

Newsletter ARIB SEASON



Event



Frequency Resources Development Symposium 2015

The Frequency Resources Development Symposium 2015 —the theme of which was radio utilization system required for robots— was held in Tokyo on 10 July 2015. The event was organized by the Association of Radio Industries and Businesses (ARIB) and the National Institute of Information and Communications Technology (NICT). Additional support was provided by the Ministry of Internal Affairs and Communications (MIC).

Robots are expected to become increasingly useful in a wide range of fields such as agriculture, construction, disaster recovery and rescue, security and so on.

In November 2014, the Study Group on Radio Utilization Systems for Robots was set up at ARIB in order to examine the technical conditions of the radio utilization systems required for robots, as well as possibilities of frequency sharing with other systems. The Study Group plans to compile a strategy to facilitate the smooth introduction of radio utilization systems to robots.

In this symposium, lectures about the radio utilization system technologies required for robots were carried out by experts in industry, academia and government.

The program was as follows

1. Trends in recent radio policy

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

2. Radio utilization system for robots

Associate prof. Yasushi Hada, Department of Mechanical Systems Engineering, Kogakuin University

(Chairman of Study Group on Radio Utilization Systems for Robots, ARIB)

3. Overview of a precision agriculture demonstration in Australia using the autonomous robot tractor

Mr. Satoshi Sugawara, Department Manager of the Social Innovation Business Project Division, Hitachi Ltd.

4. Use of robots in security fields and supporting technologies

Mr. Satoshi Tonami, Leader of the Communication Network Group, Intelligent Systems Laboratory, SECOM Co., Ltd.

5. Autonomous underwater robot

Prof. Tamaki Ura, Director of Center for Socio-Robotic Synthesis, Kyushu Institute of Technology

6. Research and development trends in robot communication at NICT

Dr. Ryu Miura, Director of Dependable Wireless Laboratory, Wireless Network Research Institute, NICT



Frequency Resources Development Symposium 2015

The 19th Global Standards Collaboration (GSC-19) meeting

GSC is an unincorporated voluntary organization dedicated to enhancing global cooperation and collaboration regarding communications standards and the related standards development environment.

On 15 and 16 July 2015 the GSC-19 meeting was held at the ITU headquarters (Geneva, Switzerland) hosted by ITU.

Then 10 organizations of GSC member (1) and the following guest organizations (2) participated.

1 : ARIB, ATIS, CCSA, ETSI, IEEE-SA, ITU, TIA, TSDSI, TTA, TTC

2 : 3GPP, 4G Americas, 5G Forum, 5G PPP, 5GMF, BBF, EC, ISO, ISO/IEC JTC1, MEF, NGMN, OMA, TCCA

At the GSC-19 meeting, in addition to updates mainly on priority issues and strategic approaches at each SDO, the following three topics pre-selected via a prior telephone conference were also discussed.

1. Critical communications and public safety

An overview of related global activities was provided, with a focus on communications concerning public safety. Activities concerning the public safety communication system Public-Safety LTE and LMR were reported from 3GPP SA, NTIA/ITS, and TCCA. An update on projects concerning critical communications was given by the Emergency Communications Task Force of GSC and members.

ARIB introduced the portable 200MHz-band public broadband mobile communications system, which was developed based on the experience of the Great East Japan Earthquake.

In the discussion, in addition to expectations on securing frequencies the need for interoperability of Public-Safety LTE and LMR and incorporation of demand conditions to 5G was also pointed out.

2. IoT/M2M

At this session, group discussions were held with the participation of all conference participants. GSC members shared opinions about what commitments should be made on current IoT standardization.

3. IMT-2020/5G

Regarding the latest 5G developments, introductions were provided on 3GPP, 4G America, 5G Forum, 5GMF, 5GPPP, NGMN, IMT-2020(5G) Promotion Group, ATIS, IEEE, and TIA. An overview and 5GMF examination details were explained by ARIB/TTC.

In this session, each organization shared the latest information it had, and the participants discussed expectations for future collaboration related to 5G.



GSC-19 Meeting



GSC-19 participants

Liaison meeting on collaboration and cooperation between NICT and ARIB

Based on the agreement of the promotion of collaboration and cooperation signed between the National Institute of Information and Communications Technology (NICT) and ARIB, the 3rd liaison meeting was held on 4 August 2015.

