 1,000 volunteers have joined the program. They are expected to make their way to the field by themselves and bring whatever they may need, including sleeping bag as well as daily food and water.

Eventually, JEN set up the volunteer's base camp near one of the affected residential area, called "Watanoha Base Camp". The location of the camp was chosen in order to allow the flow of the volunteers going in and out of town to share with the neighborhood updated information which could also be used by JEN for further assistance.

While volunteers are on their mission on the ground, JEN staff are coordinating with other NPOs and local governmental bodies not to duplicate assistance. As of the end of July, the grass roots initiatives has allowed us to build-up good relationships with local households which has resulted in us being able to extend the activities to support the recovery of the fish industry on the coastal area.

2.3 Local Staff employed

During April, JEN hired 6 local staff from the victims of the earthquake in Ishinomaki. At the beginning of its operation, JEN rotated the dispatch of its staff from Tokyo headquarters. However, as mid to long-term assistance shall be needed, JEN decided to hire local staff as it is used to do in other operational countries. This process is essential for JEN according to its project policy; "Maximizing the local resources".

All these talented staff have themselves lost all of their belongings in the disaster. Although they are also dealing with reconstructing their own lives, JEN recognizes their skills of coping with the situation and their personal drive to recover from the loss, while encouraging them to stand on the front line of the projects. Therefore, they have been working as project coordinator, logistic officer and finance/administration officer. Several staff from headquarters regularly engaged in the operation in the field to ensure the progress of the projects, and 3 to 4 staff are working at headquarters, solely on the Tohoku project. This is a reflection on the size of the damage of the disaster.

2.4 Community Space

After things started to settle down somewhat in Ishinomaki, JEN started a soup kitchen in local residential areas for the people who had eventually returned to their house's second floor or above (first floors are mostly destroyed by mud and sludge due to the Tsunami).

JEN has called for groups of experienced volunteers who can stay in the place for more than one week. JEN's intention was to not only to provide warm food, but also to establish good communication links between the volunteers and locals. It is another unique component of psycho-social care that JEN considers essential. The request exceeded our expectations and the soup kitchen finally closed in July. The soup kitchen volunteer groups had made a wonderful work in communicating with the locals, which led to the next stage of their recovery process.

Now the number of people JEN is able to reach is increasing and covering the entire city of Ishinomaki. The assistance is gradually shifting to "Community Spaces" projects where local people can gather, exchange information, chat over tea, receive a hair-cut or massage provided by the volunteers. JEN is planning to open more than 10 community spaces by the end of this year. Again this is part of JEN's unique psycho-social care assistance.

This project started due to the difficult living conditions people were coping with. After three months of staying in the poor conditions of the evacuation center, people's physiological exhaustion was at the limit. Yet, no clear instruction on the way forward from the authority was being communicated. One by one, people started to return to their half-damaged homes, to regain some privacy. However, once they left the

evacuation center, they would not receive any more information and that is a problem in itself. The Community space is a tool where exchange of information can take place too.

2.5 Income Generation

While dispatching sludge removal volunteers, JEN engaged with the wider community to understand that a need for assistance was required for some of the smaller fishing village areas, to support them in re-establishing their livelihoods. Volunteers have consequently been performing activities such as assistance with oyster farming, restoration of the fish-product factory, fishing net preparations and of course with ditch cleaning. However, dispatching volunteers alone is not enough to enable the reconstruction of businesses. The authorities have not yet issued plans for redevelopment, but JEN continues to liaise with the government to try to ensure that plans are matched to people's needs.

2.6 Temporary Shelters

Many houses were swept away by the Tsunami and since April, temporary shelters have been, and continue to be, built by the government. In Ishinomaki itself, 8,000 temporary shelters were planned to be built initially, but due to some of the conditions set by the government, some people chose not to receive a it and the number decreased to 7,200 units. Whether people are in temporary shelters or have returned to the upper storey of their partially destroyed homes, this causes social problems as previously mentioned and this is why Community Space are there for.

Local government prepared only the building itself while The Red Cross had been providing electric devices such as refrigerator, washing machine and TV. JEN coordinated with the government and to enable the people to start their daily life immediately after moving into their temporary shelter, providing daily goods consisting of 70 items, such as kitchen equipment and bedding. Sorting out and distributing to each unit is the work done by volunteers and locally employed part-time workers.

As of the end August, almost 7,000 temporary shelters have been built and the remaining are estimated to be complete by the end of September. Instead of closing the support to the temporary shelters once they are all built, JEN will enhance their

"Community Building" project for the newly established, approx 100 communities, by implementing "Community Spaces". This support will continue until people build their confidence and achieve self-reliance.

3. Challenge

JEN has been implementing hundreds of emergency assistance projects since its establishment in 1994, which began with humanitarian assistance for the refugees of former Yugoslavia. The experiences JEN has accumulated should have aided a good response time. However, this was not so and JEN has been wondering why the assistance is moving so slowly, compared to the overseas operations.

Below is the system for emergency situations overseas. Normally, when incidents occur, a coordination meeting is formed immediately and professionals are called for by sectors across the borders.
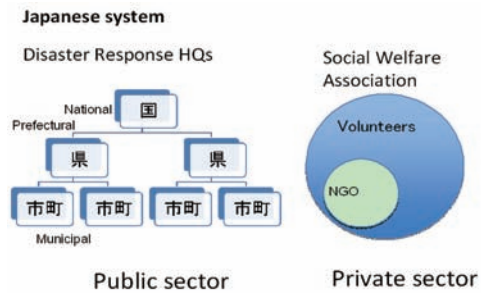

The Stakeholders consist of Local / Central Government, United Nations, International Agencies, Foreign Governments and NGO. These professionals ensure that gaps across the sectors are filled and avoid

duplication of assistance. When a lack of resources causes a delay, they call on other professionals. This "coordination" was misunderstood as a "special arrangement" in Japan. The real "Coordination" happens among the professionals in each sector, in order to execute sufficient assistance based on the needs. This requires NGO to be involved at the same table.
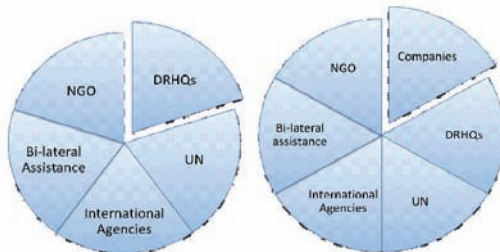

Ordinary coordination

If we have a look at the stakeholders in Tohoku on the diagram below, we can see that there is another major actor, "Company". They have been proactively involved in the assistance since the very beginning, from financial support to volunteer dispatch. This means that utilizing them as "professionals" for the assistance, too.

Stakeholders
In other countries　In Tohoku

The below diagram shows the structure and system, for the case of Tohoku. The stakeholders are divided into two big group, Public sector and Private sector and divided into layers in within each sector. NGOs are considered as being part of the private sector and are therefore categorized as volunteer activity. The two groups had been communicating regularly, yet not fast enough as they are all non-experts on emergency assistance expect NGOs, which resulted in the delay of delivering the required assistance to every sector.

The most important thing is to understand who oversees the bigger picture for this particular disaster relief assistance?

JEN faced the challenge to establish a real "Coordination" crossing the divide between the sectors and layers, in order to deliver a fast and correct level of assistance in an appropriate manner. Information

sharing is one of the key factors to resolve this issue. Sector by layer, Actor by layer, the Coordinator should oversee on a bigger scale to understand what is going on in each sector and layer to achieve the goals set by the authority.

Japanese system

That is the ideal system that is required in such an emergency scenario.

Eight months after the disaster, the recovery phase is finally starting. JEN hopes that each stakeholder will take into account the consequences and the adjustments to be made based on the needs on the ground and efforts progress.

4. Conclusion

"I was told by my friend", "I heard about it". Majority of the local people living in severe condition, are still gathering unofficial information, or rumors 9 months after of the disaster.

JEN continues implementing its assistance for the communities of Ishinomaki, with the support from both authorities and local communities by maximizing the local resources, where people still suffer from the disaster and deal with various issues to resolve. "Build Back Better", the goal JEN sets for overseas operations is the goal for people of Ishinomaki, too. "Build a New City", is the idea which might be the more suitable for the future of communities in which "the ordinary lives" where totally destroyed and wiped away by the disaster, especially when remembering the effort and the progress that had been made so far. JEN would like to propose to implement a sense of innovative solution to "Build Back Better" or "Build a New City" in order to support the people who lost everything.

Successful Recovery from 3.11 Great Tohoku Earthquake Disaster

Fumiyuki ADACHI, IEICE Fellow
Tohoku University, Sendai

1. Introduction

Half a year has passed since the great Tohoku earthquake of magnitude 9.0 happened on March 11, 2011. The tsunami triggered was of a scale not seen since the Jogan tsunami on July 9, 869. People around the world watched in shock how the monster tsunami attacked fishing towns on the Tohoku coast and Sendai airport on TV and Internet news. We, the people in Tohoku region, had to go through very tough times during the last 7 months. Many people in the Tohoku coast region are still suffering from the disaster; however, the disaster recovery progresses steadily. Shinkansen (bullet) train services and flight services are now back to normal.

The Tohoku University campuses are located in downtown Sendai and weren't affected by the tsunami, but some university buildings were seriously damaged. We had to delay the start of spring classes by one month; however, autumn classes started on Oct. 3 as usual. I am delighted to say that almost all educational and research activities at Tohoku University are back to normal. Below, our activities in the last 7 months will be reported.

2. Two times relocation works

In the Engineering School in the Aobayama campus, three buildings, including ours, were seriously damaged by the earthquake. It was decided that they had to be rebuilt. One of them is our No.1 faculty building (Fig. 1) of Electrical, Communication, Electronics, and Information Department, standing on the top of the Aobayama hill, located in the west of Sendai downtown. Immediately after the 3.11 earthquake, we started to temporarily relocate all of the around 20 research laboratories housed in No.1 faculty building to other research buildings. My research laboratory shared some rooms with other laboratories in No.2 faculty building. Meanwhile, we started to build prefabricated buildings to accommodate the research laboratories evacuated from No.1 faculty building. On Oct. 21, my research laboratory moved to a prefabricated building to continue our educational and research activities until our new No.1 faculty building is built (Fig. 2).

Fig. 1   No.1 faculty building waiting for demolition.

Fig. 2   Research laboratory after 2nd relocation.

3. Contribution to regional recovery and future ICT

We at Tohoku University quickly decided to devote our time to contribute to the disaster restoration of our society. Immediately after the 3.11 disaster, Tohoku University has set up a Research Organization for Emergency Restoration and Robust Society Generation led by the university president. Following the setup of the above research organization, we in the ICT field formulated an Electrical & Communication Research Organization (ECRO) focusing on developing robust and advanced ICTs (Fig. 3). We believe the key to success is strong collaboration among university, local industries, and central & local governments.
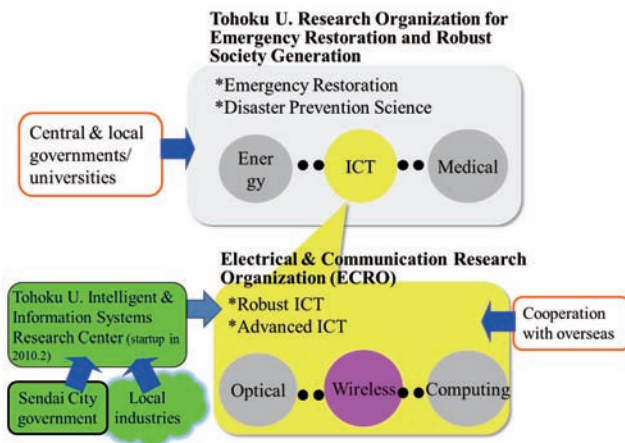
Fig. 3   Setup of Tohoku University research
organizations for disaster recovery.

