



Event

The 21st Meeting of APT Wireless Group in Thailand

The 21st Meeting of APT Wireless Group (AWG-21) was held as follows.

1. About the APT Wireless Group

APT (Asia-Pacific Telecommunity) Wireless Group is a meeting to study the harmonization and standardization of the frequency and technical matters of wireless communication systems in the Asia-Pacific region for the purpose of advancement, dissemination and promotion of wireless communication systems. It has been held usually about twice a year, and the experts of the wireless technology of each country in this region have joined the meeting. Dr. Kohei Satoh, Executive Manager on Standardization of ARIB has served as the chairman.

2. Outline of the Meeting

Schedule : From 3 to 7 April 2017

Venue : Centara Grand at Central World (Bangkok, Thailand)

Participants :

About 240 people from administrations, private organizations and international organizations in the Asia-Pacific region took part in the meeting.

As the Japanese delegation, 49 people headed by Ms. Amino, Deputy Director of the International Frequency Policy Office of MIC (Ministry of Internal Affairs and Communications) participated. From ARIB, Dr. Kohei Satoh and two other members participated.

3. Main results

In the APT Wireless Group, 3 working groups (WG) (frequency, technology and service / application) had been set. In each WG, sub working group or task group had been established for each issue, and consideration and deliberation was carried out.

The main results of the meeting were as follows.

(1) IMT (The 5th generation mobile communication systems, etc.)

Regarding the working document of the APT report on the usage survey of each country

concerning the WRC-19 Agenda 1.13, the 24.25-86 GHz band, the input contribution at the meeting was reflected. Although this report was scheduled to be completed at the meeting, it is decided to be enhanced for the 3rd APG meeting scheduled to be held in 2018, and requirement to extend the deadline and for further information update was circulated. Regarding the common bands specified by IMT at 6 GHz and below in WRC-15, frequency arrangement and band sharing is studied, and the working document was produced. For the frequency arrangement of 1427-1518 MHz, based on the input from Japan, the working document was updated and the circular for the usage survey of each country of the band was decided to be produced and sent.

(2) ITS (Intelligent transport systems)

Regarding the APT report that summarizes the introduction and usage of ITS in each country, the revision proposal was updated based on the proposal from Japan etc. This report revision proposal suggests sending a liaison to WP 5 A, and will be reflected as text on APT in ITU-R Report M. [ITS USAGE] under development in WP 5 A, and also referenced in WRC-19 agenda item 1.12 (Worldwide for ITS application Frequency harmony) in the future.

(3) Railway radio system

The APT report working document concerning WRC-19 Agenda Item 1.11 : Railway Radiocommunication System between Train and Trackside (RSTT) was updated based on the proposal from Japan etc. This working document is planned to be completed at the AWG-22 meeting, in which the workshop on RSTT was agreed to be held.

(4) WPT (Wireless Power Transmission)

A new APT report that summarizes trends of WPT services and applications in electrical appliances and automobiles was completed. In addition, the working document on the study of the frequency of Non-BEAM WPT for powering electric cars was updated, and is planned to be completed at the next AWG-22 meeting.

Also, as a matter related to the work method of AWG, a contribution on how to cooperate with ITU - R and APG was input from Korea. As a result of discussion in the Ad Hoc group established under the plenary the following policy was decided. For the items directly related to the agenda of WRC-19 (including those related to APT's viewpoint), AWG support APG on request, while continuing the necessary studies / input to ITU-R.

4. The next meeting schedule

The next AWG-22 meeting will be held on 25-29 September 2017 at Pusan, Korea.



Dr. Kohei Satoh as the Chairman



The 21th Meeting of APT Wireless Group

The 9th Study Group Meeting on Private wireless communication

The Study Group on Private wireless communication was established on April 2015 in order to provide a place to investigate worldwide as well as domestic technologies and usage trends of the private wireless communication, and study the enhancement of Private wireless communication.

On 20 April 2017, the 9th study group meeting was held attended by 72 people.

Following four presentations were given on the two theme.