This agreement was signed on 12 March, 2013 to strengthen the collaboration and cooperation of the two institutions on research, development and standardization.

In the liaison meeting, the activities of both institutions were introduced, followed by a lively exchange of views on further promotion of collaboration and cooperation.



Attendees of the liaison meeting between NICT and ARIB

Working Group Meeting on Technical Harmonization in the ISDB-T International Forum at the SET EXPO 2015

The Working Group Meeting on Technical Harmonization under the ISDB-T International Forum—a venue providing for technical exchange of views among the ISDB-T adopting countries—was held in conjunction with the SET EXPO 2015 in Sao Paulo, Brazil on 24 August 2015.

Japan (Ministry of Internal Affairs and Communications, JICA experts, and ARIB), Brazil, Chile, Ecuador, Peru, Costa Rica, Venezuela, Paraguay, Honduras, Guatemala and Botswana—for a total of 11 countries—joined the meeting.

The participants discussed revision of the harmonization documents concerning the hardware and the EWBS (Emergency Warning Broadcast System) as proposed by the Digital Broadcasting Experts

Group (DiBEG) at ARIB. Each country essentially supported the initiative.

Additional comments from the participating countries were collected by the end of September, with revised documents moved forward for the approval procedure at the ISDB-T International Forum meeting to be held in Brasilia, Brazil on 30 November -1 December.



Working Group Meeting on Technical Harmonization
at the ISDB-T International Forum

SET EXPO 2015, which is held annually by the organizers of the Sociedade Brasileira de Engenharia de Televisão (SET), was held in Sao Paulo, Brazil from August 23 to 27.

This event consists of exhibition on television broadcasting technology and panel discussion-based lectures.

Mr. Yasuo Sakamoto, Vice Minister of International Affairs and Communications, gave a keynote speech at the opening ceremony, while Dr. Reiko Kondo, Director for Digital Television Technology at the Ministry of Internal Affairs and Communications, and Mr. Masayuki Sugawara, Chairman of DiBEG, gave lectures on ISDB-T initiatives and next-generation television in Japan.

Several Japanese companies had large booths at the exhibition, while the Ministry of Internal Affairs and Communications set up the Japan Pavilion. ARIB and member companies gave an overview of ISDB-T related activities and products there.

During the lectures and the exhibitions, participants expressed great interest in the initiatives related to 4K/8K and EWBS of Japan.



Keynote speech
by Mr. Y.Sakamoto



Japan Pavilion

Monthly seminars on radio wave use

No.132	29 July 2015
Title	Trends and future prospects for advancement of radio equipment utilizing 60GHz band radio waves
Speaker	Mr. Hidetomo Ito Deputy Director of the Land Mobile Communications Division Radio Dept., Telecommunications Bureau, Ministry of Internal Affairs and Communications
Summary	The seminar covered the following subjects. (1) Overview of the partial report from the Information and Communications Council on 16 June 2015 (2) Domestic and international circumstances (3) Technical trend (4) Topics related to major technical conditions
No.133	31 August 2015
Title	IEEE-SA ICT Standard Projects ARIB Workshop
Lecture theme and Speaker	1 "Promotion of 5G mobile communication in Japan" Kohei Satoh, Executive Manager on Standardization, ARIB 2 "Introduction of IEEE-SA" John Kulick, IEEE-SA SASB Chair 3 "802 Wired Communication Projects" Glenn Parsons, Chair of IEEE 802.1 4 "802 Wireless Communication Projects" Jon Rosdahl, Vice Chair of IEEE 802.11 5 "Other IEEE Standards Projects about: DySpan, 5G, IoT, ITS" Bruce Kraemer, IEEE-SA President
Summary	The seminar covered the following subjects. (1) Overview of Japan's activities on 5G in the Fifth Generation Mobile Communications Promotion Forum (5GMF) [from ARIB] (2) Overview of the organization and activities of the IEEE-SA (3) Activities related to standardization project in the field of wired communications and radio communications respectively [from IEEE-SA] (4) Standardization initiatives related to DySPAN, IoT, etc. [from IEEE-SA]

Standards

REGIONAL DIGITAL SIMULTANEOUS COMMUNICATION SYSTEM TYPE2 (STD-T115 Ver.1.0)

This standard specifies the radio section interface of a relatively simple and inexpensive digital broadcast systems used mainly in a voice report due by SCPC (Single Channel per Carrier) method.