The setup of ECRO was motivated by the sad fact that the communications networks could not demonstrate their potential when facing the disaster. Communications cables and equipment were seriously damaged by the earthquake and the succeeding tsunami and furthermore, many base stations of cellular phone networks lost their power supply. Moreover, a vast amount of call requests poured into survived networks resulted in a very low probability of call success.

Experiencing the disaster, I strongly believe that the first priority should be given to securing real-time communications for confirming the safety of family, parents, relatives, and colleagues. In the middle of a disaster, particularly important is real-time voice conversation. During the first few days after the disaster, the first priority should be given to emergency communications and voice communications. We need a communications network that can flexibly allocate available network resources between real-time voice services and broadband multimedia data services. Very low rate voice codec and flexible network resource allocation are important research topics.

It is also important to develop a multi-layer network technology that allows flexible cooperation among several networks including cellular, WiFi/WiMAX, satellite, stratospheric platform, etc. Recently smart phones have been rapidly spreading. They have the capability to access both cellular and WiFi/WiMAX networks. Looking at this trend, one possible example is a 2-layer network consisting of a local community network supported by WiFi/WiMAX technology and a cellular network (Fig. 4). On a regular basis, the local community network provides local residents with their local government/community information. In a time of disaster, it handles part of the cellular traffic when the cellular network faces traffic too heavy to handle, while also distributing disaster information to local residents.
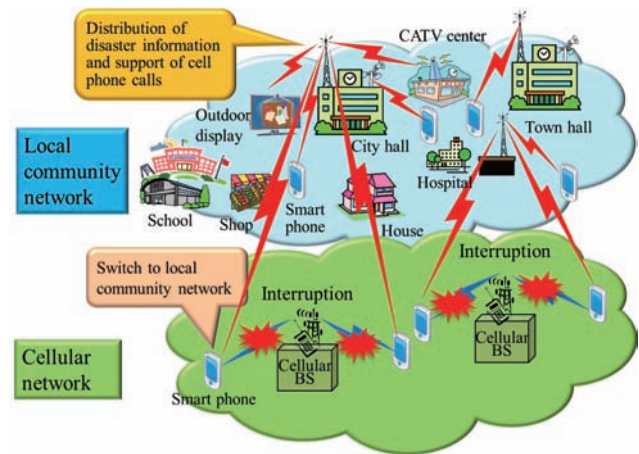
Fig. 4   Two-layer network.

4. Conclusion

Tohoku University survived the disaster caused by 3.11 earthquake and tsunami. Our educational and research activities are back to normal. Now it is time for us to contribute to the construction of a robust society against the natural disasters. The disaster gave us an important chance to reconsider the direction of communications networks development. We want to share with our friends our experience of the disaster and work together towards advanced ICT and robust communications networks.

Contributing to the Reconstruction of Affected Areas through the Establishment of the Fukushima Disaster Recovery Institute

Fuminori TAMBA
Fukushima University

1. Introduction

The Great East Japan Earthquake and Tsunami that occurred on March 11 caused extensive damage, primarily in the Tohoku region. In addition to the earthquake and tsunami, the Fukushima nuclear disaster is affecting every aspect of the lives of residents of Fukushima Prefecture.

Fukushima University students and faculty members carried out support activities for residents of Yamakoshi village that were affected by the 2004 Chuetsu Earthquake in Niigata Prefecture. We also carried out activities to support children in the Kashiwazaki Hisumi area in Niigata prefecture after the 2007 Chuetsu-oki Earthquake. Now Fukushima itself has been stricken, and we have worked to expand support for victims directly, such as by opening a shelter on the Fukushima University campus. At the same time, in April of this year, the "Fukushima Disaster Recovery Institute" was established at the University by a group of willing faculty members, and our aim is to both continue to operate as a university and to contribute to the reconstruction of affected areas.

On June 11, exactly three months after the earthquake, we held the "Symposium on Recovery after the Great East Japan Earthquake and Tsunami." Individuals and organisations active in aid efforts in the Prefecture attended, and discussions and debate were held about future recovery support. During this time, too, regular study sessions have been held at Fukushima University in regards to disaster legislation and compensation issues, rehabilitation research relating to primary industries and agriculture, and other topics.

The number of people who have evacuated outside of Fukushima has climbed to more than 56,000, constituting more than 3% of the prefecture's population. Of these, more than 10,000 are children. Many of these people who left home and are residing in unfamiliar land are very isolated. Furthermore, there are many so-called "voluntary evacuees" from areas outside of the government specified evacuation zones, who are not eligible for government relief or compensation, placing them in a very difficult financial situation.

The University Research Institute conducted a survey of about 200 families that evacuated to Tokyo, and came to understand the reality of refugee shelters outside the prefecture. A large-scale population survey targeting 30,000 households resident in the eight towns and villages around the nuclear power plant (Futaba municipality) was also conducted. Based on the results of these investigations, we have gained an understanding of the situations of those forced to evacuate to areas far away, and would like to consider the future challenges for reconstruction. Moreover, in cooperation with local governments, we would like to contribute to the reconstruction plan for the 8 Futaba areas.

Fig. 1　My presentation at Waseda University.

These efforts and the reconstruction of affected areas will utilize corporate technical capabilities, in conjunction with NPOs and NGOs, to contribute to the building of a network for reconstruction of the affected areas in Fukushima.

First, based on the results of the survey of the populations of eight areas of Futaba, we plan to create forums for discussion regarding reconstruction for the residents of temporary housing units or local government and district units. The thoughts of each individual toward reconstruction, their ideas regarding returning home, and perceptions of radiation contamination are totally different from one person to another.

While respecting such differences, what is needed for the reconstruction of towns and villages now? The university would also like to consider these issues as

part of the local community. In addition, many people are being forced to live outside the prefecture in a state of long-term evacuation. While clarifying the difficulties of those living in evacuation outside the prefecture, we aim to work together in cooperation with the local municipalities, Social Welfare Councils, NPOs and volunteer groups in their evacuated locations, and establish "Support Centres for Evacuees," as a one-stop consultation location on topics that include labour, housing, lifestyle, education and health.

Fig. 2   Temporary housing unit in Iwaki-City.

For the future, Fukushima "recovery" must be considered within the context of long-term evacuation and nuclear accident uncertainty. In this regard, along with learning from experiences gained in the aftermath of past disasters regarding recovery and reconstruction, we must seek a new form of "recovery." What must be done in order to recover people's lives, jobs, education and community? As a national university in the local community, Fukushima University must foster human resource development for leaders of the reconstruction efforts, and regional research and education, while also fulfilling its responsibilities for the deep reconstruction and recovery of the affected areas.

Report on the Forth IEICE Communications Society (CS) Welcome Party

Takao Naito, Hiroaki Morino, Shigenori Hayase, and Hidetoshi Kayama
IEICE-CS Directors, Planning and Member Activities

The forth IEICE Communications Society (CS) Welcome Party was held on Sept. 13 (TUE), the first day of the 2011 Fall IEICE Society Conference at Hokkaido University in Sapporo, Japan. This event has now become one of the major activities in IEICE-CS. About two hundred fifty people, including about one hundred students, and many researchers from universities, institutes, and industries gathered, and enjoyed conversations and exhibitions with complimentary drinks and food.

The party began with a welcome message from CS President, Dr. Kazuo Hagimoto. Then it was followed by a main attraction: the five active communications engineering researchers from industry and research institutes gave brief speeches with pieces of advice to the students. Technical Committees also had nice speeches for students. Then the second part of the party was started with a toast from CS Vice Present, Prof. Hiroyuki Morikawa. About thirty posters of our Technical Committees and related companies were exhibited. Many students willingly had speeches with their thanks. Finally, CS President-Elect, Prof. Yoshiaki Tanaka concluded our party.

As one of the organizers of this event, we would like to note that this event is open not only to the new members of IEICE-CS but also to all the students and researchers who are interested in the activities of IEICE-CS. We would like to thank all of attendees for the event. We hope that more people will join IEICE-CS Welcome Party in Toyama next year!
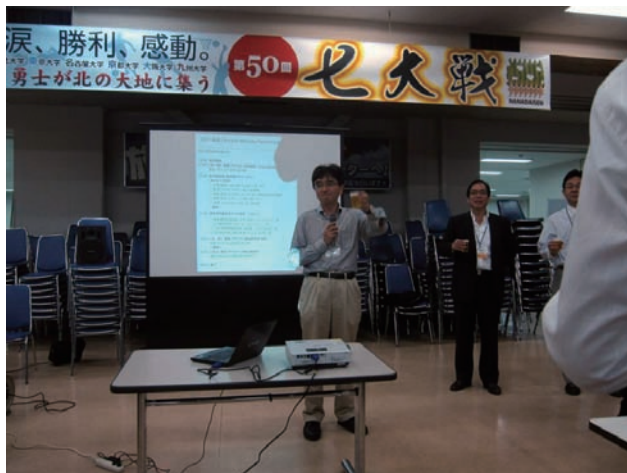
"Cheers!" From CS Vice President.

Enjoying drinks and food.

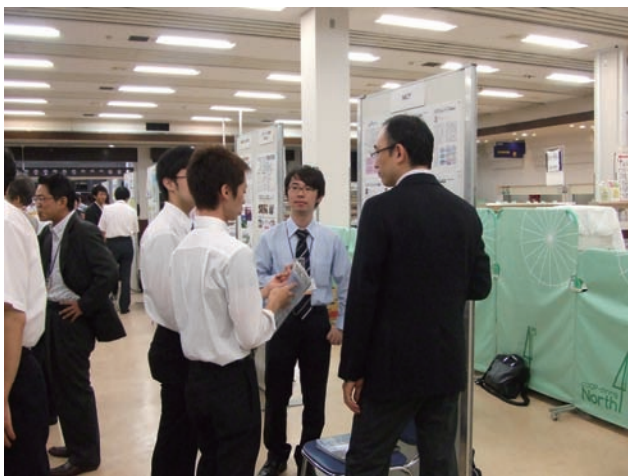Welcome message by CS President.

Speeches by young researchers.

Speeches from IEICE-CS Technical Committees.

Closing address by CS President-Elect.

Lots of posters!

Speeches by students.

Report on ICM English Session at 2011 IEICE Society Conference
-BS-6 Planning, Control and Management on Networks and Services-

Yuji Nomura
Fujitsu Laboratories Ltd.

1. Introduction

IEICE Technical Committee on Information Communication Management (ICM) provided a complete English Session as one of 9 Symposium Sessions focused on special topics of advanced technologies there. It was entitled "BS-6 Planning, Control and Management on Networks and Services".

