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5G Utilization Idea Contest

The Ministry of Internal Affairs and Communications (MIC) made an appeal for 5G utilization ideas to create new markets and solve local community problems by realizing the 5th generation mobile communications system (5G). In this connection, the 2nd stage in a 5G utilization idea contest was held in January.

1. Overview of the meeting

Schedule	11 January 2019
Venue	Ministry of Internal Affairs and Communications (Tokyo, Japan)
Participants	About 340

2. Program

- (1) Opening Remark by Parliamentary Secretary for Internal Affairs and Communications, Mr Kunishige
- (2) Presentation by eleven 1st stage passers
- (3) Exhibition of the 33 ideas which had been ranked within top3 at the 1st stage
- (4) Examination and award As a result of the examination, the following ideas were selected for each award.

Award	Winner	Title
Minister of Internal		Improvement of working
Affairs and	Ehime University	environment, securing of labor
Communications		safety and realization of technology
Award		transfer for highly skilled workers
Awaru		utilizing the 5G characteristics
Arroad for coluing		Near-future Measures for Damage
Award for solving	Eiheiji town	from Snow realized by eMTC and
local issue		URLLC
Amond for utilizing	Mr. Yasushi Fuwa (Individual)	Climber Watching System realizing
Award for utilizing		Discovery and Communication with
bG characteristic		the climber
Judges' Special	Mr. Tatsuki KUBO	Watching sports with sense of unity
Award	(Individual)	brought by 5G
La lanat Garadal		Prevention of wild animal damage
Judges Special	Okinawa Enetech	by 5G data transmission of wide
Award	Co., Inc	area simultaneous sensing image
		"Ultimate powder snow"
Award of excellence	d.cast Co., Ltd.	Improvement in user experience in
		Kutuchan, Niseko area

Award of excellence	Iwate University	Wild animal extermination system using image recognition and drone
Award of excellence	TIS Inc.	Spot street light and security service provided by 5G and drone
Award of excellence	CCJ Co.,Ltd., CTY.,Ltd.	Cleaning Robot using 5G and its usage as communication tool
Award of excellence	Sompo Japan Nipponkoa Insurance Inc., Sompo Holdings, Inc.	Watching and keeping track through sensor and precise face recognition utilizing 5G
Award of excellence	Oita prefecture	Establishment of a driving support system that enables safe travel on dense fog highways



Prsentation



Comment of the judge



Awards ceremony

The 4th APG-19 meeting in Pusan

APG-19 (Asia-Pacific Telecommunity Conference Preparatory Group for WRC-19) has responsibility to prepare the APT Common Proposal towards the World Radiocommunication Conference to be held from October to November 2019 (WRC-19). Dr. Kyu-Jin Wee (Korea) serve as chairman, Mr. Xiaoyang Gao (China) and Mr. Neil Meaney (Australia) as vice chairmen.

The 4th meeting of APG-19 was held in January 2019. Overview and Major results of the meeting are as follows.

Schedule	7 to 12 January 2019
Venue	Haeundae Grand Hotel (Pusan, Korea)
Participants	About 437 people from 23 countries
Participants from Japan	64 people (including 4 people from ARIB) headed by Ms. Fukahori (Director of International Frequency Policy Office, MIC)

1. Overview of the meeting

2. Major results

At this meeting, the draft APT proposal documents which are the basis for continuing the previous meeting has been updated, for formulating the APT joint proposal in each Agenda Item (AI) of WRC-19. The results of discussion on the main agenda are shown below.

(1) AI 1.11: To facilitate global or regional harmonized frequency bands to support railway radiocommunication systems between train and trackside within existing mobile service allocations

It was decided to be a provisional view that 138-174MHz, 335.4-470MHz, 703-748MHz, 758-803MHz, 873-915MHz, 918-960MHz, 1770-1880MHz, 43.5-45.5GHz, 92-109.5GHz band (or part of these) were considered to be potential bands for harmonization in the 3rd region, and that 138-174MHz, 335.4-470MHz, 873-915MHz, 918-960MHz bands (or some of them) were expected to be studied as global bands for harmonization in the other regions.