Technology

Telecommunication System Study

Radio utilization system for robots

At the 4th Study Group meeting on Radio Utilization System for Robots held on 10 April, reports of study results from WG studying conditions on radio utilization system for robots, as well as technical conditions on wireless communication system, were held.

In light of this WG report, the participants approved an action policy on launching an ad hoc WG to study frequency-sharing with existing wireless systems on candidate frequency bands (2.4GHz band and 5GHz band) and integrating frequency sharing methodology

At the first ad hoc WG meeting held on 22 May, an overview was given on study content and scheduling regarding assessment method and review model concepts.

In the second meeting held on 23 June, discussions about the result of desk study and technical issues related to 2.4GHz band were held.

R&D for Telecommunication Systems

1. Wireless LAN System

The 19th meeting of the Wireless LAN System Development Group was held on 15 April 2015.

The progress of the study on the impact of the 5GHz band adjacent channel interference and the up link traffic surge in the environment of overcrowded station deployment were reported upon ad hoc.

Further study projects, actual measurement methodology, and analysis will be implemented on an ongoing basis in the future.

2. Advanced Wireless Communications Study Committee

The Advanced Wireless Communications Study Committee (ADWICS) conducts technical studies on advanced wireless communications systems and international standardization.

(1) Mobile partnership

The 37th meeting was held 7 May 2015.

In order to submit the relevant proposals to the 96th ARIB Standard Assembly (3 July 2015), drafts of the following standards and technical reports were deliberated upon by e-mail.

- ARIB STD-T63
- ARIB STD-T64
- ARIB STD-T104
- ARIB TR-T12
- ARIB TR-T13

Changes implemented to the 3GPP Working Procedures were also discussed by e-mail.

(2) IMT Standardization

The 13th meeting was held on 18 May 2015. During the meeting, results of the 21st meeting of the ITU-R Working Party 5D (WP5D) (27 January - 4 February 2015: Auckland, New Zealand) were reported and action policy and draft contributions for the 22nd WP5D meeting (10 - 18 June 2015: San Diego, U.S.A.) were discussed.

As a result, it was agreed to send nine draft contributions to the Japanese approval process. These draft contributions were approved with slight modifications and were submitted to the 22nd WP5D meeting as Japanese contributions.

The 14th meeting was held on 6 August 2015. In this meeting, results of the 22nd meeting of the WP5D were reported.

(3) Mobile-commerce

During technical expert subcommittee, the following subjects on promotion and improvement of mobile public key infrastructure (PKI) were discussed.

- Access to e-government, etc. from a mobile phone
- Methods for mounting a public personal authentication certificate to a mobile phone

The 48th and 49th technical expert subcommittee meetings were held on 21 May and 22 June 2015.

The propulsion expert subcommittee dealt with the following:.

- Development of voucher profile using NFC
- Overseas inspection and NFC related market research
- Held study group meeting on mobile commerce

The propulsion expert subcommittee held its ninth mobile commerce meeting on 22 June 2015, holding presentations on circumstances and Japan's approach to 2020 settlement services.

Broadcasting System Study

Study Group on Quality Evaluation Method for Broadcasting

(1) Evaluation Sequence

With a view to providing reference video image (4K / 8K) for UHD TV, participants discussed the issues in cooperation with the Institute of Image Information and Television Engineers (ITE).

(2) Sound Quality Evaluation

The topics of measuring loudness of advanced sound systems as well as subjective quality evaluation methods of the advanced sound systems were discussed.

Revised recommendation for ITU-R were drafted and submitted to the Broadcasting International Standardization Working Group.

R&D for Broadcasting System

1. Digital Broadcasting Systems

Following revised standards had been deliberated and approved.

- ARIB STD-B1(Digital Receiver for Digital Satellite Broadcasting Services using Communication Satellites) V3.1
- ARIB STD-B10 (Service Information for Digital Broadcasting System) V5.5
- ARIB STD-B21 (Receiver for Digital Broadcasting) V5.6
- ARIB STD-B30 (Receiver for Digital Terrestrial Sound Broadcasting) V1.4
- ARIB STD-B32 (Video Coding, Audio Coding and Multiplexing Specifications for Digital Broadcasting) V3.3
- ARIB STD-B53 (Receiver for Terrestrial Mobile Multimedia Broadcasting Based on Connected Segment Transmission) V2.2
- ARIB STD-B60 (MMT Based Media Transport Scheme in Digital Broadcasting Systems) V1.3
- ARIB STD-B62 (Multimedia Coding Specification for Digital Broadcasting (Second Edition)) V1.2
- ARIB STD-B63 (Receiver for Advanced Wide Band Digital Satellite Broadcasting) V1.2

The Standard Assembly has approved the above nine Standards.

