

Awarded the special prize of broadcasting technology of the 40th Hoso Bunka Foundation Award

Presentation ceremony of the 40th Hoso Bunka Foundation (HBF\*\*) Award was held in Tokyo on 25 June 2014. The "Loudness Implementation Project" formed by Commercial Broadcasting Federation, NHK and ARIB, received the special prize of broadcasting technology in individual and group divisions.

The HBF award is presented annually from the HBF to the excellent broadcast program, broadcast technologies achieved past one year.

The "Loudness Implementation Project" has worked to introduce loudness management into TV broadcasters in Japan. The project has been highly evaluated, and Mr. Eiichi Matsunaga who is a member of this project in ARIB, represented to receive the prize.

The loudness management eliminates the difference in audio level that would occur between TV programs or TV channels, and has been introduced to all television broadcasters in Japan by April 2013, which has been welcomed by audience.

<sup>\*</sup> HBF : An independent non-profit organization which was established in February 1974 and aims to promote the culture and technological development of broadcasting.



Presentation ceremony of the 40th HBF Award

### Frequency Resources Development Symposium 2014

The "Frequency Resources Development Symposium 2014" under the theme of the future technology of wireless broadband access, was held in Tokyo on 4 July 2014, organized by National Institute of Information and Communications Technology (NICT) and Association of Radio Industries and Businesses (ARIB) and supported by the Ministry of Internal Affairs and Communications (MIC).

Dr. Fumihiko Tomita, Vice President of NICT, opened the Symposium with welcoming remarks, and Mr. Masahiko Tominaga, Director of Radio Department, Telecommunication Bureau, MIC, addressed the greeting speech as a guest, after that, speakers gave following lectures.

1. Latest trends in radio policy

Mr. Yoshiaki Takeuchi, Director of Radio Policy Division, Radio Department, Telecommunication Bureau, MIC

2. Future wireless technology for 5G

Mr. Takehiro Nakamura, Director of the Radio Access System Group, Radio Access Network Development Department, NTT DOCOMO, Inc. 3. High efficiency and capacity of the next generation wireless LAN

Mr. Masato Mizoguchi, Vice-Chairman of Wireless LAN System Development Committee (ARIB), Senior Research Engineer of Wireless Systems Innovation Laboratory, NTT Network Innovation Laboratories

- 4. Features of the M2M service and its Wireless network technology Mr. Masafumi Katoh, Senior Expert, Fujitsu Laboratories
- 5. Broadband access technology in NICT

Dr. Fumihide Kojima, Research Manager of Smart Wireless Laboratory, NICT



Frequency Resources Development Symposium 2014



Dr. Fumihiko Tomita



Mr. Masahiko Tominaga



Mr. Yoshiaki Takeuchi



Mr. Takehiro Nakamura



Mr. Masato Mizoguchi



Mr. Masafumi Katoh



Dr. Fumihide Kojima

# The 18<sup>th</sup> GSC Meeting

The 18th meeting of the Global Standards Collaboration (GSC), a senior-level gathering of the world's leading information and communication technologies (ICT) standards organizations, took place on 22 to 23 July 2014, hosted by ETSI (European Telecommunications Standards Institute) in Sophia Antipolis, France.

GSC-18 meeting focused on three topics which would require strategic discussing to develop standards and to bring benefits to industries. Three topics were Machine to Machine (M2M) / Internet of Things (IoT), Software Defined Networking (SDN) / Network Functions Virtualization (NFV), and Critical Communications.

GSC welcomed two new members at this meeting: the IEEE Standards Association (IEEE-SA) and TSDSI (Telecommunications Standards Development Society, India). With these new members, GSC members counts to 11.

Press release was issued on 28 July 2014. http://www.etsi.org/gsc-18/press-release



GSC-18 Meeting



The participants of GSC-18 meeting

## TTC and ARIB held seminar on M2M

On 1 September, a seminar that introduces latest trends in standardization related to M2M, sponsored by ARIB / TTC was held.

Nine lecturers, who have been participating continuously in the technical general meeting of oneM2M, talked about major technology employed by oneM2M, the first edition of the technical specifications, and the significance of oneM2M.