Theme1 : The current status of Private wireless communication

- (1) "The current status of electric power smart meter" by Tokyo Electric Power Grid Co., Ltd.

Theme2 : Summary of the activities in FY2016

- (2) "Activity Summary (Fiscal Year 2016) (Technical Aspect)" by the Chairman
- (3) "Summary of activities in FY2016 (Institution, Economic Aspects)" the Vice Chairman
- (4) "Studies at Shared Use WG" by the Deputy Director of Shared Use WG After the presentation, lively free discussion was held.



The 9th Study Group Meeting on Private wireless communication

The 3rd Meeting with Brazilian SBTVD Forum

The 3rd regular meeting between ARIB/DiBEG and the SBTVD Forum was held on April 26, 2017 at the Las Vegas Convention Center.

The Brazilian side consisted of total 8 members; Mr. José Marcelo do Amaral, President, SBTVD Forum, Mr. Roberto Franco, member of SBTVD Board of Directors, and 4 other representatives from SBTVD Forum, Ms. Liliana Nakonechnyj, President, Sociedade Brasileira de Engenharia de Televisão (SET), and Mr. Olímpio José Franco, General Superintendent of SET.

The Japanese side was comprised of Dr. M. Sugawara, Chairman of DiBEG, Mr. K. Murayama, Chairman of Task Force for Next Generation Broadcasting System, and Mr. Y. Homma, Vice Director General, R&D Headquarters, ARIB.

ARIB/DiBEG and SBTVD Forum have been continuing regular meetings almost once every 6 months, to strengthen mutual ties for the promotion of ISDB-T.

This time, at the occasion of the NAB Show 2017 held in Las Vegas, Nevada, USA, both parties got together there to hold the 3rd regular meeting.

At the start of the meeting, Mr. J. Marcelo, newly elected President, introduced himself to the participants; followed by the exchange of the latest information on the activities of each of the organizations.

Japan also explained its recent activities of support and cooperation toward those ISDB-T adopting countries including El Salvador, as well as the latest development status of the 4K/8K broadcasting, etc. On the other hand Brazil explained the situation of Analog Switch-Off execution in Sao Paulo, the largest city of Brazil, in March this year, and also explained the latest status of the study of next generation broadcasting services in Brazil.

Then both parties worked together to update the joint document compiling the differences between the Japanese and Brazilian ISDB-T standards; and it was mutually confirmed that Brazil would make revision proposal to the Japan's proposal of revision, and that the joint works would continue further on.

Both parties also exchanged information and opinions on the promotion of EWBS (Emergency Warning Broadcast System) toward the Latin American region, and also agreed to start the joint study on the possibility of harmonization in the coordination of Integrated Broadcast-Broadband Services between Ginga of Brazil and Hybridcast of Japan.

They both agreed to have the next meeting at the occasion of the SET EXPO 2017 in Sao Paulo in August this year.



Atmosphere of Meeting

The 6th Japan–Botswana JWG Meeting in Botswana

The 6th Japan–Botswana Joint Working Group Meeting was held in Gaborone, Botswana on April 26, 2017 at the headquarters of Department of Broadcasting Services (DBS).

The Botswanan side was headed by Mr. Bome Matshaba, Deputy Permanent Secretary, Information & Broadcasting, State President, consisting of 23 members of the representatives of Botswana Communications Regulatory Authority (BOCRA), Botswana Television (BTV), and the Set-top Box (STB) manufacturers in Botswana. The Japanese delegation consisted of 15 members, including Mr. M. Onishi, Ambassador Extraordinary and Plenipotentiary of Japan to the Republic of Botswana Mr. S. Takagi, Director-General for International Affairs, Global ICT Strategy Bureau of MIC, representatives from Japan International Cooperation Agency (JICA) Botswana Office, Japanese manufacturers and ARIB.

In February 2013 Botswana decided to adopt ISDB-T as its national digital terrestrial television standard, the first country in the African region. For the purpose of technical assistance and cooperation for the introduction of ISDB-T into Botswana, the two governments have had regular joint working group meetings.