2. Background of ICM English Session

ICM began this Session in 2004, and has improved and evolved it year by year. The purpose of this Session is to promote the globalization of IEICE by providing the participants staying in Japan or joining from overseas with more opportunities of presentations and discussions in English. The Session was divided into 14 consecutive subsidiary sessions. The participants could enjoy the Session only in English for three and a half days during the Society Conference through these subsidiary sessions. The number of papers in the Session has increased year by year and reached 47 in total this year, with an increase of 20% from the previous year (Fig.1).

Photo 1   English Session in 2011 IEICE Society Conference

3. Topics and Statistics of English Session

Each author could spend fifteen minutes for the presentation and ten minutes for the discussion as a symposium session, therefore the authors could show technical details and discuss in depth.

The Session was so active as usual, a lot of questions came up by the participants in every presentation and some people continued the discussion with speakers successively even during the break time as well.

Many kinds of topics covering wireless network, sensor network, optical network, routing, traffic analysis, disaster recovery and service quality were discussed in those sessions. Fig.2 shows rough statistics of paper categorized by typical topics.

Fig. 1   the number of papers in recent 5 years
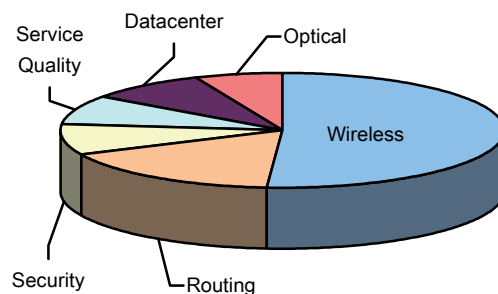
Fig. 2   statistics of paper categorized by topics

41 papers were presented by international students studying in Japan and non-Japanese researchers working in Japanese companies (Fig.3). In addition, more than 30 persons joined it every day and the 80% of the attendees were not Japanese.
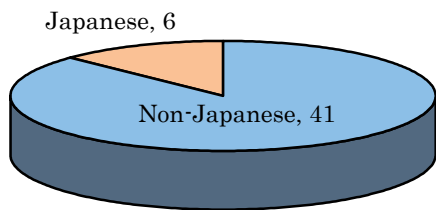
Fig. 3   statistics of author categorized by country

The author's affiliation is mostly university, however about 20% is the industry and research institute (Fig. 4). Thus, the Session has a role of providing a unique opportunity for the international students and industrial researchers to discuss and exchange up-to-date topics, technical problems and ideas even if the research result is not mature. It helps them to find researchers interested in or studying the same area of technologies and make friends each other.
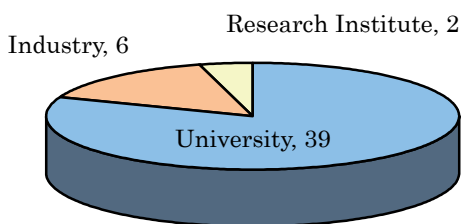
Fig. 4   the statistics of author categorized by affiliation

Photo 2   Discussion in the Session

4. English Session Award of ICM Committee

ICM will select the excellent papers and award the encouragement prize of the Session to those papers in the near future, to further sustain and more vitalize this activity. They will be commended in ICM workshop which will be held in coming March at Okinawa.

Last year, the following papers won the same prize (Table 1).

Table 1   Awardees of English Session Award of ICM Committee in 2010

Awardees	Title
Tran-Quang Vinh (Shibaura Institute of Technology)	Dynamic Transmission Range Adjustment Algorithm to Avoid Energy Holes in Wireless Sensor Networks
Rie Hayashi (NTT)	Design and Implementation of an Optical Plug and Play Technique
Miarisoa Randriamananjara (Global Information and Telecommunications Institute, Waseda University)	How to Model Terminal Equipment in Simulation

5. Conclusion

ICM English Session was very successful because it had a lot of papers and active discussions. I hope this activity is fruitful for all attendees and effective for the globalization of IEICE.

6. Acknowledgement

I do thank Dr. Yoshiaki Tanaka, the professor of Waseda University, who made a great contribution in call for papers, utilizing his nation-wide academic authority and human relations.

I also thank all members of ICM committee, attendees and any other contributors who took part in discussions and supported the Session.

7. References

[1] IEICE ICM Technical Committee web site, http://www.ieice.org/~icm/eng/

[2] IEICE Global Newsletter, http://www.ieice.org/cs/jpn/pub/global_news.html

Report of the Symposium on Network Virtualization 2011

Osamu Akashi[*], Toru Hasegawa[**], Akihiro Nakao[***],
Toshiaki Suzuki[+], Masaki Fukushima[**], Takaya Miyazawa[++]
[*]NTT Network Innovation Laboratories, [**]KDDI R&D
Laboratories Inc., [***]NICT/ITRC/The University of Tokyo,
[+]Hitachi Central Research Laboratory, [++]NICT

1. Introduction

The symposium on Network Virtualization was held at Fukutake Hall in the Hongou campus of the University of Tokyo on September 10th, sponsored by National Institute of Information and Communications Technology (NICT), ITRC Network Virtualization Working Group, IEICE Technical committee on Network Virtualization, The University of Tokyo.

The purposes of the symposium are to focus the virtualization technology that is one of core technologies for the new generation networks, and to promote international research collaboration.

The organizing co-chairs, Dr. Hiroshi Miyabe (NICT) and Dr. Toru Hasegawa (KDDI R&D Laboratories Inc.), organized the symposium. The members of organizing committee are Prof. Akihiro Nakao (NICT/ITRC/The University of Tokyo), Dr. Toshiaki Suzuki (Hitachi Central Research Laboratory), Dr. Osamu Akashi (NTT Network Innovation Laboratories), Masaki Hasegawa (KDDI R&D Laboratories Inc.) and Takaya Miyazawa (NICT). The program chair was Prof. Akihiro Nakao (NICT/ITRC/The University of Tokyo). The members of program committee are Dr. Hiroaki Harai (NICT), Prof. Hiroshi Shigeno, and Dr. Tatsuya Mori.

86 researchers, engineers and other experts from academia or industry attended the symposium and had fruitful discussion.

2. Program

Prof. Tomonori Aoyama (NICT/Keio University) gave us a keynote speech entitled "ICT Paradigm Shift based on New Generation Networks and Cloud Computing".
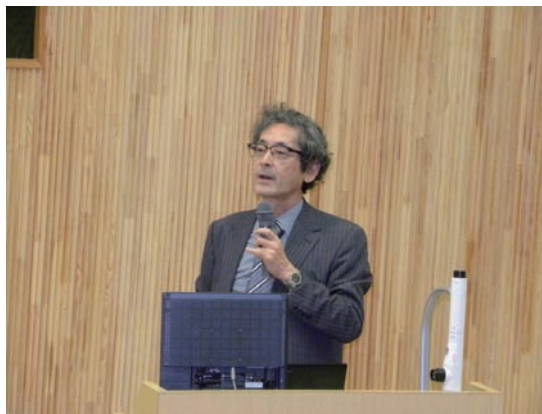
Fig. 1   Keynote speech: Prof. Tomonori Aoyama

In the symposium, there were also six invited talks:
1) Dr. Chip Elliott (GENI Project Office), "GENI: Exploring Networks of the Future"
2) Dr. Max Ott (NICTA), "How to build your own – hopefully better - Internet"
3) Dr. Rick McGeer (HPLab), "TRANSCLOUD: Design Consideration for a High-Performance Could Architecture Across Multiple Administrative Domains"
4) Prof. Andy Bavier (Princeton University), "Enabling Research on Next-Generation Networked Systems"
5) Prof. Robert Ricci (University of Utah), "Managing Trust in Federated Testbeds"
6) Prof. Akihiro Nakao (NICT/ITRC/The University of Tokyo), "Network Virtualization Research In Japan: Recent Updates"

Fig. 2   Invited speech: Dr. Chip Elliott

Fig. 3   Invited speech: Dr. Max Ott

The Panel entitled "Network Virtualization Challenges in Japan" was organized by Prof. Akihiro Nakao (NICT/ITRC/The University of Tokyo). The panelists were Prof. Shinji Shimojo (NICT/ITRC/Osaka University), Dr. Noriyuki Takahashi (NTT), Dr. Motoo Nishihara (NEC), Dr. Toru Hasegawa (KDDI R&D Laboratories Inc.), Dr. Chip Elliott (GENI Project Office), Dr. Max Ott (NICTA), Dr. Rick McGeer (HPLab), Prof. Andy Bavier (Princeton University), Prof. Rob Ricci (University of Utha), and Prof. Ivan Seskar (Rutgers University).

3. Conclusion

We would like to give a special thanks to all speakers, all participants, all committee members, secretaries, and staffs for their hard work, and to all financial sponsors. Following this successful symposium, we are planning an even more successful symposium next year.

Fig. 4   Invited speech: Dr. Rick McGeer

Fig. 5   Invited speech: Prof. Andy Bavier

Fig. 6   Invited speech: Prof. Robert Ricci

Fig. 7   Invited speech: Prof. Akihiro Nakao

Fig. 8   Presentation at the panel: Prof. Ivan Seskar

Report on 13th Asia-Pacific Network Operations and Management Symposium (APNOMS2011)

Toshio Tonouchi*, Yoshiaki Kiriha**
*Secretary of the conference, NEC
**Vice Co-Chair of the conference, NEC

1. Overview of APNOMS 2011

The 13th Asia-Pacific Network Operations and Management Symposium was held from September 21st to 24th, 2011 in Taipei, Taiwan. APNOMS 2011 was organized by the IEICE ICM Committee and The Korean Institute of Communication Science, Korea Network Operations and Management Committee (KICS KNOM). It was technically supported by IEEE Comsoc. Supporting organizations were CIEE, CHT, NIU, NTU, IEEE CNOM, IEEE APB, TMF, IFIP WG6.6. The past activities of APNOMS can be found on-line [1]. APNOMS 2011 entitled "Managing Clouds, Smart Networks and Services" consists of five keynote speeches, one DEP session, two special sessions, three tutorial sessions, ten technical sessions, three short paper/poster sessions and two innovation sessions. The exhibition program was held from the first day to the third day. 223 people from 9 countries participated.

2. Sessions and Activities

Five executives delivered keynote speeches. Photo 1 is a snapshot of the speech of Prof. Si-Chen Lee, President of CIEE, Taiwan. He gave a speech on "Taiwan's Energy Situations and Solutions". Prof. Tomonori Aoyama, Keio University, gave an impressive speech about cloud computing and new generation network. In the DEP session shown in Photo 2, a chair and five panelists, including Dr. Atsushi Takahara from NTT, discussed various topics with the audience in relation to the theme of APNOMS 2011, for example, management issues for virtual network environments. We have a tutorial about disaster recovery based on the experience of the Great East Japan Earthquake. Mr. Yukio Ito from NTT Communications, and Dr. Hideaki Kimura and Mr. Yuji Maeda from NTT made interesting lectures.

A total of 131 papers, including 15 papers from Japan, were submitted to APNOMS 2011 and of these 46 were presented in ten technical sessions. It includes 9 papers from Japan. In the short paper/poster session, 53 papers including 3 Japanese papers were delivered as poster-style presentations. There were two innovation sessions that covered twelve topics. We have 7 topics from Japan In the exhibition program, six companies and research bodies demonstrated prototypes of their products. As a social event, a banquet was held that included a "Traditional Music by Indigenous People".