(1) Multiplexing Technology

ARIB STD-B10 (Service Information for Digital Broadcasting System) and ARIB STD-B60 (MMT Based Media Transport Scheme in Digital Broadcasting Systems) were drafted.

ARIB STD-B60 was drafted to add descriptors and revise tables, and add asset type for HEVC (High Efficiency Video Coding).

ARIB STD-B10 was drafted to revise descriptors for the corresponding advancement of area broadcasting and modify descriptors of the voice component.

(2) Video Coding Technology

ARIB STD-B32 has been drafted for modification of the constraints in the vent of coding by HEVC and clarification of operation of descriptors in television services using HEVC.

(3) Audio Coding Technology

ARIB STD-B32 was drafted to revise the guidelines of seamless switching in MPEG-4 AAC and MPEG-4 ALS.

(4) Data Coding Technology

Additions of character sets to be used in UHDTV were discussed.

(5) Data Broadcasting Technology

ARIB STD-B62 was drafted to add extended functions for broadcasting and the accumulation control provisions of data resources.

(6) Receiver for Digital Broadcasting

Clarification of the output level of dual-channel stereo in monaural audio mode has been discussed. This is related to ARIB STD-B1, STD-B21, STD-B30, STD-B53, and STD-B63.

STD-B63 was discussed to add supplementary information for downloading.

2. Program Production Systems

The R&D Group on Program Production Systems and the R&D Group on UHDTV Program Production Systems were integrated as of April 2015.

The following new standards and revised Technical Reports were deliberated upon and approved.

- ARIB STD-B66 (UHDTV Multiformat Color Bar) V1.0
- ARIB STD-B67 (Essential Parameter Values for the Extended Image Dynamic Range Television (EIDRTV) System for Programme Production) V1.0
- ARIB TR-B32 (Operational Guidelines on Loudness of Digital Television Programs) V1.3

The Standard Assembly has approved above two new standards and one revised Technical Report.

(1) Video Program Production Systems

Standards for the UHDTV Multiformat Color Bar and the Essential Parameter Values for the Extended Image Dynamic Range Television (EIDRTV) System for Programme Production were

studied and discussed.

Calculation method of the color reproduction capability of the display and the conversion formula from the Recommendation BT.2020 to BT.709 have been studied on an ongoing basis.

(2) Sound Program Production Systems

Revised recommendations BS.1770, specifically regarding loudness measurement methods pertaining to the channel arrangement of advanced sound systems were drafted and submitted to the Broadcasting International Standardization Working Group.

As for the newly recommended draft of BW64, the revised postscript of channel arrangement in BS.2051 and a preferable proposal for sharing with the renderer were submitted to the broadcasting international standardization working group.

A proposal channel arrangement of 8ch, 12ch, and 16ch to the revised draft of BS.1738 (identification and ordering of multiple audio channels carried on international contribution circuits), and drafts matching the contents of the BR.1384-2 defining voice channels for recording revised contents of the BS.1738 were submitted.

(3) Interface between Program Production Equipment

The ARIB STD-B58 (Interface for UHDTV Production Systems) was discussed to enable long distance transmission using DWDM (Dense Wavelength-Division Multiplexing).

ARIB STD-B64 was discussed in the context of transmitting voice data using auxiliary data defined in STD-B58.

Regarding UHDTV interfacing of time code multiplexing, participants decided to discuss the 60Hz time code in advance.

(4) Digital Closed-caption Production

On the exchange systems used in ultra-high-definition television subtitles (ARIB-TTML subtitles), drafting of new standards was initiated.

Exchange system of the ARIB-TTML subtitles has been handled by the standard as a guideline.

3. Transmission of Television Program Contribution

(1) SNG Transmission System

Experiment policies and experimental items were studied with a view to revision of adding a DVB-S2X standard to ARIB STD-B26 (HDTV digital SNG transmission systems).



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