ARIB/TTC Seminar

Dr. Satoh of ARIB was elected as a new chairman of the APT Wireless Group (AWG)

(APT : Asia-Pacific Telecommunity)

The 17th AWG meeting was held in Macao, China on 23 to 26 September 2014 to study various aspects of emerging wireless systems including IMT/IMT-Advanced in the Asia-Pacific region. Dr. Kohei Satoh, Managing Director of ARIB who was the current vice-chairman, was elected as a new chairman of AWG at its closing plenary.



Dr. Satoh at a podium

## Monthly seminars on radio wave use

No.122	8 July 2014
Title	Trends and outlook for the "Enhancement of fixed radio communication system"
Speaker	Mr. Kazuaki Nakagoshi, Assistant Director, Fixed Radio Communications Division, Radio Department, Telecommunications Bureau, Ministry of Internal Affairs and Communications
Summary	The seminar covered the technical specification of the 80GHz band high-speed wireless transmission system, and the 6.5 / 7.5GHz band portable system, etc.
No.123	30 July 2014
Title	Outlook for the "Radio policy vision"
Speaker	Ms. Kuniko Ogawa, Senior Planning Officer Radio Policy Division, Radio Department, Telecommunications Bureau, Ministry of Internal Affairs and Communications
Summary	The seminar covered overview of interim report of radio policy vision, which was published on 14 July.

No.124	3 September 2014
Title	Current state and outlook for the "Digital terrestrial television broadcasting in Uruguay"
Speaker	Mr. Nobuyuki Sato, Engineering Administration Department, Japan Broadcasting Corporation, JICA Expert (Uruguayan DTB technical assistance Advisor)
Summary	The seminar covered overview of technical assistance to the national broadcaster to introduced digital TV, and broadcasting situation in Uruguay.

Standards

## MMT-BASED MEDIA TRANSPORT SCHEME IN DIGITAL BROADCASTING SYSTEMS (STD-B60 Ver. 1.0)

This standard specifies the MMT (MPEG Media Transport)-based transport scheme of video, audio and data in digital broadcasting system.

MMT has been standardized as ISO / IEC 23008-1 in March 2014. It has a feature that can be applied to multiple media including communication and broadcasting. English version is not available.

## CONDITIONAL ACCESS SYSTEM (2ND GENERATION) AND CAS PROGRAM DOWNLOAD SYSTEM SPECIFICATIONS FOR DIGITAL BROADCASTING (STD-B61 Ver.1.0)

This standard specifies standards related to "access control method of the second generation in digital broadcasting" and "downloadable CAS", to be applied to standard television broadcasting, high definition television broadcasting, ultra-high-definition television broadcasting, data broadcasting in the  $11.7 \sim 12.2$ GHz and  $12.2 \sim 12.75$ GHz (34.5MHz bandwidth) standard television.

English version is not available.

# MULTIMEDIA CODING SPECIFICATION FOR DIGITAL BROADCASTING (2'ND GENERATION) (STD-B62 Ver.1.0)

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

English version is not available.

Technology |

R&D for Telecommunication System

### 1 Public broadband wireless communication system

Public broadband mobile communication system provides video transmission with reliability and flexibility in the field of disaster to share accurate information among authorities. The work on interoperability and synchronization is in progress.

The system is expected to be designed to be used in ordinary situations as well.

## 2 Wireless LAN System

The Group works on the following issues.

- $\cdot Suppression$  of the 2.4GHz band overlap channel utilization
- $\cdot \operatorname{Reduction}$  of management and control frames occupancy time
- •Modeling of dense state public wireless LAN access points (AP)
- $\cdot$  Methods to check the conformity to technical standards

Regarding suppression of the 2.4GHz band-overlap channels utilization, it has been drafted to add recommended operational channels to the ARIB standard.

Regarding reduction of management and control frames occupancy time, it has been conducted to survey the use of Wildcard in Probe Request frame, and the results have been summarized.

New work items include, "The analysis of cause to increase the interference inter and intra BSS depending on the increase of the number of APs (Access Points) and STAs (Stations) and the study to eliminate the interference", "survey of utilization-rate by time and frequency in a wireless LAN", and "investigation on interference by adjacent channel in 5GHz band".

#### 3 Advanced Wireless Communications Study Committee

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

The six Contributions for future IMT systems including one joint contribution by Japan, Korea and China, and one by Japan and Korea have been submitted to #19 WP5D (Halifax, Canada 18 to 25 June).