(2) AI 1.12: To consider possible global or regional harmonized frequency bands, to the maximum extent possible, for the implementation of evolving Intelligent Transport Systems (ITS) under existing mobile-service allocations

It was decided to be a provisional view that 5850-5925MHz band (or a part of this) should be considered as a global harmonization band, and the currently used ITS frequencies described in ITU-R Recommendation M.[ITS_FRQ] should be considered as a regional harmonization band.

Additionally, it was described that the evolution of ITS is neither restricted nor excluded to specific technologies including LTE based V2X, that ITS application in this band should not impose any further restriction on other already used primary services, and that appropriate consideration should be given to the other primary services including mobile satellite service uplink.

(3) AI 1.13: To study identification of frequency bands for the future development of International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis

This AI is about the study of IMT system allocation for eleven candidate bands from 24.25GHz to 86GHz. At this meeting, draft proposals were made for three candidate frequency bands as described below.

- 24.25-27.5GHz: Identified as IMT band. At the same time, the resolution750 (Rev. WRC-15) that specifies the unwanted emission level should be updated to protect the earth exploration satellite service (passive). (Concrete study of the unwanted emission level would be continued.)
- 31.8-33.4GHz: RR (Radio Regulation) should not be amended. (Not identified as IMT band.)
- 37-40.5GHz, 40.5-42.5GHz, 42.5-43.5GHz: Specified as IMT in whole or in part, respectively. It was decided to be common understanding that the different parts can be used in the judgment of each country and region from the entire 37-43.5GHz band.
- (4) AI 1.15: To consider identification of frequency bands for use by administrations for the land-mobile and fixed services applications operating in the frequency range 275-450GHz

It was decided to continue supporting the study undergoing in ITU-R, and to make it a provisional view that new footnote should be added to the appropriate place of Radio Regulation, when identifying the frequency.

(5) AI 1.16: To consider issues related to wireless access systems, including radio local area networks (WAS/RLAN), in the frequency bands between 5150MHz and 5925MHz

It was decided to continue supporting the study undergoing in ITU-R, and draft proposals were made as described below.

- 5150-5350MHz, 5350-5470MHz, 5725-5850MHz, 5850-5925MHz: RR (Radio Regulation) should not be amended.
- 5250-5350MHz, 5350-5470MHz, 5850-5925MHz: RR (Radio Regulation) should not be amended.
- > 5150-5250MHz: Study of possible outdoor availability should be continued under conditions to protect existing service.
- ➢ 5725-5850MHz: In consideration of RR No. 5.453, global use of this band was supported.



The 4th APG-19 meeting

3. Future meeting schedule

Meeting	Date	Venue	Agenda
5th	31 July - 6 August 2019	Japan	Complete the APT joint proposal

Digital Terrestrial TV Seminar in Santiago

Chile decided the adoption of ISDB-T in September 2009 as its national standard of digital terrestrial television; and now it is scheduled to attain the ASO (Analog Switch-Off) in March 2020. In order to promote the terrestrial digitization process, a terrestrial digital TV seminar was held in Santiago on 17 January, attended by approximately 100 people. Ms. Catalina Parot, President of Consejo Nacional de Televisión (CNTV), Ms. Pamela Gidi Masías, Subsecretaría de Telecomunicaciones (SUBTEL) and other government executives of Chile, together with broadcasters and related industry people attended the Seminar. The Japanese delegation was headed by Mr. T. Kunishige, Parliamentary Vice-Minister for Internal Affairs and Communications, followed by the executives from International Cooperation Division and Broadcasting Technology Division of both MIC, ARIB/DiBEG member company representatives (from NHK and Hitachi Kokusai Linear) and from the secretariat.

At the opening of the Seminar, Ms. Parot of CNTV, Ms. Gidi of SUBTEL, Mr. Ernesto Corona Bozzo, President of Asociación Nacional de Televisión (ANATEL), and Mr. Kunishige each made a welcome speech.

Following the opening remarks, Mr. A. Castro of SUBTEL explained the role of SUBTEL toward the promotion and implementation of digital terrestrial TV; Ms. T. Lama of CNTV presented the role of CNTV and its current status on the digitization process; Mr. M.

Sepúlveda of ANATEL explained the latest situation of Chilean broadcasters' efforts and challenges toward the ASO deadline of the year 2020.