Lastly, the APNOMS 2011 organizing committee selected the top three papers with the highest overall (paper + presentation) scores from the technical session for "Best Paper Awards". One of winners is Mr. Hiroshi Matsura, NTT, and the others are a Korean student and a Taiwanese researcher.

3. Conclusion

APNOMS 2011 was a very successful symposium. We appreciate great work of the APNOMS 2011 organizing committee members and the cooperation of ICM committee members, IEICE.

The next APNOMS will be held in Seoul, Korea, in 2012.

4. References

[1]   http://www.apnoms.org/, Home page of APNOMS.

Photo 1   Keynote Speech

Photo 2   Distinguished Expert Panel

IGRASS2011 Sendai – Vancouver
IEEE International Geoscience and Remote Sensing Symposium

Motoyuki Sato
Tohoku University

1. Introduction

The IEEE GRSS Japan Chapter originally began preparations to host IGARSS (International Geoscience and Remote Sensing Symposium) in Japan in 2004. The first IGARSS in Japan was held in 1993 in Tokyo. After almost 2 decades, remote sensing technologies have seen tremendous development, and many countries especially in Asia, have started very intensive research programs in these fields to protect our environment. We can also find many good examples of international collaboration in earth environmental observation systems, and these were the motivations to invite the second IGARSS in Japan. In 2007, Sendai was selected as a city to have IGARSS2011.

We sent the call for papers to our colleagues after the IGARSS2010 in Honolulu, and more than 2000 abstracts were submitted by January 2011. The technical committee meeting of IGARSS2011 was held in San Francisco on the 4th of March, and we selected the high quality papers to be presented at the symposium.

Then the earthquake and the tsunami attacked us in east Japan on the 11th March 2011. Sendai is one of the major cities in Northeast Japan, and it has a population of 1 million. Sendai is located 150 km from the epicenter of this huge earthquake. More than 700 people were killed inside Sendai city alone, and almost 20,000 were killed all over Japan. Fortunately, Sendai has nearly recovered to its normal functioning, and for most of us our daily routine has returned in a few weeks after the earthquake, however, we still had many unknown factors at that moment. Especially, some countiers restricted trips to Japan. We started the survey of the alternative venue for IGARSS, and fortunately, we could find 10 session rooms and technical exhibition area in the Vancouver convention center, one week before the original schedule of the IGARSS2011 in Sendai. Vancouver is located west coast of North America, and geographically not very far from Japan. Also, the city can easily be accessed from Europe, Asia and other regions. We expected that the influences to the participants can be minimized, even if we move the venue, and on the 25th March, 2011, Jon Atli Benediktsson President, IEEE GRSS

together with Motoyuki Sato, General Chair, IGARSS 2011 announced officially the change of the venue.

After then, we had to prepare everything from the beginning. Although the original organization committee members continued their duties, we needed more help from the local community in Canada. Vey fortunately, we could immediately obtain warm and strong supports from Canadian Space Agency and Canadian Remote Sensing Society. Local IEEE GRSS Chapter and universities and industries helped us local organization. Especially colleagues from University of British Columbia gathered volunteer students, and they help us the symposium. Many students from local universities, mostly from UBC helped operation of IGARSS as student volunteers.

Fig. 1   Vancouver Convention Centre

Finally, we had 1475 registered participants, from 56 countries, and 163 Japanese attended IGARSS this year.

2. Organization Comitee

IEEE is an annual symposium of IEE Geoscience and Remote Sensing Society (IEEE-GRSS). A local organization committee steers the activities each year. The local organization committee was organized mainly by Japanese members, and most of them are members of IEICE. In order to host IGRSS in Japan, the local organization committee was established in

IEICE, and the symposium was co-organized by Japan Science Council. However, due to the change of venue, Japan Science Council did not co-organize the symposium in Vancouver. The local organization committee members are listed below.

General Chair
 Motoyuki Sato
Secretary
 Yuya Yokota
Technical Co-Chairs
 Yoshio Yamaguchi
 Ya-Qiu Jin
Finance Co-Chairs
 Masanobu Shimada
 Takeo Tadono
 Osamu Isoguchi
Publicity Chair
 Hiroshi Kimura
Sponsor / Exhibits Chair
 Yoshihisa Hara
Sponsor / Exhibits
 Makoto Satake
Industry Liaison
 Koichi Kimura
 Koichi Kishi
Local Arrangements Co-Chairs
 Hiroshi Kawamura
 David G. Michelson
Local Arrangement
 Chinatsu Yonezawa
Student Activities Chair
 Akira Hirose
Technical Tour Chair
 Kazuo Oki
Tutorial Chair
 Yoshikazu Iikura
Outreach Chair
 Toru Sato
Conference Management
 Billene Mercer, Conference
 Management Services, Inc.

Fig. 2   Organization committee members

3. Opening session and Plenary

The opening session was started by the general chair of IGARSS2011, Dr. Motoyuki Sato. Then Dr. Jón Atli Benediktsson, President of IEEE GRSS gave a welcoming speech to IEEE symposium. Then, Dr. Moshe Kam, President of IEEE and by representing Canada, Dr. Monique Bernier, National Chair of Canadian Remote Sensing Society gave speeches.

Fig. 3   Opening Session

The Major Awards and Recognitions was chaired by GRSS Awards Co-Chair Dr. Martti Hallikainen.

After this ceremony, we had three talks in the plenary session. The first speaker,

Dr. Masanobu Shimada (JAXA Principal Researcher, Science program Leader of ALOS and ALOS-2) gave a talk "ALOS, Earth Monitoring, and "Sayonara"". The Japanese earth observation satellite "ALOS" has been operated since 2006, but after the 3.11 East Japan Earthquake, it stopped its operation in April 2011. ALOS have acquired valuable data for more than 5 years, and Dr. Shimada summarized its importance, and introduced the continuing program of ALOS-2.

Fig. 4   Dr. Masanobu Shimada

Then Dr. Shoichiro Fukao, Fukui (University of Technology/Research Institute for Sustainable Humanosphere, Kyoto University), gave a talk entitled "Advances in science and techniques for ground-based radar remote-sensing of the Earth's atmosphere". He has developed atmospheric observation system MU radar in Japan, and he described the deployment of the system worldwide. Finally Mr. Luc Brûlé (Director General, Space Utilization, CSA) gave a talk "The Evolution of Earth Observation in Canada – A

perspective" and discussed the future of remote sensing in Canada.

Fig. 5   Dr. Shoichiro Fukao

In the closing of the opening session, technical co-chairs, Dr. Yoshio Yamaguchi and Dr. Ya-Qiu Jin, Technical gave Symposium Introduction

4. Tutorials

This is a very good opportunities for participants to see famous scientists attending the same meeting. 5 full-day tutorial sand 6 half-day tutorial were held on July 24th, one day prior to the opening of the IGARSS.

(Full Day Tutorials):
   FD-1: SAR Polarimetry: Basics, Processing Techniques and Applications
Instructors: Eric Pottier, Jong-Sen Lee
   FD-3: Recent Advances in Spectral Unmixing of Hyperspectral Data
Instructors: Qian Du, Antonio Plaza
   FD-4: Advanced Classification Techniques for Remote Sensing
Instructors: Ranga Raju Vatsavai, Surya S. Durbha
   FD-5: Image Information Mining – Methods and Applications Related to Earth Observation Data
Instructors: Mihai Datcu, Klaus Seidel
(Half Day Tutorials):
   HD-1: Data Models and Information Estimation in Multichannel Radar Remote Sensing
Instructor: Carlos Lopez-Martinez
   HD-3: Complex-Valued Neural Networks in Remote Sensing and Imaging
Instructor: Akira Hirose
   HD-4: InSar for Geoscientists
Instructor: Abuduwasiti Wulamu
   HD-5: NPP Users Workshop
Instructor: John Furgerson
   HD-6: SAR Tomography: from Basics to Applications
Instructor: Fabrizio Lombardini

5. Technical Activities

The main theme of IGARSS 2011 was "Beyond the Frontiers: Expand our Knowledge of the World". In order to maintain a high-quality and attractive technical program of IGARSS, some technical themes were changed to accept participant interests and requests. International experts in each technical field served as TPC members to achieve this goal. They also introduced new excellent reviewers in their technical fields of expertise for reviewing papers.

We could have a total of 2216 abstracts submitted at the time of deadline (excluding 8 abstracts with withdrawal and error and in submitting), which had been critically reviewed by the experts. However, a great earthquake hit the venue, Sendai, Japan, on March 11, 2011. This unexpected disaster caused the change of venue and date of IGARSS 2011 to keep the symposium safer and more effective. After this unexpected situation, we had reorganized the program due to the change in number of accepted papers including voluntary withdrawal. The total number of withdrawal after acceptance reached as many as 351. We had finally 1497 accepted papers, which were scheduled for presentations including 288 for invited sessions and 1209 for contributed sessions. 661 papers were assigned to oral presentations and 836 for poster interactive sessions on Monday through Wednesday evening.
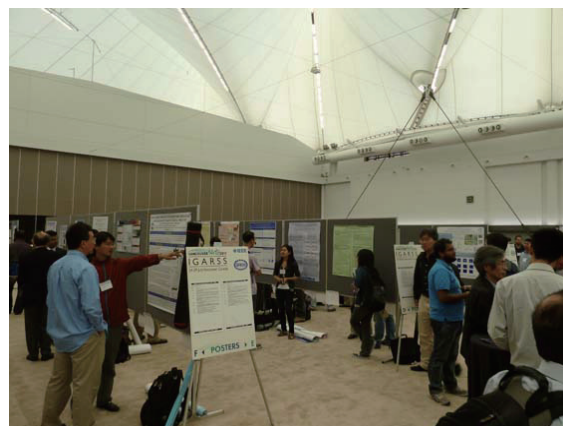
Fig. 6   Poster session

The presentations were organized into 173 half sessions of 5 oral papers each and 75 interactive poster sessions of up to 12 posters each. The technical program covers all remote sensing area including advances in analysis techniques, applications to land, oceans, atmosphere, environmental sensing, sensors and platforms, and data management/education and policy. In addition to these sessions, "Special session on the great earthquake of East Japan on March 11, 2011" showing very recent results obtained by remote sensing, and a poster session "Remote sensing in Canada" by Canadian scientists were organized. All these session organizations went very smoothly. The number of no-show paper in the poster presentation counted 73 only this year, which was the lowest number in the latest IGARSS events.

After all, the number of published on DVD at IGARSS 2011 became 1134. We really thank all TPC members for their efforts and hard works to bring IGARSS2011 successful.

6. Technical Exhibition

19 companies including 3 platinum sponsors (JAXA, NASA, and NICT) and 2 silver sponsors (Mitsubishi Electric Corp. and NEC) have attended the technical exhibition held from the afternoon of July 25 to July 28. 2 companies cancelled the attendance due to the change of the venue. The exhibition was held in the poster session area and attracted many participants. We would like to thank CMS, ICS convention design, and LEVY show service, Inc. for their hard work towards the success of the exhibition.

