

Newsletter ARIB SEASON



Event

The 17th APT Wireless Group Meeting

The 17th APT Wireless Group Meeting (AWG-17) was held from 23 to 26 September 2014 in Macau, China. About 210 participants from 22 countries attended the meeting. Participants from Japan counted 44 including 4 from ARIB. Objective of the meeting was to study and exchange information for the advancement of a wireless system and to promote it in the Asia-Pacific region.

1 Results of the Meeting

AWG consists of three working groups (WG) to study frequency, technology and service applications under the Plenary. Dr. Kohei Satoh (Managing Director of ARIB), Vice-Chair of AWG, chaired the meeting.

Results include the follows.

- The survey report about the fixed wireless system was created and approved. Drafting of the new Report on the fixed wireless technology in APT region was also started.
- The survey report about WRC-15 agenda 1.1 (identification of additional frequency bands for IMT) was created and approved.
- Regarding Short Range Device (SRD), based on the proposal from Japan, a study on short-range wireless communication system using 275GHz and higher was decided to start.
- A report on the service scenario and the use case of the wireless power transmission technology was decided to create.
- Regarding ITS, drafting of the report on the road sensor networks was in progress.
- It was agreed to hold the 5G workshop at the next meeting by inviting organizations that conduct the study on the fifth-generation mobile communications.

2 Election of the Chairman and Vice-Chairman of the next term

Dr. Kohei Satoh, Managing Director of ARIB was elected as AWG chairman and Ms. Zhu Keer from China and Mr. Le Van Tuan from Vietnam were elected as AWG vice-chair.

3 Next Meeting

The 18th AWG meeting will be held in March 2015 in Kyoto, Japan.

The Fifth Generation Mobile Communications Promotion Forum (5GMF)

The foundation assembly of "The Fifth Generation Mobile Communications Promotion Forum" (5GMF) to aim to realize the fifth generation mobile communication system after 2020 was held in Tokyo on Tuesday 30 September 2014. After the assembly, the foundation commemorative ceremony followed.

125 participants from 42 companies (telecommunications operators and communications equipment manufacturers), research institutions including universities, and the Ministry of Internal Affairs and Communications were attended to the foundation assembly.

Dr. Susumu Yoshida, emeritus professor of Kyoto University was elected as chairman and Dr. Masao Sakauchi, President of National Institute of Information and Communications Technology (NICT) and Dr. Hiromichi Shinohara, Senior Vice President of Nippon Telegraph and Telephone Corporation (NTT) were elected as vice-chairman.

It was approved to establish planning committee, technical committee, application committee and network committee under this forum.

The foundation commemorative ceremony with the participation of about 160 people was held following the organization meeting.

Mr. Nishime, Senior Vice-Minister for Internal Affairs and Communications gave a congratulatory address to participants.



Dr. Susumu Yoshida



Dr. Masao Sakauchi



Dr. Hiromichi Shinohara



Foundation assembly of 5GMF



Mr. Nishime, Senior Vice-Minister for Internal Affairs and Communications



Foundation commemorative ceremony of 5GMF

International Workshop on 5G Mobile Communications Systems 2014



International Workshop on 5G Mobile Communications Systems 2014

On Wednesday 8 October 2014, "the International Workshop on 5G Mobile Communications Systems 2014" organized by Ministry of Internal Affairs and Communications and sponsored by ITU was held at CEATEC JAPAN 2014 at Makuhari Messe with about 600 audiences.

In this workshop, speakers from Japan, Europe, China, and South Korea, have presented concept and outlook of services, and technology of the fifth-generation mobile communication.

The following presentations were made.

(1) "Activities of 5GPPP"

Dr. Werner Mohr (Nokia), Chair of the Board of the 5G Infrastructure Association, 5G Public-Private Partnership (5GPPP), EU

(2) "IMT-2020 (5G) Promotion Association Activities"

Ms. Zhiqin Wang (CATR), Vice Chairman of IMT-2020 (5G) Promotion Association, China

(3) "Service requirements and enabling technologies for 5G"

Prof. Younghan Han (KAIST), Chairman of Steering Committee, 5G Forum, Korea

(4) "Activities of ARIB 2020 and Beyond Ad Hoc"

Mr. Takehiro Nakamura (NTT DOCOMO), Leader of ARIB 2020 and Beyond AdHoc, Japan

After that, a panel discussion was held by speakers who exchanged views on the development of future trends and standardization of the fifth-generation mobile communication.