Mr. C. Núñez of ANATEL explained in his presentation that digital TV services are beneficial not only via terrestrial transmission but also via satellites. Mr. E. Corona, President of ANATEL, stressed the necessity of realistic measures toward the completion of TV digitization now scheduled in 2020.

Mr. R. Moreno, General Manager of ARCATEL (Asociación Gremial de Canales Regionales de Televisión), introduced their activities in the program production in collaboration with regional TV broadcasters and also emphasized the necessity of accessibility for handicapped TV viewers.

Mr. H. Kimura, Director for Digital Broadcasting Technology Division, representing MIC, introduced the experiences in the digital transition and the latest study status on the next-generation broadcasting technology in Japan.

Then the representatives from ARIB/DiBEG member companies presented the benefits and various applications of digital terrestrial TV in comparison with analog TV services (by Mr. Y. Maruyama of DiBEG), experiences in the transition from terrestrial analog to digital TV and the latest situation in the development of next generation digital broadcasting technology (by Mr. K. Suzuki of NHK), digital terrestrial TV transmitters and the next-generation ISDB-T technology (by Mr. Y. Miyoshi of Hitachi Kokusai Linear), outline of international activities of DiBEG (by DiBEG secretariat); international promotion of EWBS (Emergency Warning Broadcast System) technology (by Mr. Y. Sakaguchi of JTEC), and international promotion of Japanese program contents (by Mr. S. Maeda of BEAJ).

The Seminar was concluded by Dr. M. Sugawara, Chairman of DiBEG, with his closing remarks.

There was an exhibition area next to the Seminar hall, where we introduced the DiBEG promotional activities, together with a demonstration of EWBS, and an introduction of international marketing of program contents.



Digital Terrestrial TV Seminar



Seminar Hall

EWBS Demo

The 54th CJK IMT Working Group Meeting in Guangzhou

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

The 54th CJK IMT Working Group Meeting was held as described below.

Schedule	17 and 18 January 2019
Venue	Ramada Pearl Hotel Guangzhou (Guangzhou, China)
Participants	ARIB (Japan) 8, CCSA (China) 13, TTA (Korea) 6

1. Overview of the meeting

2. Main Results

- (1) The results of the 24th AWG (ASIA-PACIFIC TELECOMMUNITY Wireless Group) held in September 2018, the 31st ITU-R SG5 WP5D held in October 2018 were confirmed. And reports of each SDO's activities and discussions at 3GPP were shared.
- (2) Information on IMT-2020 radio interface was shared, regarding the proposal to ITU-R from each country, the activity progress of the external evaluation group, and preparation for the 25th APT Wireless Group (AWG-25) and the 2nd CPM-19 (Conference Preparatory Meeting for WRC-19).
- (3) Information was shared on the preparation progress of each country for the 31st bis ITU-R WP5D meeting to be held from 11 February. Overviewing the activities of three Special Interest Groups (SIG-Spectrum, SIG-Evaluation, SIG-V2X), joint contribution on four documents was decided to be studied based on the common part of each SDO's proposal.

3. Future Plan

The next CJK IMT Working Group Meeting will be scheduled on 29 and 30 May 2019 in Daejeon, Korea.



The 54th CJK IMT meeting

5G International Symposium 2019 in Tokyo

The 5G International Symposium with the theme of "5G transforming People, Things and Society" was held on January 29 and 30 2019, organized by the Ministry of Internal Affairs and Communications (MIC), co-hosted by the Fifth Generation Mobile Communications Promotion Forum (5GMF) and ARIB, and supported by the Telecommunication Technology Committee (TTC).

There were exhibitions and demonstrations related to the 5G Field Trials aiming to give attendees a first-hand experience of a world where 5G is realized at the next of the symposium hall.

Date:	Tuesday, January 29 to Wednesday, January 30, 2019
Place:	Tokyo International Exchange Center Plaza Heisei (Tokyo, Japan)
Attendees:	About 1000 people, including 31 participants from six countries and
	regions in Asia (Thailand, Turkey, Indonesia, Malaysia, Taiwan, Korea)
	as well as representatives of government ministries, universities, and
	companies from France that have an interest in $5{ m G}$

The program of the Seminar was as follows.