Botswana has already started ISDB-T broadcasting, with BTV's nationwide service coverage almost complete.

At the meeting the Botswanan side explained its future planning on digital TV broadcasting; now that the nationwide terrestrial digital TV network almost complete, the next mission would be to tackle ASO (Analog Switch-Off) to execute from January, 2018 onward, after some trial ASO in a limited region. Also they explained that some of the Botswanan domestic manufacturers are starting their preparations for the manufacture of STB products, and that they solicited public entries for new licensing to private broadcasters.

The Japanese delegation introduced their experiences in the PR activities toward the general public before the ASO execution in Japan, and also explained the current implementation status of the next generation broadcasting services such as 4K/8K broadcasting and the Hybridcast which is the Integrated Broadcast-Broadband service in Japan. During the meeting they also performed a demonstration of the EWBS (Emergency Warning Broadcast System) by using ISDB-T receiver products; and proposed to the Botswanan side that a pilot project of EWBS functionality would better be included in the trial of the ASO in Botswana.

The next Joint Working Group meeting would be held in Japan, duly in consideration of the time frame of the trial of ASO in Botswana.



Atmosphere of Meeting



EWBS Demonstration during the JWG Meeting

The 49th CJK IMT WG Meeting in Japan

CJK IMT Working Group Meeting is aiming to exchange information and views about the activities of international IMT standardizations in ITU-R, APT, 3GPPs, and so on, among members of SDOs in China, Japan and South Korea.

1. Outline of the Meeting

Date: From 9 to 10, May 2017

Location: Fukuoka, Japan

Participants:

10 members from ARIB, 9 members from CCSA (China) and 9 members from TTA (South Korea), as members of each country's standardization organization.

2. Main Results of the Meeting

The result of the 21st meeting of the Asia-Pacific Telecommunications Community Radio Group (AWG-21) held in April and the 26th ITU-R SG5 Working Party 5D (WP5D) meeting held in February, each SDO Activity report, and discussion status in 3GPP were shared.

The information was shared on the document contributed to ITU-R Task Group 5/1 2nd meeting to be held on 15 May 2016.

The progress of preparation for the 27th WP5D meeting is shared, and it was decided that SDOs proceed to co-authorship of 4 contributing documents, based on the activities of the three Special Interest Group (SIG-Spectrum, SIG-Evaluation, SIG-Requirement). Since Agenda Items were completed at SIG-Requirement, it was decided that the next issues are to be discussed including the establishment of a new SIG.

3. Next meeting schedule

The next CJK IMT Working Group Meeting was scheduled on 4 and 5 September 2017 in China.



The 49th CJK IMT WG Meeting

RTCM Annual General Meeting 2017 / NOAA BMW Meeting 2017 in US

RTCM (Radio Technical Commission for Maritime Services) is a standards body related to maritime radio in the United States, and in particular, it produces de facto standard in the field of beacon for COSPAS-SARSAT.

ARIB attended the annual general meeting of RTCM to investigate the information on the beacon standards and the situation in the US regarding maritime communication, and also attended the manufacturer's meeting (BMW: Beacon Manufacturers Workshop) set by NOAA (US National Oceanic and Atmospheric Administration) which is the administrator of the SARSAT satellite, to explain the problem of the dual ID of EPIRB-AIS that Japan pointed out at IMO's NCSR 4 meeting (held in March this year).

The plan in which the proposed countermeasure to the problem would be revealed at the ICAO / IMO JWG 24 meeting (to be held in October 2017) got understanding.



Presentation at the Meeting

The 2nd meeting of the ITU-R TG5/1 in Geneva

The 2nd meeting of the ITU-R TG5/1 was held at the ITU headquarters (Geneva, Switzerland) from 23 to 24 May 2017.

TG 5/1 is responsible for the development of draft CPM text under WRC-19 Agenda item 1.13 (Addition of mobile service in the 24.25-86 GHz band for future IMT development), and frequency sharing between radiosystems is studied there.