White Paper titled "Mobile Communication Systems for 2020 and beyond", produced by 2020 and Beyond AdHoc Group, has been released and submitted to the WP5D#19 meeting (Halifax, Canada; 18 to 25 June) as informational document and received by the ITU-R as "for information".

Contents of White Paper:

- 1. Market and user trends of ICT
- 2. Traffic trend
- 3. Cost implications
- 4. Spectrum implications
- 5. Typical usage scenarios, general requirement for 5G, and 5G roles
- 6. Framework and capabilities of 5G
- 7.5G Definition
- 8. 5G Radio Access Technologies

### Study for Broadcasting System

#### **Quality Evaluation Method for Broadcasting**

(1) Sound Quality Evaluation

The subjective quality evaluation method has been studied to find the conditions of listening room, a remaining issue to revise Recommendation ITU-R BS.1116.

#### 1. Digital Broadcasting Systems

(1) Multiplexing Technology

ARIB STD-B10 (Service Information for Digital Broadcasting System) and ARIB STD-B32 (Video Coding, Audio Coding, and Multiplexing Specifications for Digital Broadcasting) have been revised to include the multiplexing technology of UHDTV. Also the new standard ARIB STD-B60 (MMT-Based Media Transport Scheme in Digital Broadcasting Systems) has been developed.

#### (2) Video Coding Technology

ARIB STD-B32 has been revised to include the video coding technology of UHDTV broadcasting, and operational guidelines and constraints of coding parameters using HEVC.

(3) Audio Coding Technology

ARIB STD-B32 has been revised to add MPEG4 ALS and MPEG-4 AAC system.

(4) Data Coding Technology

New standard ARIB STD-B62 (Multimedia Coding Specification for Digital Broadcasting <2'nd Generation>) has been developed to define the closed caption coding technology and the monomedia coding system in data broadcasting system of UHDTV broadcasting.

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

(5) Data Broadcasting

ARIB STD-B24 has been revised to add the expansion of manufacturer type (maker\_id).

New standard ARIB STD-B62 has been developed to define the data broadcasting system of UHDTV broadcasting (4K 8K broadcast).

#### (6) Access Control Technology

New standard ARIB STD-B61 (Conditional Access System <2nd Generation> and CAS Program Download System Specifications for Digital Broadcasting) has been developed to define the access control technology in UHDTV.

ARIB STD-B25 (Conditional Access System Specifications for Digital Broadcasting) has been revised to include V-Low multimedia broadcasting.

(7) Receiver for Digital Broadcasting

ARIB STD-B1 (Digital Receiver for Digital Satellite Broadcasting Services Using Communication Satellites) has been revised to add the provisions of the receiver of 4K broadcasting for 124 ° / 128 ° CS.

ARIB STD-B53 (Receiver for Terrestrial Mobile Multimedia Broadcasting Based on Connected Segment Transmission) has been revised to add the provisions of the receiver of V-Low multimedia broadcasting.

ARIB STD-B21 (Receiver for Digital Broadcasting) has been revised to include the expansion of manufacturer type (maker\_id).

Study of home delivery technology via IF of BS / 110° CS with left-hand circular is in progress.

Study of digital interface (AV interface, I/P interface) of UHDTV receiver is in progress.

(8) 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.

#### 2 Program Production Systems

(1) Video Program Production Systems

The work is conducted to focus on research and development of TV Program Production Systems and Video Program Production Systems to prepare ITU-R SG6 activity. (2) Sound Program Production Systems

The work is mainly on operational guidelines for Loudness of digital television programs.

The studies will be extended to Loudness for UHDTV.

(3) File Format of Television Program

The studies on the file format of television program to be used for a program exchange between broadcasting stations are in progress. The studies will be extended to the file format for UHDTV.

(4) Digital Closed-caption Production

The work is conducted to standardize multipurpose closed-caption language. The studies will be extended to multipurpose closed-caption language for UHDTV.

### 3 Ultra-High-Definition Television Broadcasting Systems

- Video Program Production Systems for UHDTV The work is conducted to revise "UHDTV System Parameters for Program Production (STD-B56)" in line with the discussion on BT.2020 in ITU-R.
- (2) Sound Program Production Systems for UHDTV The work on requirement of sound program multiplexing is conducted.
- (3) Interface between Program Production Equipment English translated version of ARIB STD-B58 (Interface for UHDTV Production Systems) was issued in June 2014 on the ARIB-Web.



# Association of Radio Industries and Businesses

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