Title	Speaker
Greeting by Guest	Ms. Yukari Sato
	Senior Vice-Minister for Internal
	Affairs and Communications
Keynote speech	Dr. Susumu Yoshida
	Chairman of the 5GMF
[Part 1] Regional Revitalization and Partner Co	operation
Overview of the "5G Utilization Idea Contest"	Mr. Gaku Nakazato
	Director of the New-Generation
	Mobile Communications Office, MIC
[Ministry of Internal Affairs and	Ehime University Graduate School
Communications Award	of Science and Engineering
Improvement of working environment	Distributed Systems Laboratory
for highly skilled workers utilizing 5G	
characteristics, realization of labor safety,	
realization of technology transfer	
[Local problem solution award]	Eiheiji Town General Policy
Measures of near-future snow damage that	Division
enables simultaneous multiple connection and	
low delay	
[5G Characteristics Application Award]	Mr. Yasushi Fuwa (Indivisual)
Realization of mountaineer discovery / space	
sharing function in mountain climber	
watching system	
[Judge's special award]	Mr.Tatsuki Kubo (Indivisual)
Watching 5G sports that brings a new sense of	
unity	
[Judge's special award]	Okinawa Enetech Co., Ltd.
Protection against harmful birds and birds by	
transferring bG largecapacity	
Demonitor for the Contest and Drive winner	Ma Fumiahi Kabawashi
Remarks for the Contest and Frize winner	Mr. Fumaki Kobayashi Davljamontavy Socratavy for
	Internal Affairs and
	Communications
[Special lecture]	Mr. Takashi Imoto
Organizational strategy and the utilization of	President Director of the Media
IoT / AI in the age of 5G	Sketch Co., Ltd.
[Panel discussion]	Mr. Gota Iwanami (Moderator.
Organizational strategy and the utilization of	5GMF Application Chair)
IoT / AI in the age of 5G	CEO, Infocity Inc.
	Mr. Shingo Otomo
	CyberZ, Inc.

	Mr. Kazuyuki Kimura
	Komatsu Ltd.
	Mr. Yasunori Sueyoshi
	Kubota Corporation
	Mr. Sadao Tanaka
	SECOM CO., LTD.
[Part 2] Results of the 5G Field Trials	
Overview of 5G Field Trials	Prof. Fumiyuki Adachi
	Specially Appointed professor
	(research) and Professor Emeritus
	at Tohoku University
Field trial of ultra-high speed communication	Dr. Yukihiko Okumura
in an outdoor environment using 5G	NTT DOCOMO, Inc.
Field trial of a high-speed communication in a	Mr. Masanori Ichinose
high-speed mobile environment using 5G	NTT Communications Corporation
0 .I	
Field trial of ultra-high speed uplink	Mr. Akira Matsunaga
application cases by 5G	KDDI CORPORATION
Field trial of ultra-high speed communication	Mr. Hiroyuki Yokoyama
in indoor environment using 5G	Advanced Telecommunications
	Research Institute International
Field trial of ultra-low latency to support	Mr. Hitoshi Yoshino
self-driving vehicles using 5G	Softbank Corp.
Field trial of uses of massive simultaneous	Mr. Dr. Takao Okamawari
connections in 5G	Wireless City Planning Inc.
Activities related to the 5G smart office in	Mr. Kotaro Hashimoto
Higashi Hiroshima City	Head of Information Policy
	Section, Higashi Hiroshima City
Improvement of emergency care using 5G	Mr. Seiji Ohno
I	General Manager, Information
	Policy, Maebashi City
[Part 3] International Development of 5G	
[Panel discussion]	Mr. Masaharu Hata (Moderator)
5G radio wave propagation	Emeritus Professor, Okayama
	University
	Mr. Henrik Asplund
	Ericsson

Mr. HyunKyu Chung Korea Electronic Communications Research Institute Mr. Tetsuro Imai

NTT DOCOMO, Inc.



5G International Symposium 2019

Exhibition booths were set up in the center of the media hall, next to the hall where the symposium was held, to provide information on the 5G Field Trials.

There were also panel displays describing the winners of the 5G Utilization Idea Contest, as well as those from Nomura Research Institute and Mitsubishi Research Institute, both of which presented ideas related to the theme of establishing partner collaboration relationships with regional partners.