1. Outline of the Meeting

Schedule : From 15 to 23 May 2017

Venue : ITU headquarters (Geneva, Switzerland)

Participants :

About 250 people from each country's Administration, Operator, Vendor, etc.

As the Japanese delegation, 12 people headed by Mr. Takeda of MIC participated. Mr. Nishioka and Mr. Kato participated from ARIB.

2. Main results

(1) Establishment of sub-working group, drafting group, ad hoc group

- Under the 30 GHz band and the 40/50 GHz band WG, which includes a wide range of deliberations, Subordinate organization (SWG: Sub-Working Group, DG: Drafting Group) was established to study the agenda in accordance with the frequency band and applications (science, fixed satellites, etc.).
- Mr. Hiroyuki Atarashi (NTT docomo) from Japan was elected chairman of SWG 32GHz.

(2) Study of possibility of frequency sharing with existing applications in each band

- Entry concerning frequency sharing of IMT-2020 and existing applications was made from each country or sector members.
- Although revision of the study item list and prioritization of frequency band were proposed from the United States, Russia, and the Arab countries, etc., it was decided that study of frequency band sharing should be conducted in order of the input documents.
- Working documents of CPM text draft and result of the study were made at each WG and SWG, etc.,
- It was agreed that the liaison documents requesting further information regarding parameters provided by each WP will be issued.

3. Next meeting schedule

The next TG5/1 meeting is planned to be held from 20 to 29 September 2017 in UAE.



The 2nd meeting of the ITU-R TG5/1

The 3rd Global 5G Event in Tokyo

"The Global 5G Event" is based on a Multi-Lateral MoU to cooperate on building global consensus on 5G with world's 5G promotion organizations. The event is held twice a year in rotation.

The 3rd event was organized by the MIC, and the workshop and 5G exhibition were held as follows.

In addition, as a program targeted at overseas participants, the "5G Technical Tour" to visit operators trial sights was carried out, and favorable reviews from participants were given.

1. Outline of the Event

Workshop

Date: From 24 to 25 May 2017

Location: Hilton Tokyo ODAIBA, Japan

Exhibition (Wireless Technology Park)

Date: From 24 to 26 May 2017

Location: Tokyo Big Sight, Japan

2. Overview of the Workshop

In this workshop, presentations and panel discussions were held according to the theme of each session based on "Creating the Crossover Collaboration for 5G Eco-Society" as a whole theme. Approximately 700 experts from Japanese government officials, telecommunications operators, manufacturers, universities and research institutions, including overseas participants, participated.

Also, after the end of the session on the first day, a signing ceremony for participation of "Tele Brazil - Project 5G Brazil" in the multi-lateral memorandum of understanding (MoU) was held.

(1) Opening Ceremony

At welcome greetings, Jiro Akama, State Minister for Internal Affairs and Communication, introduced 5G initiatives in Japan, along with the Tokyo Olympic and Paralympic Games.

Next, 5GMF President, and Kyoto University Emeritus Professor Susumu Yoshida delivered keynote speech, explaining about a whole theme and expressing expectation for the workshop.

(2) Opening Session

Two opening sessions took place with government officials and 5 G promotion organization officials. In the first session, Isao Sugino, manager of the Mobile Communications Division of the MIC, and Mr. Hiroyuki Morikawa, Planning Committee of the 5GMF (Tokyo University) in the second session, served as a moderator. In the both session, the importance of information exchange and cooperation with government, promotion organization, stakeholders, etc. was pointed out, and it was confirmed that such activities should be continued through workshops and others.

(3) Theme sessions

The following themes were given for each session, 1) international coordination for frequency assignment, 2) implementation plan, 3) possibility of cooperation in demonstration experiment, 4) establishment of cooperative relationship with related industries, and 5) Security in 5G as a special session for this occasion. Active discussions were held.

(4) Closing Ceremony

From the 5G Forum of Korea, it was declared that the next 4th event would be held in Seoul, 22-24 November 2017.

Finally Kouhei Satoh, 5GMF Secretary General (ARIB) gave closing address with thanks to the MIC, Supporting Organizations and related persons.