Fig. 7   Technical Exhibition

7. Social Activities

Welcoming reception was held on July 24th at the Vancouver convention Centre. Participants met friends, colleagues gathered from more than 50 courtiers all over the world. This year's IGARSS awards evening was taken place at the Museum of Anthropology and the Nitobe Memorial Garden at the University of British 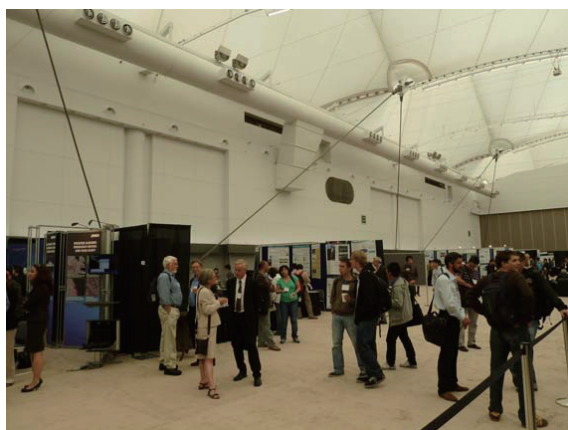Columbia. At the beginning, participants enjoyed a walk through Nitobe Memorial Garden, which is one of the largest and most beautiful Japanese garden, which honors the Japanese educator and statesman Inazo Nitobe who passed away in Victoria in 1933. His word: "becoming a bridge across the Pacific" is well known among Japanese, however, most Japanese recognize him by his portrait on the 5000 yen bank note. Then award ceremony started inside the Museum of Anthropology. Buffer party was held in a large tent outside the museum, and we enjoyed the pleasant breeze from Pacific Ocean.

8. Outreach Activities

Originally in Sendai, we planned to have public display showing the remote sensing technologies. Remote sensing was very usefully used for 3.11 earth quake and tsunami and we decide to continue this idea in Vancouver.

JAXA and NASA jointly displayed remote sensing technology on the Hyperwall at the entrance to the Vancouver Convention Centre. Display was continuously shown and short oral presentations were also given. This area is a public space and not only the participants to IGARSS, but also many visitor could observe the display and attend the presentations.

On July 28, we had two public activities. One is the "Public Poster Display on March 11, 2011 East Japan Earthquake and Tsunami" prepared at Exhibition Hall. More than 20 photographs were donated by Japanese newspaper company "Kahoku shinpo", located in Sendai. In addition, JAXA, NICT, RESTEC and PASCO displayed remote sensing images and related information as posters at the same hall.
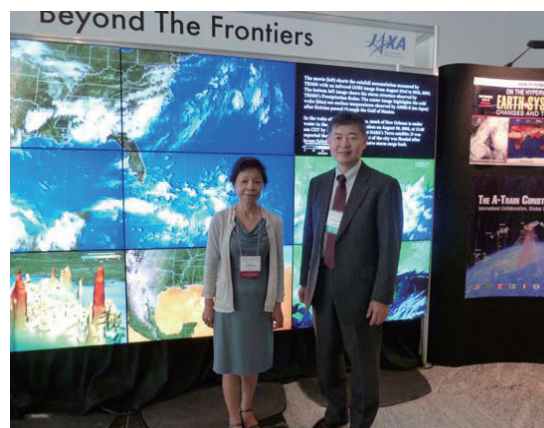
Fig. 8   JAXA-NASA Hyperwall display

The second event was a "Public Lecture" by Dr. Shunichi Koshimura (Tohoku University, Sendai, Japan)"The 2011 Tohoku Earthquake Tsunami Disaster: Its Impact and Lessons". Dr. Koshimkura is a Tsumai scientist and reported the mechanism of the tsunami occurred in Japan and also discussed on the possibility of tsunami in Vancouver. This lecture was open to public, and local people also attend.

9. Conclusion

Although IGARSS2011 was shaken by 3.11 East Japan Earthquake and Tsunami, very smooth transition from Sendai to Vancouver was made and we could close the symposium successfully. We thank again to many colleagues who made it possible, and we feel very happy that we could host this important meeting without problems. After more than half year, now we cannot find any remaining of earthquake damages inside Sendai city. It is now our sincere hope to host IGARSS again in Japan, in order to demonstrate the quick recovery from the disaster in East Japan.

A Summary Report on The 2011 International Conference on Advanced Technologies for Communications

Xuan Nam Tran

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1. Introduction

The International Conference on Advanced Technologies for Communications (ATC/REV) [1] is an annual conference series, co-organized by the Radio Electronics Association of Vietnam (REV) and the IEEE Communications Society (IEEE ComSoc). The goal of the series is to foster an international forum for scientific and technological exchange among worldwide scientists and engineers in the fields of electronics, communications and related areas, and to gather their high-quality research contributions. The first ATC conference was held in October 2008 in Ha Noi, followed by the ATC2009 in Hai Phong and ATC2010 in Ho Chi Minh City, Vietnam. The conference is listed as a portfolio event of the IEEE Communications Society [2]. All the conference proceedings are indexed by IEEExplore.

This year the conference (ATC2011) was held in Da Nang, Vietnam from the 2nd to 4th, August 2011. The conference was proud of being technically co-sponsored by The IEICE Communications Society. In this report, we will present a brief summary on the success of the conference.

2. Conference Information and Statistics

The ATC2011 was hosted by Da Nang University of Technology at the centre of the third largest city in Viet Nam with world-renowned beaches. It is also quite close to the ancient city of Hoi An.

The conference received 123 submissions from authors of 15 countries. From these submissions the technical committee with 148 reviewers has carefully selected 75 papers for oral presentation. The acceptance rate of 61% is similar to that of the previous conferences, reflecting the technical quality of the ATC. The conference technical programme contains 2 plenary and 15 technical sessions. The plenary sessions featured 4 important keynote speeches from distinguised speakers on different aspects of technologies for communications. The first one was preseted by Dr. Roberto Saracco of Telecom Italia with the title *"The Internet WITH Things"* addressing the enabling technologies for the future transformation and evolution of the Internet services. In the following speech, Dr. Nguyen Huu Le, the president of TMA Solutions, outlined challenges and shared his sucessful experience on *"How to Build an Industrial R&D Center in Vietnam: A Case Study"*. Prof. Matthias

Fig. 1 Dr. Roberto Saracco presented his keynote speech entitled *"The Internet WITH Things"*.

Paetzold of University of Agder, Norway, continued with his talk entitled *"From Basics to Advanced Modelling and Simulation Techniques for Mobile Radio Channels"*. The talk covered different models and algorithms for simulating various types of complicated radio channels such as MIMO (Multiple Input Multiple Output) and cooperative communications. The last keynote speech by Prof. Jenq-Neng Hwang of University of Washington, addressed emerging trends about intelligent video tracking and surveillance solutions for networked cameras in object classifications. The technical sessions were divided into 7 parallel ones. Similar to the previous conferences, wireless communication was still dominant with one session of *Wireless Communications*, two of *Cognitive & Cooperative Networks* and one of *Ad hoc & Sensor Networks*. The next attracted topic was *Antenna & Propagations* with two parallel sessions. This year the technical programme committee also collaborated with the IEEE Comsoc Vietnam Chapter to hold a paper contest for *The Best Paper Award* and *The Student Best Paper Award*. Based on experts' recommendations and careful reviews, the technical committee selected two papers for the awards. *The Best Paper Award* was presented to the paper *"Construction of High-Rate QC-LDPC Codes"* by Xu Chen and Francis Lau of Hong Kong Polytechnic University. The paper *"A Geometric Street Scattering Channel Model for Car-to-Car Communication Systems"* by Nurilla Avazov and

Fig. 2   A typical technical session.

Fig. 3   Prof. Francis Lau of Hong Kong Polytechnic University presented his paper which won the *Best Paper Award.*

Matthias Paetzold of University of Adger was selected for *The Student Best Paper Award.*

Apart from the technical sessions of ATC, the conference also featured a special *Workshop on Communications and Navigations for the Development of Vietnam's Marine Economy* with 21 presentations discussing various applications of advanced electronic and communication technologies for boosting the marine economy of Vietnam. Students of Da Nang University of Techno also had good opportunity to participate in a tutorial on practical satellite link designs from an expert for free of charge.

The conference proceeding has been recent uploaded to the IEEExplore at the following address: http://ieeexplore.ieee.org/xpl/mostRecentIssue.jsp?punumber=6022617

3. Acknowledgments

The success of the conference required contributions of many sponsors and volunteers. This is the first year the conference received the technical co-sponsorship from The IEICE Communications Society, Japan. Unfortunately, the sponsorship agreement was finalized just before the big earthquake and tsunami hit the north-east part of Japan. The severe damage of the catastrophe prevented participation of many colleagues from Japan. The conference also received the financial sponsorship from the National Foundation for Science and Technology Development (Nafosted) of Vietnam for conference proceedings printing, reviewing system and keynote speakers' supports. Other supports were from The Radio Voice of Vietnam, Vietnam Television, Viettel Group, and The Authority of Radio Frequency Management.

Special appreciation is extended to four keynote speakers for volunteering to deliver keynote speeches with very limited supports from the conference. Prof. Matthias Paetzold and Dr. Roberto Saracco did not only join the conference as keynote speakers but also served as the technical program committee co-chair and the conference general co-chair, respectively.

The conference would like to express special gratitude and appreciation to all members of the organizing committee and the technical program committee for their time, talent, and dedication. Special thanks go to Prof. Nguyen Linh Trung of College of

Technology for having done an excellent job as a TPC co-chair to ensure timely review result notification and maintain technical quality of the conference. Last but not the least, the conference would not be a success without supports of the local committee from Da Nang University of Technology. The committee paid significant efforts in managing the conference organization with only very limited budget. Without outstanding contributions of all these members we would have not had such an excellent conference.

4. Conclusions

The ATC2011 conference was ended successfully. It was regarded as a symbol of continually successful partnership between The Radio-Electronics Association of Vietnam (REV) and The IEEE Communications

Fig. 4   Conference gala dinner in the Blue Whale Restaurant on the top of Green Plaza Hotel.

Society, as well as the technical sponsorship of The IEICE Communications Society. The conference looks forward to further collaboration with IEICE-CS in the upcoming events.

5. Reference

[1]   http://www.rev-conf.org
[2]   http://www.comsoc.org/conferences/portfolio-events.

Report on the 4th International Workshop on Wireless Distributed Networks (IWDN 2011)

Osamu Takyu
Shinshu University, Japan

1. Introduction

The 4th International Workshop on Wireless Distributed Networks (IWDN 2011) was held in conjunction with IEEE International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC 2011), on 11 September 2011, at Westin Harbor Castle in Toronto, Canada. The 1st , 2nd , and 3rd IWDNs were held in Cannes France, Tokyo Japan, and Istanbul Turkey, respectively.

2. Activity of Committee on Wireless Distributed Network

Committee on wireless distributed network pays attention to the following topics and then has the places for discussing them.