Mr. Gaku Hasegawa
Parliamentary Vice-Minister
for Internal Affairs and
Communications



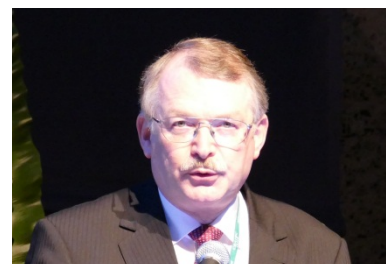
Mr. Colin Langtry
Chief, Study Group Department,
Radiocommunication Bureau,
International Telecommunication
Union



Dr. Susumu Yoshida
Chairman of 5G
Workshop-2014 Organizing
Committee
(Professor Emeritus, Kyoto
University)



Dr. Hakan Ohlson
Vice Chairman, ITU-R
Working Party 5D
(Ericsson)



Dr. Werner Mohr
Chair of the Board of The
5G Infrastructure
Association, 5G
Public-Private Partnership
(5G PPP)



Ms. Zhiqin Wang
Vice Chairman, IMT-2020
(5G) Promotion
Association, China



Prof. Youngnam Han
Chairman of Steering
Committee, 5G Forum, Korea



Mr. Takehiro Nakamura
Leader, ARIB 2020 and
Beyond AdHoc



Mr. Waichi Sekiguchi
Moderator of Panel Discussion
Editorial Writer (Nikkei Inc.)

Participation in the CEATEC JAPAN 2014



CEATEC JAPAN 2014 ARIB booth

From October 7 through 11, CEATEC JAPAN 2014 was held at Makuhari Messe in Japan, where ARIB participated to exhibit promotional state-of-the-art ICT/electronics comprehensive activities.

ARIB exhibited the following in the booth and welcomed 950 visitors.

- Introduction of outline of ARIB, research and development activities, and international cooperation activity.

- Introduction of technologies and systems which won the 25th Radio Achievement Award.

ARIB also held a seminar to give a lecture on "Standardization trend of a new technology in the communication and the broadcasting field" by Mr. Amemiya, a director of Planning and International Affairs Department of ARIB.

Seminar on ISDB-T international activity

Seminar on ISDB-T international activity was held on 26 October at ARIB meeting room with 50 participants.

Title: The current status and future prospects of digital TV in Peru and Costa Rica

Speaker: Mr. K. Hirose of NHK (Japan Broadcasting Corporation), who had worked for Peru as JICA(Japan International Cooperation Agency) Engineering Support Adviser

Mr. Y. Yoshimi of NHK, who had worked for Costa Rica as JICA Engineering Support Adviser

Summary: The seminar covers supporting activity including implementation of ISDB-T nationwide, engineering guidance, human resources development in Peru and Costa Rica, and development of ISDB-T International Harmonization Document EWBS (Emergency Warning Broadcast System).



DiBEG* Seminar

*Digital Broadcasting Experts Group

Participation in the InterBEE2014

From November 19 through 21 2014, 50th InterBEE (International Broadcast Equipment and Exhibition) 2014 was held at Makuhari Messe in Japan, where ARIB participated in the exhibition to promote ISDB-T worldwide.

At the ARIB booth we introduced the recent standardization activities in the field of broadcasting, together with the international promotion of the ISDB-T, by using some panels and pamphlets.

Many visitors to the ARIB booth showed strong interests in the on-going standardization activities on UHDTV.



ARIB/DiBEG booth



Pamphlet

<p>APT Training Course 2014 in ARIB</p> <p>"Actions for Next Generation Mobile Communication Systems in Japan"</p>
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From November 26 through December 4, APT (Asia-Pacific Telecommunity) training "Actions for Next Generation Mobile Communication Systems in Japan" (co-organized by Ministry of Internal Affairs and Communications (MIC) and YRP R & D Promotion Association, sponsored by ARIB) was held with nine trainees from the government of the Asia-Pacific region of nine countries (Bangladesh, Bhutan, China, Mongolia, Myanmar, Palau, Sri Lanka, Thailand, Vietnam).

In this training program, lectures from ARIB and country reports presentation from each of the trainees were conducted on November 27.

Lectures from ARIB included the following.