3. Outline of 5G exhibition

5G exhibition booth was set up for this event in Wireless Technology Park (WTP) 2017 held in Odaiba at the same time as the workshop. At the booth, efforts of promoting 5G by the MIC, the introduction of 5GMF, the 5G MiEdge project (radio field), 5G! Pagoda Project (network field) which are the research and development issues on 5G of the Strategic Information and Communication R&D enterprise. A large number of visitors, some of them deeply involved in Q&A, were seen.



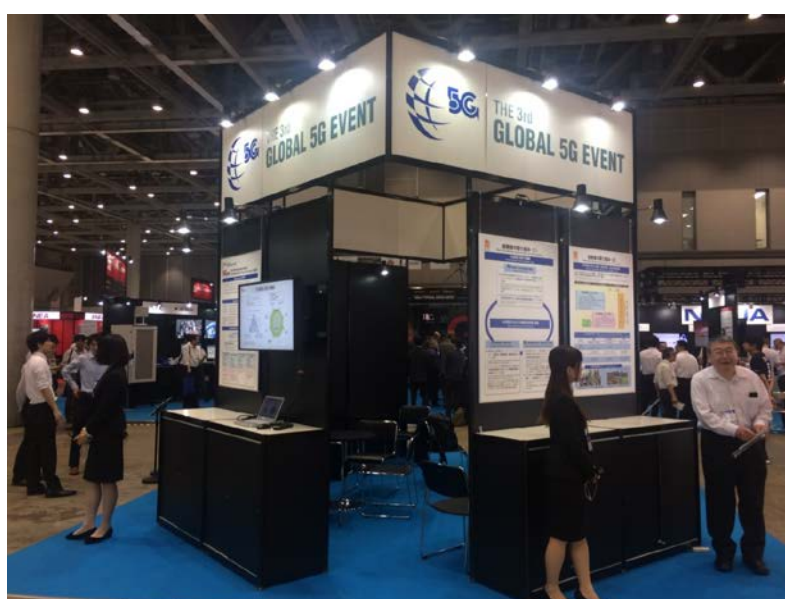
Jiro Akama
State Minister for Internal Affairs
and Communication



Prof. Susumu Yoshida
Chairman, 5GMF



The 3rd Global 5G Event



5G exhibition in WTP

Radio Day Memorial Lecture

"Radio Day Memorial Lecture" was held in Tokyo on 29 May 2016. This event was co-organized by ARIB and the Council for Info-Communications Promotion Month, and supported by the MIC.

Main theme of the Lecture was "Current status and future prospects of radio wave usage". The program of the Lecture was as follows.

1. Information communication infrastructure and radio waves for the 2020s
Mr. Masahiko Tominaga, Director of Telecommunications Bureau, MIC
2. Toward Realization of a Prosperous Society Supported by ICT
Mr. Masamichi Shinohara, Executive Vice President of NIPPON TELEGRAPH AND TELEPHONE CORPORATION
3. Current status and future prospect of V-Low multimedia broadcasting (i-dio)
Mr. Hirohiko Umemoto, Managing Director of Japan Multimedia Broadcasting Co., Ltd.
4. Efforts and challenges toward the full spread of IoT
Mr. Akio Hosono, Managing Director of I-O DATA DEVICE, INC.



Radio Day Memorial Lecture



Mr. Tominaga
(MIC)



Mr. Shinohara
(NTT)



Mr. Umemoto
(Japam Multimedia
Broadcasting)



Mr. Hosono
(I-O DATA
DEVICE)

The lectures included the usage of radio waves and prospect of usage environment towards 2020 when the Tokyo Olympic and the Paralympic Games are held, the current trends and efforts of each industries coping with the evolution of networks and technologies, issues to be addressed for the next generation, etc. , and presented from the top viewpoint of each field, based on abundant data, and were concrete and easy-to-understand. The audience listened intently to the lectures.

The 7th Annual General Meeting of ARIB

The 7th Annual General Meeting of ARIB was held on 15 June 2017, at the Hotel New Otani, Tokyo.