*__Application__
Ad-hoc network, Multi-hop network, Mesh network, Sensor network, Self-organized network, Advanced cellular network, Heterogeneous network, and Cooperative transmission system, Smart utility network, Wireless grid

*__Technology__
BS/AP cooperation, Cooperative sensing, Cooperative relay, Cross layer optimization, Distributed MAC, Distributed MIMO, Distributed RRM /Scheduling, Interference alignment,
Network coding, Spatial spectrum sharing, Super position coding, Virtual antenna array

*__Theory__
Array signal processing, Bayesian network, Convex optimization, Decomposition methods, Game theory, Graph theory, Multi-dimensional Information theory

So far, 12 domestic workshops were held (one of them was canceled because of the earthquake disaster). In the workshops, a lot of researchers introduced the results related to the latest topics and the construction of fundamental analysis basic.

For spreading the results of activities to various technical fields, we published the textbook with the title of ``Wireless Distributed Network'' (written in Japanese) in March 2011 from IEICE. This textbook should be suitable for not only the beginners to start studying WDN but also the senior researchers to remember the fundamental theory of WDN.

3. Overview of IWDN2011

The workshop venue of IWDN 2011 was Toronto Canada. Toronto is one of the major cities in Canada,

Fig. 1   Niagara Fall

in the east side of American continent, and near the Great Lakes. One of the most famous tourist spots is Niagara Fall (Figure 1). It takes about one hour by car to move from the center of the city to Niagara Fall. So, some tours to Niagara Fall are ready for tourist in the city of Toronto. There are wineries near Niagara Fall and Ice wine is really delicious. IWDN 2011 was held in the attractive city, Toronto.

IWDN 2011 attracted 20 papers and after careful review, 10 papers have been accepted. There are three sections and 12 oral presentations including 2 invited talks.

In the opening, Prof. Kenta Umebayashi (Figure 2(a)), General Co-Chair in workshop, explained the scope of IWDN 2011.

In the first invited talk, Prof. Simon Haykin (McMaster University, Canada) talked about `` Vision for a New World of Wireless Communications''. As we know, Prof. Simon is very famous researcher in the field of not only wireless communication but also filter theory. ``Adaptive Filter Theory'', which is written by him, is one of the most famous technical books. He introduced a lot of topics and one of the interesting topics was cognitive radio. He considers the transmit power control based on cognitive cycle, both the spectrum holes and the spatial direction of interference signals are useful for controller.

In the second invited talk, Dr. Bernhard Raaf (Nokia Siemens Networks, Germany) talked about ``Vision for Beyond 4G Broadband Radio Systems''. He introduced the Long Term Evolution (LTE), which is the 3.9 G standard of mobile cellular system and gave us the expectation toward ``Beyond 4G'' (B4G). He suggested that there were some important key technology components, such as versatile numerology, Massive MIMO, Heterogeneous nets, and so on, and

each technique supports each requirement of B4G. I was really impressed by what he said: ``utilizing some 10x spectrum 10x more effectively and increasing base station densities 10x supports the expected 1000x capacity and throughput increases''.

The titles of technical papers are follows.
- Cyclostationary spectrum sensing under four-level hypothesis for spectrum sharing (Tokyo University of Agriculture and Technology, JP, University of Oulu, FI)
- Spectrum Metrics for 2.4 GHz ISM Band Cognitive Radio Applications (Communications Research Center, CA)
- Two-Level Channel Coding for Cooperative Wireless Networks Based on WiMAX LDPC codes Robert H Morelos-Zaragoza (San Jose State University, USA)
- Cross-Layer Designed Adaptive Packet Length Control for Wireless Networks (Kagawa University, JP)
- Distributed Self-Optimization for Efficient Reconfiguration in Overlapping Heterogeneous Wireless Access Networks (University of Western Ontario, CA)
- Fundamental Study on Adaptive ACK Link Control for Downloading based on TCP Connection in Mobile Wireless Communication (Shinshu Univ., JP, TUS, JP, Univ. of Tokyo, JP, UEC, JP, KDDI R&D Lab. Inc., JP)
- A Study on Beam Tilt Angle of Base Station Antennas for Base Station Cooperation Systems (Tokyo Institute of Technology, JP, Panasonic Mobile Communications Co., Ltd., JP)
- A Bit Interleaved Repetition Coded Base Station Cooperation for Downlink OFDM Signaling, (Osaka University, JP.)
- Cooperative Transmission Scheme with Inactive Node Reactivation Condition for Solar-Powered Wireless Sensor Networks, (Nagoya University, JP)
- Disjoint Trajectory in Wireless Sensor Networks with Two Mobile Sinks (Yokohama National University, JP)

 Finally, Prof. Antti Tölli (Figure 2(b)), General Co-Chair, expressed gratitude to the committee members for their efforts and then closed this workshop. After closing workshop, the petit party was held in the restaurant near Westin Harbor. Not only presenters, committee members but also a lot of audiences attended this party (Figure 4). So, it was great exciting night.

4. Future Plans of IWDN

  We have the plan for the 5th international workshop on wireless distributed networks (IWDN 2012) in conjunction with IEEE PIMRC 2012 in Sydney Australia. We would like to encourage you to show your research result at IWDN 2012.

Information URL
International Workshop International Workshop on Wireless Distributed Networks
    http://www.icwdn.org/wdn2011
Contact Point:wdn-sec@mobile.ee.titech.ac.jp
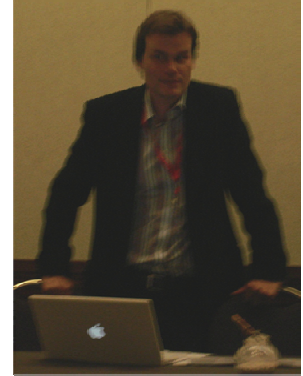
(a) Prof. Kenta Umebayashi   (b) Prof. Antti Tölli

Fig. 2   General Co-Chairs of IWDN 2011

Fig. 3   Opening Speech

Fig. 4   Petit Party

Report of the 16th OptoElectronics and Communication Conference (OECC) in Kaohsiung

Hidenori Taga
National Sun Yat-Sen University, Taiwan

1. Introduction

The OptoElectronics and Communications Conference (OECC) has been held once every year since 1996, and it was held this year in Kaohsiung, Taiwan from July 4th to 8th. National Sun Yat-Sen University (NSYSU), Taiwan hosted this event with National Science Council, Ministry of Education, Bureau of Foreign Trade, and Ministry of Foreign Affairs, Taiwan. The conference was technically co-sponsored by IEICE Communications Society, IEICE Electronics Society, IEEE Photonics Society, IEEE Communications Society, and The Optical Society of America. The conference venue was the Splendor Kaohsiung, a landmark of Kaohsiung city.

2. Organizers and technical program

To organize this conference, President Hung-Duen Yang, NSYSU and Prof. Wood-Hi Cheng, NSYSU served as the conference chair and co-chair, and Prof. Hidenori Taga, NSYSU, Prof. Ching-Ting Lee, National Cheng Kung University, Prof. Sheng-Lung Huang, National Taiwan University, Prof. Yi-Jen Chiu, NSYSU, and Prof. Chin-Ping Yu, NSYSU served as the organizing committee chair and co-chairs.

The technical program of the conference was determined by the technical program committee chaired by Prof. Tsong-Sheng Lay, NSYSU. The committee had arranged the technical program of the conference including a plenary session, 2 workshops, 2 symposia, and 66 technical sessions including 1 poster session and 1 postdeadline paper session. There were 7 technical categories in the conference, and 7 sessions were conducted simultaneously during July 5th to 8th. The technical categories were (1) Core/Access Networks (chair Winston Way, co-chair Kai-Ming Feng), (2) Transmission Systems (chair Jian-Jun Yu, co-chair Jye-Hong Chen), (3) Optical Fibers, Cables and Fiber Devices (chair Siddharth Ramachandran, co-chair Yin-Chieh Lai), (4) Optical Active Devices and Modules (chair Yuzo Yoshikuni, co-chair Yi-Jen Chiu), (5) Optical Passive Devices and Modules (chair Chengkuo Lee, co-chair Chii-Chang Chen), (6) LCD, Solar Cell, and Solid-state Lighting Technologies (chair Ye Tao, co-chair Ann-Kuo Chu), and (7) Emerging Technologies (chair Kam Tai Chan, co-chair Hao-Chung Kuo).

3. Paper acceptance and attendees

Contributed papers were submitted from 25 countries, and there were 353 contributed papers including 10 postdeadline submissions. After a vigorous reviewing process by the technical program committee, 294 papers were finally accepted for the presentation. An overall acceptance ratio of the contributed papers was 83%. 177 papers including 6 postdeadline papers were accepted for the oral presentation and 117 papers were accepted for the poster presentation. Also, there were 9 tutorials and 80 invited papers for the oral presentation.

During the conference, there were 466 participants from 20 countries. Table 1 shows number of participants by countries. Major part of the participants were from Asia-Pacific region.

4. Plenary session

On July 5th, an opening ceremony followed by a plenary session was held. In the opening ceremony, a warm welcome was expressed by the conference chair (Fig. 1), and a brief summary of conference statistics was reported. Then, the plenary talks had been done by 4 distinguished scholars and experts in the world. Dr. Shigeyuki Akiba, KDDI R&D Laboratories and The Tokyo Institute of Technology, Japan explained the ICT networks and services in new era. Prof. David Payne, University of Southampton, UK outlined high power fiber laser technologies. Dr. Young-Kai Chen,

Table 1 Number of participants by countries.

Japan	159	Australia	14	Italy	2
Taiwan	141	Germany	6	Netherlands	2
China	30	France	5	Switzerland	2
Korea	30	Canada	3	Belgium	1
United States	27	Portugal	3	Sweden	1
Hong Kong	17	United Kingdom	3	Thailand	1
Singapore	17	Denmark	2	Total	466

Bell Laboratories, Alcatel Lucent, USA discussed the photonic integrated circuits for the optical fiber communications. Dr. Yuan-Kuang Tu, Telecommunication Laboratories, Chunghwa Telecom Co., Ltd, Taiwan illustrated green ICT and Chunghwa

Fig. 1   Welcome remarks by President Yang, NSYSU.

Telecom's network evolution.

5. Workshop

There were 2 workshops held on July 4th. The first one was entitled "What photonic technology will play the leading role in the upcoming cloud era?" organized by Dr. N. Wada, NICT, Dr. T. Sakano, NTT, and Prof. Y. Hirota, Osaka University. This workshop was technically co-sponsored by Technical Committee on Photonic Network, IEICE Communication Society.

Another workshop was entitled "Recent progress in optical communication technologies, innovations towards the Exa-bit era" organized by Dr. K. Nakajima, NTT, and Dr. I. Morita, KDDI R&D Laboratories. This workshop was technically co-sponsored by Technical Committee on Extremely Advanced Transmission, IEICE Communication Society.

6. Special symposium

There were 2 symposia during the conference. The first one was entitled "Advances and Opportunities in Fiber Optical Communications –a Tribute to Dr. Tingye Li on his 80th Birthday" organized by Prof. Yung Jui (Ray) Chen, NSYSU, held on July 6th. This symposium paid tribute to Dr. Tingye Li, and 6 invited speakers made talks covering various fields of optical communications and photonic technologies. They were Dr. Y. Sun, Mobim Technology, U.S.A, Prof. C. Chang, UC Berkeley, U.S.A, Dr. S. J. B. Yoo, UC Davis, U.S.A, Prof. G. K. Chang, Georgia Institute of Technology, U.S.A, Dr. C. F. Lam, Google, U.S.A, and Dr. A. Chiu, AT&T Labs Research, U.S.A (Fig. 2).