【2】



[1] 5G Utilization Idea Contest: Award winning panel display

[2] Utilizing 5G for SAKE brewing [Nomura Research Institute, Aizu Wakamatsu City]

[3] Next-generation mobile system examination [Mitsubishi Research Institute]



- [4] Application of high-speed large-capacity transfer: Watch with robot in station yard [ATR]
- [5] Remote control of construction machines (Outdoor trailer house) [KDDI]
- [6] Transmission of photographed image by 4K 120fps [KDDI]



- [7] 5G high-speed communication in outdoor environments, high-speed mobile environments
- [8] Drone aerial photography / Real-time video delivery: Snow removal vehicle operation support applications [KDDI]



[9]

【10】

[9] Truck platooning [Softbank]

[10] Smart highway/ Smart office [Wireless City Planning]

ITU-R WP5D the 31st bis Meeting

ITU-R WP5D the 31st bis meeting was held as below.

1. Overview of the meeting

Schedule	From 11 to 15 February 2019
Venue	ITU Headquarters (Geneva, Switzerland)
Participants	About 180 people from 32 countries (38 organizations)
Participants from Japan	19 people (including 3 people from ARIB) headed by Mr. Arimura (Land Mobile Communications Division, MIC)



ITU-R WP5D the 31st bis Opening Plenary

2. Main results

- (1) Regarding the revision of Recommendation ITU-R M.1036-5 on frequency arrangement of terrestrial IMT, it was agreed that the Working document would be upgraded to the Draft revised Recommendation based on the Japanese contribution and the offline discussion led by Japan.
- (2) The Preliminary draft new Report ITU-R M. [IMT & BSS COMPATIBILITY] was confirmed to be ready to be upgraded to the Draft new Report concerning the frequency sharing study of the L-band IMT and BSS system (WRC-19 Agenda 9.1, Task 9.1.2), and a liaison statement reporting work progress and indicating the upgrade based on the Japanese contribution, was issued to WP4A.
- (3) It was agreed that the working document on compatibility study between L-band IMT and MSS system (Resolution 223 (WRC-15 revised)) would be upgraded to Preliminary draft new Report ITU-R M.[REP.MSS & L-Band MSS COMPATIBILITY], and a liaison statement reporting work progress and indicating the upgrade, was issued to WP4C.
- (4) It was agreed that the working document on frequency sharing and compatibility study between IMT and radar in the 3.3GHz band (Resolution 223 (WRC-15 revised)) would be upgraded to Preliminary draft new Report ITU-R M.[RADAR & IMT SHARING], and a liaison statement reporting work progress was issued to WP5B.

3. Next meeting schedule

The next 32nd meeting is scheduled to be held in Búzios (Brazil) from 9 to 17 July 2019.

Seminar for Electromagnetic Environment Committee members 2018

The seminar organized by the Public Relations Subcommittee of Electromagnetic Environment Committee was held on 26 February 2019 at Yotsuya (Tokyo, Japan), attended by 34 people. This seminar is held every year, aiming at introducing to the committee members the latest research trends on radio wave safety and radio wave protection compatibility, the latest research of the international institutions such as WHO (World Health Organization), ICNIRP (International Commission on Non-Ionizing Radiation Protection, IEEE (The Institute of Electrical and Electronics Engineers, Inc.) and NTP (National Toxicology Program).

The program was as follows.

	Speaker	Title
(1)	Dr. Katsumi Imaida	Previous studies on carcinogenic risk using
	Professor of Kagawa University	animals
(2)	Dr. Toshio Nojima	A consideration of the effect of radio waves
	Emeritus Professor,	
	Hokkaido University	



Electromagnetic Environment Committee Seminar

After the lecture, an informal meeting was held to exchange information mainly on the electromagnetic environment between the lecturers and attendees.

The 2nd CPM-19 meeting

CPM-19 (Conference Preparatory Meeting for WRC-19) has a role to create a CPM report for the World Radio Conference (WRC-19) to be held from 28 October to 22 November 2019. The CPM Report is to present multiple solutions from different points of view and the accompanying revisions to the RR (Radio Regulations) for each Agenda of the WRC. Discussions will be held toward a final agreement based on this CPM Report at WRC-19. The first meeting was held for two days from 30 November 2015, immediately after the WRC-15 meeting, where the Working Group to carry out the expert syudy and responsible for WRC-19 agenda and the work plan was decided. Since then, the study of frequency sharing and drafting of CPM Report based on the study has been conducted in each Working Group.