Business report of the fiscal year 2016, balance sheet and election of officers and Management Advisory Committee had been discussed and approved.



The 7th Annual General Meeting of ARIB

The 28th Radio Achievement Award

The 28th Radio Achievement Award ceremony was held on 15 June 2017, just after the 7th Annual General Meeting of ARIB. This award is presented every year by the Minister of Internal Affairs and Communications and the Chairman of the Board of ARIB to individuals and groups who have made a significant achievement relating to effective and proper use of radio wave.

This year's winners are as follows.

1. The Award of the Minister of Internal Affairs and Communications

- (1) "Commercialization of super high speed / large capacity LTE-Advanced system using FDD / TDD carrier aggregation technology"
NTT DOCOMO, INC., KDDI CORPORATION
- (2) "Promotion of frequency transition accompanying termination promotion measures in

the 700 MHz band"

Japan Broadcasting Corporation, NIPPON TELEVISION NETWORK CORPORATION,
TV Asahi Corporation, TBS Television, Inc., TV TOKYO Corporation, Fuji Television
Network, Inc.

- (3) "Contribution to adoption and smooth introduction of Terrestrial Digital Television
Broadcasting System (ISDB-T) in Brazil and international dissemination of the system"
Sociedade Brasileira de Engenharia de Televisão

2. The Award of the Chairman of the Board of ARIB

- (1) "Research and development of terahertz radio wave transmission technology"
NIPPON TELEGRAPH AND TELEPHONE CORPORATION,
FUJITSU LABORATORIES LTD.,
The National Institute of Information and Communications Technology
- (2) "Development and commercialization of integrated coastal radio stations for 27 MHz
band for coastal fisheries"
FURUNO ELECTRIC CO., LTD.
- (3) "Development of digital FM modulator and commercialization of FM synchronized
broadcasting system"
Yamaguchi Broadcasting Co. Ltd., Japan Communication Equipment Co., Ltd.,
NHK Integrated Technology Inc.
- (4) "Development of 2K H.265 CODEC for FPU"
NEC Corporation
- (5) "World first commercialization by establishing a new method of VoLTE roaming"
NTT DOCOMO, INC.
- (6) "Commercialization of duct interference canceller for 930 MHz band Multi Channel
Access (MCA) service"
SoftBank Corp., Mobile Radio Center



Commemorative photo with winners

The 27th ITU-R WP5D Meeting in Canada

ITU-R WP5D 27th meeting was held as follows.

1. Outline of the Meeting

Schedule : From 13 to 21 June 2017

Venue : Marriott on the Falls (Niagara Falls, Canada)

Participants :

Approximately 203 people from 33 organizations from 34 countries participated. As the Japanese delegation, 18 people headed by Ms. Yamauchi of MIC. Three persons headed by Mr. Nishioka participated from ARIB.

2. Main results at the meeting:

- (1) Discussion of parameters used for evaluation, test environment and channel model for the evaluation method of IMT-2020 (5G) air interface was made, and all evaluation methods were agreed on including high speed mobile environment which was the continuation study subject from the previous time, LMLC (Low Mobility Large Cell). The document was finalized and adopted as a new recommendation draft M.[IMT-2020.EVAL] at the WP 5D plenary, and was sent to SG5.
- (2) For the new recommendation draft M.[IMT-2020.SUBMISSION] that specifies the proposal method of the IMT-2020 radio interface, all the contents including the frequency requirement were agreed on. The document was finalized, adopted at the WP 5D plenary, and was sent to SG5.
- (3) The liaison document notifying the completion of Supplement 3 of IMT-2020/2 was decided to be sent to organizations outside ITU (5GMM, 5GIC, 3GPP, ARIB, TCOE India etc.). Supplement 3 of IMT-2020/2 notifies completion of M.[IMT-2020.EVAL], M.[IMT-2020.SUBMISSION], and gives information on the IMT-2020 workshop to be held in October (draft program, application for presentation, etc.) are provided.
- (4) Some part of the contribution document from Japan which is related to entertainment, arbitrary view point video, augmented reality input to the new recommendation draft M.[IMT.BY.INDUSTRIES] (related to terrestrial IMT system) are used to expand the content of report M.2373 (report on audio and video capabilities and applications supported by the terrestrial IMT system), and the rest was almost reflected in M.[IMT.BY.INDUSTRIES].
- (5) The WP5D scheme in which WRC-19 Agenda Item 9.1 and 9.1.8 (related to the technical and operating condition of Machine Type Communications) are studied was discussed at the plenary meeting, and it was agreed that WG GEN was responsible for creating a