Another symposium was entitled "Silicon Photonics" organized by Prof. Roel Baets, Ghent University, Belgium, held on July 8th. This symposium discussed recent advancements of the Silicon photonics, and 5 distinguished researchers had presented invited talks. They were Prof. G. Roelkens, Gent University, Belgium, Dr. F. Horst, IBM Research, Switzerland, Dr.
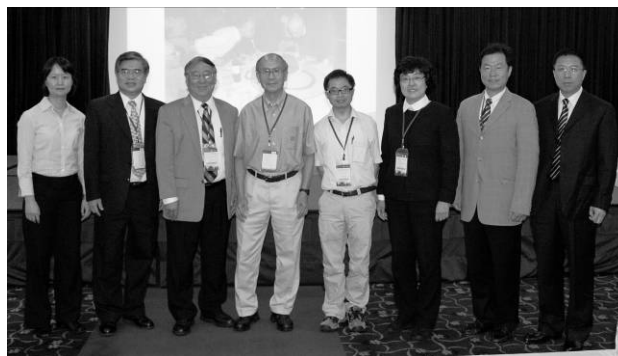
Fig. 2   Invited speakers of the first symposium.

D.-L. Kwong, Institute of Microelectronics, Singapore, Prof. H.-K. Tsang, The Chinese University of Hong Kong, Hong Kong, China, and Prof. Y. Arakawa, The University of Tokyo, Japan.

7. Social activities and award ceremony

A few social events were arranged during the conference. A short night tour to the night market was arranged on July 5th. A half day tour was also arranged in the afternoon of July 8th.

A banquet was held on July 6th at the conference venue. During the banquet, two award ceremonies were held to honor the best paper award and the best student paper award. Each technical category chose one best paper and one best student paper, thus, 7 best paper awards and 7 best student paper awards were honored during the banquet. After that, two performances were demonstrated for the attendees. The first one was the traditional dance performance by native Taiwanese (Fig. 3). The second one was the martial arts performance by the champion team of Taiwanese universities competition.

Fig. 3   Traditional dance performance by native Taiwanese.

8. Conclusion

Outline of the 16th OECC was reported. The 17th OptoElectronics and Communications Conference (OECC 2012) will be held in Busan, Korea from July 2nd to 6th, 2012. I am looking forward to seeing you in Busan.

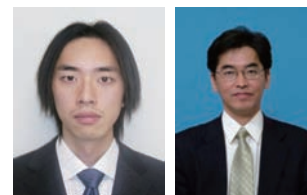# Report on PN International Workshop on Opto-Electronics and Communications Conference (OECC2011)

Yusuke Hirota*, Toshikazu Sakano**
*Osaka University, **NTT

1. Introduction

The international work on Opto-Electronics and Communications Conference 2011 (OECC 2011) was held at The Splendor, Kaoshiung, Taiwan, July 4th 2011. This workshop is organized by IEICE Technical Committee on Photonic Network (PN) with support from OECC organizing committee. About 80 researchers attended from not only Asian countries such as Japan, Taiwan, but also USA and European countries. Although the workshop was held in the day before main conference started, the workshop was successful with valuable presentations and discussions.

2. PN/OECC2011 Workshop Program

PN/OECC2011 Workshop was entitled on "Photonic Technologies in the Cloud Era - What photonic technology will play in the leading role in the upcoming cloud era? -". The workshop focused on the photonic technologies for the could network in terms of device and network perspective. The objective of this workshop is to reveal the network requirements of cloud services, ranging from chip-level interconnection networks to inter/intra-datacenter networks, and to explore the crucial photonic network and device technologies that can meet the requirements.

This workshop consists of two sessions. The first session entitled on "Network requirements for the cloud" consists of 3 invited talks, presented by Dr. Cedric F. Lam (Google, USA), Prof. Ken-ichi Sato (Nagoya University, Japan), and Dr. Toshikazu Sakano (NTT, Japan). The second session entitled on "Photonic device/network technologies for the cloud" consists of 3 invited talks, presented by Dr. Dominique Chiaroni (Alcatel-lucent, France), Prof. Mount-Learn Wu (National Central University, Taiwan), and Prof. Hideki Tode (Osaka Prefecture University, Japan).

The invited presentations covers research field including introduction of state-of-the art researches on photonic network architecture and hardware device technologies. The topics were optical technologies for the cloud or datacenter communications, contents distribution platform, expectation from a carrier's perspective, challenge for new green networks, optical interconnects, optical packet switching.

3. Summary

The PN/OECC 2011 Workshop was a very successful workshop. Various topics on photonic device/network technologies were vigorously discussed at each session. We thank to OECC 2011 organizers, invited speakers, participants and PN committee members.

4. Reference

[1] OECC2011, http://www.oecc2011.org/3_workshop.html
[2] PN, http://www.ieice.org/~pn/jpn/

Cedric F. Lam (Google, USA)   Prof. Ken-ichi Sato (Nagoya Univ., Japan)   Dr. Toshikazu Sakano (NTT, Japan)

Dr. Dominique Chiaroni (Alcatel-lucent, France)   Prof. Mount-Learn Wu (National Central Univ., Taiwan)   Prof. Hideki Tode (Osaka Prefecture Univ., Japan)

Fig. 1   Invited speakers

Fig. 2   Discussion

IEICE-CS Conferences Calendar

Date	Conference Name	Location	Note
29 Oct. - 02 Nov. 2012	2012 International Symposium on Antennas and Propagation (ISAP2012)	Nagoya, Japan	To be held
24 May - 25 May 2012	The 4th Sarajevo Technology Forum 2012 (**STF2012**)	Sarajevo, Bosnia and Herzegovina	Submission deadline: Jan. 10 2012
18 May - 19 May 2012	2012 Korea-Japan Electromagnetic Theory, Electromagnetic Compatibility, and Biological Effect Joint Conference (**KJJC-2012**)	Seoul, Korea	Submission deadline: Mar. 2 2012
06 May – 09 May 2012	The 2012 IEEE 75th Vehicular Technology Conference (**VTC2012-Spring**)	Yokohama, Japan	Submission deadline: closed
05 Mar. - 06 Mar. 2012	World Telecommunications Congress 2012 (**WTC2012**)	Miyazaki, Japan	Submission deadline: closed
01 Feb. - 03 Feb. 2012	The 26th International Conference on Information Networking (**ICOIN2012**)	Bangkok, Thailand	To be hold **soon**
28 Nov. - 01 Dec. 2011	29th AIAA International Communications Satellite Systems Conference (**AIAA ICSSC-2011**)	Nara, Japan	Done
25 Oct. - 28 Oct. 2011	2011 International Symposium on Antennas and Propagation (**ISAP2011**)	Jeju, Korea	Done
04 Oct. – 07 Oct. 2011	15th International Conference on Convergence in Services, Media and Networks (**ICIN2011**)	Berlin, Germany	Done
02 Oct. - 05 Oct. 2011	The 17th Asia-Pacific Conference on Communication (**APCC2011**)	Kota Kinabalu, Malaysia	Done
21 Sept. - 23 Sept. 2011	The 13th Asia-Pacific Network Operations and Management Symposium (**APNOMS 2011**)	Taipei, Taiwan	**Reported** on this issue
11 Sept. - 14 Sept. 2011	Forth International Workshop on Wireless Distributed Networks (**WDN2011**)	Toronto, Canada	**Reported** on this issue
08 Aug. - 10 Aug. 2011	AsiaFI2011Summer School & Future Internet Architecture Workshop (**AsiaFI2011**)	Daejeon, Korea	Done
08 Aug. - 10 Aug. 2011	IEEE International Workshop on Electromagnetics: Applications and Student Innovation Competition (**IEEE iWEM2011**)	Taipei, Taiwan	Done
02 Aug. - 04 Aug. 2011	The 2011 International Conference on Advanced Technologies for Communications (**ATC2011**)	Da Nang City, Vietnam	**Reported** on this issue
31 Jul. – 05 Aug. 2011	International Geoscience and Remote Sensing Symposium 2011 (**IGARSS2011**)	Sendai, Japan	**Reported** on this issue
04 Jul. - 08 Jul. 2011	16th Opto-Electronics and Communications Conference (**OECC2011**)	Kaohsiung, Taiwan	**Reported** on this issue
04 Jul. 2011	16th Opto-Electronics and Communications Conference (**OECC2011-WSI**)	Kaohsiung, Taiwan	**Reported** on this issue
04 Jul. 2011	16th Opto-Electronics and Communications Conference (**OECC2011-WSII**)	Kaohsiung, Taiwan	Done

*: Please confirm with the following IEICE-CS web site for the latest information.
http://www.ieice.org/cs/conf/calendar.html

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

Membership for Overseas Candidates: Overseas Members may opt to join **one IEICE Society of their choice** and may request to **receive the IEICE Transactions of online version** of that Society. Furthermore, Overseas Members may request to receive the IEICE Journal(written in Japanese) and Transactions (published in paper) at an additional cost. Similar services are available to **Overseas Student Members.** Voting privileges in the IEICE election do not apply to Overseas Members. Note that the Overseas Membership applies only to candidates who reside outside of Japan and who have citizenship in countries other than Japan.

OMDP (Overseas Membership Development Program): OMDP is provided for candidates **from countries/areas in Asia(except Republic of Korea and Taiwan), Africa, Central America, and South America.** This program is designed so that IEICE can contribute to and support the progress of science and technology throughout the world. Scientists and engineers in these countries/areas are encouraged to apply to the program.

● **IEICE Societies and Publications**

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

● **Membership Charges (http://www.ieice.org/eng/member/OM-appli.html#c)**
Basic Membership Charge is as follows. It will change the term when you join IEICE. Please refer to the above website.

Basic Membership Charge   (UNIT : Japanese YEN)

Service coverage for overseas members	Admission charge	Online Version		Paper Version (optional)		
		Registration of the first society (includes its online version transactions)	Registration of additional societies (includes its online version transactions)	Journal (written in Japanese)	Transactions (written in Japanese or in English) (In one society)	
					One title	Two titles
Member (overseas)	1,400	7,000	3,500 / 1society	6,000	4,000	10,000
Member (overseas) with OMDP∗	1,000	5,000	3,000 / 1society	5,000		
Student member (overseas)	–	2,000	2,000 / 1society	6,000		
Student member (overseas) with OMDP∗	–	1,000	1,500 / 1society	5,000		

NOTE   **1. You need to choose one Society, and you can subscribe Transactions online of your registered society.**
*Example: If you want to subscribe to Transaction of EA, please check **Society Registration** as "A", and your membership fee amounts to 7,000 yen / 5,000 yen.*
2. If you want to register other Societies and Transaction of web version, please check "Additional Society registration".
*Example: If you want to subscribe to Transaction of EA and EB, please check **Society Registration** as "A", **Additional Society registration** (optional) as "B". Your membership fee amounts to 7,000+3,500 yen / 5,000+3,000 yen.*
3. If you want to subscribe to one Transaction of paper version,, please check "Additional Transaction subscription (published in paper)".
*Example: If you want to subscribe to Transaction of EC in paper version additionally, please check **Society Registration** as "A", and **Additional Transaction subscription (in paper version)** as "C" or as "EC". Your membership fee amounts to 7,000+4,000 yen / 5,000+4,500 yen.*
4. If you want to change membership from Member (In Japan) to Overseas Member, you don't need to pay an Entrance charge.