(1) "ARIB and Standard"

Mr. Tadaaki Yokoo, Executive Director of ARIB

(2) "Update on 5G Research in Japan"

Mr. Akira Matsunaga, Senior Director, R&D Strategy Division, Technology Sector, KDDI Corporation

(3) "Recent Activities of IMT-Advanced Standardization"

Dr. Kohei Satoh, Managing Director of ARIB

In the afternoon, the country report presentation by nine trainees was held, their organizational structure, current status of frequency assignment, mobile communications policy and mobile communication development were introduced.

MIC and 6 ARIB members joined this session to exchange views and information.

The presentation showed that the service of 3G was rapidly widespread in many countries, and furthermore service of LTE had already been in service in some countries which indicated remarkable development of Asia Pacific region.

On Friday 28 November and Monday 1 December, 2014, trainees visited to Hitachi Kokusai Electric, NEC Corporation and JVC Kenwood. They were given lectures and demonstrations related to mobile communication systems of each company.



Nine trainees from the government of the Asia-Pacific region



Country report presentation

Monthly seminars on radio wave use

No.125	3 October 2014
Title	Guidance on the use of mobile phones in medical institutions
Speaker	Prof. Takashi Kano, Faculty of Health & Medical Care, Saitama Medical University
Summary	The seminar covered background of guideline development, purpose, related research, and the content of the guidelines. Prof. Kano, lecturer is the chairman of "Working Group concerning the use of the mobile phone in the medical institution" set up by the Electromagnetic Compatibility Conference Japan to which ARIB serves as the secretariat.
No.126	31 October 2014
Title	Activities report on the fifth generation mobile communication system
Speaker	Sub leader of 2020 and Beyond AdHoc : Mr. Akira Matsunaga, KDDI, Mr. Takaharu Nakamura, Fujitsu
Summary	The seminar covered the introduction of the content of the white paper created by the 2020 and ad-hoc group, and the outline of the relating wireless access technology.

AIRPORT DIGITAL MOBILE TELECOMMUNICATION SYSTEM TYPE 2 (STD-T114 Ver. 1.0)

This standard specifies an air interface for digital airport wireless communication of 400MHz band by employing TETRA (TERrestrial Trunked RAdio) system to the radio network access.

English version is not available.

RECEIVER FOR ADVANCED WIDE BAND DIGITAL SATELLITE BROADCASTING (STD-B63 Ver. 1.0)

This standard specifies a preferable specification of a receiver for the advanced wideband(34.5MHz) satellite Ultra-High Definition TV broadcasting.

It defines receiver function, interface between converter and DIRD (Digital Integrated Receiver Decoder), digital interface (AV interface, IP interface) and the download function.

English version is not available.

MULTIMEDIA CODING SPECIFICATION FOR DIGITAL BROADCASTING (SECOND GENERATION) (STD-B62 Ver. 1.0)

This standard specifies second generation multimedia coding scheme including HTML5 for the digital broadcasting.

English version is available.

Study for Telecommunication System

Radio utilization system for robots

Utilization of remote-controlled robots is expected to make business smooth and rapid, especially in case of disaster. Robots includes disaster response robots, unmanned

construction machines, unmanned aircraft and radio control equipment.

Needs for wireless communication to control robots remotely and to transmit image are rapidly growing.

Technical studies for secure communication systems and frequency sharing that could be applied to robots operation in various environment have started.

R&D for Telecommunication System

Wireless LAN System

The following new subjects have been studied by simulation methods.

- (1) To Analyze the interference between Aps(Access Points) and STAs(Stations) in the dense environment.
- (2) To study the utilization-rate by time and frequency concerning OFDM.
- (3) To investigate the interference by adjacent channels in 5GHz band.

Regarding suppression of 2.4GHz band overlap channel utilization, it was concluded to use a separate channel.

And ARIB STD-T66 has been revised to add recommended channel setting in operation.

Study for Broadcasting System

Quality Evaluation Method for Broadcasting

(1) Evaluation Sequence

Ultra-high-resolution still images charts, co-produced with the Institute of Image Information and Television Engineers (ITE), have been published as "Ultra-high definition/wide-color-gamut standard test images" from ITE.

These charts includes 2 types of format with the spatial resolution of 8K and 4K defined in ITU-R BT.2020 (Rec.2020) and one type of format with spatial resolution of 2K defined in ITU-R BT.709 (Rec.709).

(2) Sound Quality Evaluation

For the subjective quality evaluation method, contribution on the adjusted value of the speaker playback level in Recommendation ITU-R BS.1116 has been drafted.