new recommendation draft and CPM text draft for AI 9.1.8 co-working with WG SPEC and WG TECH. AH MTC was organized under the WG GEN.

- (6) Regarding the revision of ITU-R M.1036-5, in which the frequency arrangement had been under discussion, agreement was reached to draft a recommendation without describing the adoption expectancy.
- (7) The schedule for the 31st WP5D meeting to be held in Japan was changed to from 9 to 16 October 2018.

3. Next meeting schedule

The next WP5D (the 28th) meeting is planned to be held from 3 to 11 October 2017 in Munich, Germany.



The 27th ITU-R WP5D Meeting

Digital Terrestrial TV Seminar in El Salvador

The Digital Terrestrial TV Seminar was held in San Salvador, the capital city of El Salvador on June 27 and 28. More than 100 people participated in the Seminar, from Superintendencia General de Electricidad y Telecomunicaciones (SIGET), and other government bodies, Televisión de El Salvador (TVES, national TV), private broadcasting companies, etc.

About 20 people from Japan participated in the Seminar as a Japanese delegation, including Mr. M. Terahara, Ambassador Extraordinary and Plenipotentiary of Japan to the Republic of El Salvador, Mr. H. Ogawa, Director for Digital Broadcasting Technology of MIC and several MIC representatives, Dr. M. Sugawara, Chairman of Digital Broadcasting Experts Group (DiBEG), and some representatives from ARIB/DiBEG member companies and the secretariat.

El Salvador decided to adopt ISDB-T as its national digital terrestrial TV standard in January this year, the 19th country, including Japan, adopting the standard. In March MIC invited Ms. Blanca Noemi Coto Estrada, Superintendente-Directora Presidenta of SIGET to Japan to offer information and to exchange views and opinions on ISDB-T. Then in May Ms. M. Kaneko, Parliamentary Vice-Minister of Internal Affairs and Communications, paid an official visit to El Salvador, and signed the agreement on the support and cooperation on ISDB-T, which included holding a seminar on ISDB-T. And this time, based on the agreement, the Seminar was held in San Salvador; and ARIB/DiBEG decided to dispatch its representatives for the seminar as presenters and exhibitors.

At the Seminar opening, Ms. Coto kindly made a welcome speech to the Japanese delegation, appreciating that many experts came all the way from Japan to El Salvador for this Seminar. Following the welcome speech by Ms. Coto, Mr. Carlos Eduardo Valle, Gerente de Telecomunicaciones of SIGET, made a detailed presentation on the latest status of their digital terrestrial TV implementation, in which he mentioned that as of June 1st they started a trial digital TV project, with multi-program and one-segment configuration, that they are working on the master plan for the migration to digital terrestrial television; that they are intending to put commercial broadcasting service into operation as early as January, 2018, and also that they are studying the possibility of allowing new entrants in TV broadcasting service in the migration to digital TV.

Representing the Japanese part, Mr. H. Ogawa of MIC presented experiences of Japan in the digital terrestrial TV implementation, followed by Mr. M. Sugawara of DiBEG and DiBEG member company representatives (from Hitachi Kokusai Linear, NHK ITEC, SONY, Maspro Denkoh) and the secretariat, each presenting explanations on the outline of ISDB-T, signal transmission/distribution technologies, EWBS, studio equipment and systems, TV receiving products, and international promotional activities of DiBEG.