● **Optional Rapid Mailing Service**
Surface mail charge is included in the membership charge. Optional rapid mailing service is available by air mail or surface air lifted (SAL) mail. The additional charge per year periodical depends on the mailing address, as shown in the right table.

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

Please contact the IEICE Membership Section: E-mail:member@ieice.org   FAX: +81 3 3433 6659   *Please fill out the application form printed on the reverse side of this paper.* ➡

IEICE Overseas Membership Application Form

URL http://www.ieice.org/eng/member/OM-appli.html   **E-mail** member@ieice.org   **FAX** +81-3-3433-6659
◆ **Please type or print in English.** The deadline for submitting application form is <u>the 1st day of every month.</u>

Personal Information

☐Male
☐Female

Full name: _____   _____   _____   **Nationality:** _____
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 and Systems

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

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

Journal subscription (optional):   ☐(Japanese)

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

Admission charge…………………………¥_____   Journal subscription (optional)……………..¥ _____
Annual charge……………………………¥_____   Mailing option: ☐Air mail…...………………¥ _____
Additional Society (optional) …………… ¥_____   ☐SAL mail…………………¥ _____
Additional Transactions (optional)……....¥_____   **Total……………………………......……..¥** _____

Credit Card: ☐UC   ☐Master Card   ☐VISA   ☐JCB   ☐American Express

Card number: ☐☐☐☐ ☐☐☐☐ ☐☐☐☐ ☐☐☐☐

Expiry date: _____ / _____   Credit Card Holder: _____   Signature: _____
Year   Month

Endorsement *Endorsements by one IEICE 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

From Editor's Desk

● <u>Investment for the future</u>

The great east Japan earthquake caused severe damages to vast area along the pacific coast of Tohoku, northeast Japan. It accompanied the devastating Tsunami which has washed away myriad of cars, homes, and lives. However, in some cases, the farsighted preparations against Tsunami showed their full effectiveness, thus saved the towns and children. For example, a huge seawall having 15.5m height protected Fudai village. An emergency pathway equipped with Okirai primary school helped students to successfully escape from the approaching Tsunami.

No one can know whether such a natural disaster will occur in the future, furthermore constructing such facilities cause large financial burden. Thus it is not so easy especially for small communities to budget for such disaster measures, albeit the persons who have the foresight and courage of their convictions accomplished the projects. As a result, the disaster has unfortunately happened, but their facilities saved many people's life. Maybe the disaster has changed our way of thinking about investment for the future.

You can see information on "Tohoku University Recovery from the Great East Japan Earthquake" at the next page.

IEICE Global News Letter Editorial Staff

Editorial Staff of this issue

No special order is observed

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元気・前向き
Powerful Positive Tohoku University
東 北 大 学

Tohoku University
Recovery
from the Great East Japan Earthquake

Q&A

Q1 How much damage did Tohoku University suffer from the disaster?

### A1 90% of our buildings were not damaged.

Almost no buildings collapsed in the center of Sendai city. Utilities such as electric, gas and water supplies were damaged, but have been repaired.

**Inspection results
for Tohoku University buildings**

Unsafe: 28 buildings (About 4.7%)
Entry Restricted: 48 buildings (About 8.2%)
Confirmed Safe: 512 buildings (About 87.1%)

Facilities and equipment

Approximately 4,000 incidents of damage to facilities and equipment were found.
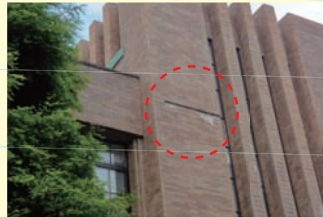
Some bricks fell off
the General Affairs building.

Tohoku University Centennial
Hall is in danger of collapsing.

Q2 What's the status of the restoration and reconstruction at Tohoku University?

A2 We have recovered enough to operate our education and research activities almost as usual.

Facilities and equipment which were undamaged are being shared among users whose facilities and equipment were damaged. In addition, we have asked the government to set a budget for reconstruction and a flexible system of budget implementation promptly. We are not only recovering our education and research environments, but also taking the disaster as an opportunity to improve them more than ever.
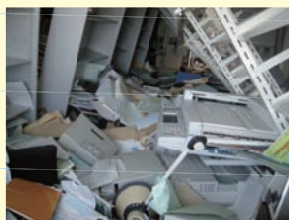
After the earthquake
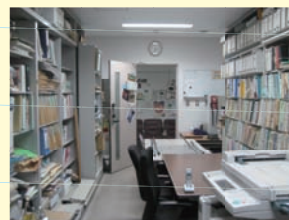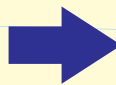
After restoration

Due to the disaster, each faculty held its own entrance ceremony on May 6th. On the next day, the Freshman Orientation was held at Kawauchi campus, and classes started on May 9th. Our education and research activities have resumed.

Each faculty held its own entrance
ceremony (School of medicine)
(May 2011)

Lecture (June 2011)

Research activity (June 2011)

Q3   Are there any problems with daily life in Sendai?

A3   Daily life goes on as usual in the Sendai city center.

In the areas of Sendai where Tohoku University campuses are located, damage from the disaster was light. Now utilities, the living environment (ex. apartments, hotels), and traffic environment, including public transportation, have been repaired. We can live our lives as usual.

Information about daily life (from the Miyagi Prefectural Government website)
http://www.pref.miyagi.jp/li.htm

Information about Sendai City Promotion (from the Sendai city website)
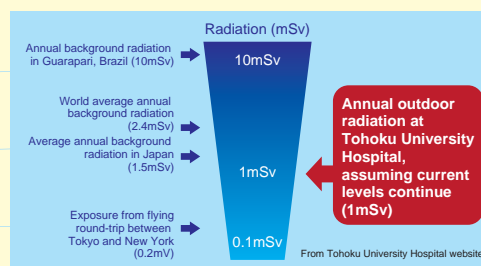http://www.city.sendai.jp/kikaku/kokusai/english/index.html

Sendai City view (June 2011)

Q4   What effect does radiation have on Sendai city?

A4   Now the radiation level in Sendai is less than half of the world average.

According to measurements in Sendai city (at Aoba, Aoba-ku, Sendai), where Tohoku University is located, the radiation level is approximately 0.09-0.10 µSv/h, as measured on May 17th. This value is the same as that in Shinjuku, Tokyo and 1.5-2.0 times higher than usual. This value is regarded as "having no effect on human health".

In addition, tap water and vegetables in Miyagi prefecture are being monitored. So far, no values exceeding standards have been measured.

Radiation (mSv)

Annual background radiation in Guarapari, Brazil (10mSv) → 10mSv

World average annual background radiation (2.4mSv) →
Average annual background radiation in Japan (1.5mSv) → 1mSv

Annual outdoor radiation at Tohoku University Hospital, assuming current levels continue (1mSv)

Exposure from flying round-trip between Tokyo and New York (0.2mV) → 0.1mSv

From Tohoku University Hospital website

Radiation Monitoring by Tohoku University   http://www.bureau.tohoku.ac.jp/anzen/monitoring/english.html

Radiation dosage measured in Miyagi Prefecture   http://www.pref.miyagi.jp/kokusai/en/accidents_fukushima_nuclear.htm

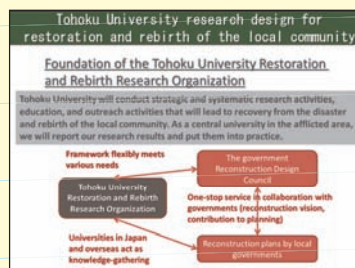## Q5   How is Tohoku University contributing to afflicted areas?

A5   Students and staff members are contributing in various ways.

Staff members from the Tohoku University Hospital and School of Medicine have devoted themselves to providing medical services in afflicted areas since March 11th. Student volunteers have also contributed to afflicted areas in various ways.

Tohoku University founded the Tohoku University Restoration and Rebirth Research Organization in order to conduct strategic and systematic research activities, education, and outreach activities that will lead to recovery from the disaster and rebirth of the local community. As a central university in the afflicted area, we will report our research results and put them into practice.

Activities by student volunteers

Activities by the Graduate School of Medicine   http://www.med.tohoku.ac.jp/english/emg/

Disaster countermeasures by Tohoku University Hospital   http://www.hosp.tohoku.ac.jp/release/index.php?e=558

Activities by the "HARU" student volunteer group   http://tohokugakuseifukko-e.blogspot.com/

Preliminary Call for Papers
APSITT 2012

Sponsored by Communications Society, IEICE

IEICE
Communications Society

9th Asia-Pacific Symposium on Information and Telecommunication Technologies
Nov. 5-9, 2012,   Santiago and Valparaíso, Republic of Chile

Conference Objectives

The objective of the conference is to offer the opportunity to exchange opinions among different countries in a co-operative atmosphere in the rapid changing information and telecommunication field. We aim toward the prosperity of Asia-Pacific region by presenting the opportunities of academic forum for mutual understanding and friendship among researchers and leaders in this region.

Schedules

Paper submission due: February 29, 2012 (NOTE1)
Notification of acceptance: May 15, 2012
Final Camera-ready due: June 15, 2012
NOTE1: Prospective authors are requested to submit either in the form of full-paper submission or abstract submission.

Technical Areas

The APSITT 2012 provides a forum for researchers and professionals to present their findings on the broad areas of information and telecommunications technologies. Technical papers are sought describing original works in the following but not limited to:

- Green ICT
- Mobile Applications/Services
- Wireless Networks
- Network Management
- Content Delivery
- P2P communication
- Service Development Technologies
- Ad-hoc Networks
- Network Security
- Post IP technologies

- Ubiquitous Applications/Services
- Multimedia Applications/Services
- Photonic/Optical Networks
- QoS Control and Management
- Switching and Routing
- Web based applications/Services
- Sustainability and Dependability
- Scale free Networks
- Network Analysis
- Implementation

- Internet Applications/Services
- IP Networks
- Network Architecture
- Traffic Control and Management
- Fundamental Theories
- Policy and Planning
- Resilient Networks
- Overlay Networks
- Next Generation Network
- Testbeds

Papers Submission

The APSITT 2012 is soliciting paper submissions in the form of full-paper submission and abstract submission as follows.

- Full-paper submission:
  Prospective authors are requested to submit a paper limited to maximum of six (6) papers, IEEE compatible PDF, written in English. Camera-ready copy is also limited to maximum of six (6) pages, IEEE compatible PDF. Accepted papers will be presented at selected sessions.
- Abstract submission:
  Prospective authors are requested to submit an extended abstract (one A4 page PDF with single column and 10 point font for body text) in English with your contact information. Camera-ready copy is limited to maximum of six (6) pages, IEEE compatible PDF.

Authors of best papers will be recommended to submit an extended version of their papers in IEICE transactions on communications.
Detailed submission process using the EDAS can be found on the conference web page.

Contact (Do Not Send Your Abstract)

APSITT 2012 Program Committee: E-mail: apsitt2012-submit@lab.ntt.co.jp

Please visit the conference web site for details: http://www.ieice.org/cs/in/APSITT/2012/