R&D for Broadcasting System
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1 Digital Broadcasting Systems

(1) Multiplexing Technology

ARIB STD-B60 specifies the method to enhance and restrict MMT to use in broadcasting. The work to propose details in this regard to ITU-R and MPEG has been conducted.

(2) Video Coding Technology

HEVC to be used for video encoding has been discussed.

(3) Audio Coding Technology

ARIB STD-B32 (Part 2: Audio Signal and Coding System) has been revised to enhance MPEG-4 AAC (Advanced Audio Coding) to improve sound quality and enhancements of dialog (narration, speech) of the V-Low multimedia broadcasting.

In accordance with the latest MPEG standard, a contribution to update the information about the standard channel placement of Recommendation ITU-R BS.1196-3 "Audio coding for digital broadcasting" has been drafted.

(4) Data Coding Technology

ARIB STD-B24 (Data Coding and Transmission Specification for Digital Broadcasting) has been revised to add the TTML (Timed Text Markup Language) transmission scheme in TS (Transport Stream).

A contribution to add ARIB-TTML, the subtitle method for digital broadcasting in Japan, to a new draft ITU-R report "closed caption production, transmission and exchange for the character set of the world" has been drafted.

(5) Data Broadcasting

ARIB STD-B62 (multimedia encoding method <second generation> standard in digital broadcasting) has been under study to add the provisions of local storage area and data resources cache control provisions.

(6) Receiver for Digital Broadcasting

ARIB STD-B53 (Receiver for Terrestrial Mobile Multimedia Broadcasting Based on Connected Segment Transmission) has been revised to add the receiver function of disaster prevention and safety information, and higher sound quality for V-Low multimedia broadcasting.

New standard ARIB STD-B63 (Receiver for Advanced Wide Band Digital Satellite Broadcasting) has been developed to define receiver function, interface between converter and DIRD (Digital Integrated Receiver Decoder), digital interface (AV interface, IP interface) and the download function.

(7) Satellite Digital Broadcasting

ARIB STD-B44 (Transmission System for Advanced Wide Band Digital Satellite Broadcasting) has been revised to add coding scheme for the transmission of UHDTV digital satellite broadcasting.

(8) Terrestrial Digital Broadcasting Transmission Coding

ARIB STD-B46 (Transmission System for Terrestrial Mobile Multimedia Broadcasting based on Connected Segment Transmission) has been revised to add disaster information to AC (Auxiliary Channel).

2 Program Production Systems

(1) Video Program Production Systems

The requirements for opto-electronic conversion have been summarized. Also a conversion formula from the Recommendation BT.709 to BT.2020 has been discussed.

Video dynamic range, opto-electronic conversion and television system parameters have been discussed to prepare for ITU-R SG6 activity.

Requirement of color bar for UHDTV has been discussed to prepare for ITU-R SG6 activity.

(2) Sound Program Production Systems

The work on requirement of multichannel sound system has been conducted to prepare for ITU-R SG6 activity.

Regarding the agenda of ITU-R SG6 in March/April 2014, the action policy has been discussed based on "Sound metadata", "Subjective quality evaluation method", and "Multi-channel sound system".

3 Transmission of Television Program Contribution

(1) Terrestrial Radio Transmission of Television Program Contribution

To develop a new standard for next generation digital transmission FPU system in 120GHz band, technical specification, provisions of maker compatibility and operational conditions have been discussed.

4 Ultra-High-Definition Television Broadcasting Systems

(1) Video Program Production Systems for UHDTV

The requirements for opto-electronic conversion have been summarized. Also a conversion formula from the Recommendation BT.709 to BT.2020 has been discussed.

Video dynamic range, opto-electronic conversion and television system parameters have been discussed to prepare for ITU-R SG6 activity.

Requirement of color bar for UHDTV has been discussed to prepare for ITU-R SG6 activity.

(2) Sound Program Production Systems for UHDTV

The work on requirement of multichannel sound system has been conducted to prepare for ITU-R SG6 activity.

Regarding the agenda of ITU-R SG6 in March/April 2014, the action policy has been discussed based on "Sound metadata", "Subjective quality evaluation method" and, "Multi-channel sound system".

(3) Interface between Program Production Equipment

Discussion has been made to revise STD-B58 regarding inter-studio and inter-station transmission, depending on the standardization work of the SMPTE for ST2036-4.

Multiplexing method of UHDTV-IF to multiplex 120Hz video and 96KHz voice was taken up to study.



Association of Radio Industries and Businesses

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