At the closing of each presentation there was an active Q&A session, in regards to multi-programming in other ISDB-T adopting countries, one-segment diffusion status in Japan, pricing of EWBS display device, etc., which seemed to be in preparation for the commercial broadcasting service of ISDB-T soon.



Seminar Hall during the ISDB-T Broadcasting Technology Seminar

In parallel to the Seminar, there were demonstrations and exhibitions by SIGET and DiBEG member companies (Seminar participating companies and NEC), including the receiving demonstration by SIGET of live broadcasting of ISDB-T test transmission. At the DiBEG member exhibition booths there were various inquiries and consultations on the introduction of new equipment and systems to prepare for digital TV; and also the demonstration of indoor flat panel antenna and the EWBS display device attracted strong attention of the Seminar participants.



Reception of Trial ISDB-T Broadcast by SIGET

Frequency Resource Development Symposium 2017

"Frequency Resource Development Symposium 2017" on the theme of "New approach to wireless IoT" was held in Tokyo on 30 June 2017. The event was co-organized by the Association of Radio Industries and Businesses (ARIB) and the National Institute of Information and Communications Technology (NICT), supported by the MIC.

Towards 2020 and to the future society ahead of that, Japan plans to create "new value-added industry" as an ICT growth strategy. And by connecting a huge variety of and enormous amounts of data with each other rapidly, we are promoting many initiatives by industry, academia and government together to create new businesses and markets, and to increase the international competitiveness of ICT related industries. In particular, wireless technology is positioned as a core technology for quickly connecting a huge

number of IoT devices, and in order to provide appropriate communication speed, flexibility and reliability according to usage scenes, new usage of radiowave is expected. At this symposium, lectures were given by industry, academia and government experts for the purpose of exploring the possibility of new usage of wireless technology in IoT society of 5G era.



Frequency Resources Development symposium 2017

The program was as follows.

1. Trend in recent radio policy

Mr. Yasuo Tawara, Director of Radio Policy Division, Telecommunications Bureau, MIC

2. The new wireless world driven by IoT

Prof. Hiroyuki Morikawa, Tokyo University

3. Value added by wireless IoT and Outlook for 5G era

Mr. Naoki Tani, NTT DoCoMo

4. A new experience brought by VR × Wireless

Prof. Yasushi Ikei, Tokyo Metropolitan University Graduate School

5. Trend of healthcare IoT in Europe focused on aging Society and initiatives in Denmark

Mr. Kensuke Nakajima, Embassy of Kingdom of Denmark in Tokyo

6. Efforts concerning high-level utilization of wireless systems supporting IoT

Dr. Toshihide Kojima, National Institute of Information and Communication Technology (NICT)



**Mr. Tawara
(MIC)**



**Prof. Morikawa
(Tokyo Univ.)**



**Mr. Tani
(NTT DOCOMO)**



Prof. Ikei
(Tokyo Metropolitan Univ.)



Mr. Nakajima
(Embassy of Kingdom
of Denmark)



Dr. Kojima
(NICT)

Monthly seminars on radio wave use

No.149	13 April 2017
Title	Global trends seen in MWC-2017 * Jointly organized with Telecommunication Technology Committee
Speaker	Mr. Yoshiya Iribe XGP Forum Mr. Motoi Tamura NTT DOCOMO Mr. Shinya Kukita NEC Corporation
Summary	In the lecture, remarkable technologies, products and products introduced at the Mobile World Congress (MWC), the world's largest mobile-related event held in Barcelona, Spain from 27 February to 2 March 2017 were introduced, and the trends of the service and application and the contents of the exhibition were explained clearly.
No.150	6 June 2017
Title	Efforts toward realization of 5G
Speaker	Mr. Yuji Nakamura Director of New Generation Mobile Communication System Promotion Office, MIC
Summary	Mr. Nakamura gave a brief explanation of the 5th generation mobile communication system (5G) from the outline, and explained about the efforts of the MIC for the early realization of 5G and the Connected Car as an example of utilization of 5G.



Association of Radio Industries and Businesses

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