At this second (and the last) meeting which was chaired by Mr. Khalid AL-AWADI from the United Arab Emirates, the final deliberation for the completion of the CPM Report was conducted based on the draft.

Schedule	From 18 to 28 February 2019	
Venue	ITU Headquarters and the International Conference Centre Geneva (Geneva, Switzerland)	
Participants	1304 people from 107 countries (83 organizations)	
Participants from Japan	70 people (including 3 people from ARIB) headed by Ms. Fukahori (International Frequency Policy Office, MIC)	

1. Overview of the meeting



The 2nd CPM-19 meeting

2. Main results

(1) AI 1.11: To facilitate global or regional harmonized frequency bands to support railway radiocommunication systems between train and trackside within existing mobile service allocations

Three Methods described below were concluded.

- > Method A: RR should not be amended.
- Method B: Draft a new Resolution for frequency harmonization (WRC-19) and describe specific frequencies in it. Refer to ITU-R Recommendation M.[RSTT_FRQ] (under development).
- Method C: Draft a new Resolution for frequency harmonization (WRC-19), and refer to ITU-R Recommendation M.[RSTT_FRQ] (under development) for detail.
- (2) AI 1.12: To consider possible global or regional harmonized frequency bands, to the maximum extent possible, for the implementation of evolving Intelligent Transport Systems (ITS) under existing mobile-service allocations

Three Methods described below were concluded.

- > Method A: RR should not be amended.
- Method B: Draft a new Resolution for frequency harmonization (WRC-19) and describe specific frequencies in it. Refer to ITU-R Recommendation M.2121 for detail.
- Method C: Draft a new Resolution for frequency harmonization (WRC-19). Refer to ITU-R Recommendation M.2121 for detail.
- (3) AI 1.13: to consider identification of frequency bands for the future development of International Mobile Telecommunications (IMT), including possible additional allocations to the mobile service on a primary basis

A total of 39 contributions were input for each IMT candidate frequency band. But various opinions presented including both IMT promotion and opposition led to the draft Report on which all suggestions were reflected due to limited time. (The opposite opinions were both described with View.) The main conflict points in identifying IMT frequency bands are listed below.

- > Unwanted emission specification for protection of earth exploration satellite (passive) in adjacent band
- Limiting method on IMT transmission for space station protection of fixed-satellites service in the same band

(4) AI 1.16: To consider issues related to wireless access systems, including radio local area networks (WAS/RLAN), in the frequency bands between 5150 MHz and 5925 MHz

Although two new methods have been added for 5150-5250 MHz band, which is being considered for outdoor use, Method A3 proposed by Japan remains effective.

Revise resolution 229 (WRC-12) to the same specification (technically, regulatory) as specified in 5250-5350MHz, with an upper limit of eirp 1Wwhich can be used outdoors while protecting existing services.

3. Future meeting schedule

Discussions will be held at the World Wireless Communication Conference (WRC-19) to be held from October to November 2019, based on the CPM Report drafted at this meeting.

APT Training Course 2018 in ARIB "Actions for Next and New Generation Mobile Communication Systems"

As a part of APT (Asia-Pacific Telecommunity) training course "Actions for Next and New Generation Mobile Communication Systems" (co-organized by MIC and YRP R&D Promotion Association, supported by ARIB), the lectures by ARIB, Country Report presentation from each trainee and tours of communication equipment vendors were held on 7 and 11 March 2019. Thirteen trainees from twelve governmental organizations in Asia and the Pacific (Afghanistan, Bangladesh, Bhutan, Hong Kong, Iran, Lao PDR, Malaysia, Mongolia, Myanmar, Samoa, Thailand and Tuvalu) participated. Programm is described below.



Trainees and Lecturers

Lectures from ARIB				
Date	Title	Leo	cturer	Venue
7 Mar.	Standardization of Radio Systems – Activities of ARIB –	Mr. Kiyoshi SU Director, Planning and Affairs Depa	JGIBAYASHI l International rtment, ARIB	ARIB (Tokyo)
7 Mar.	Recent Activities of 5G Standardization in ARIB and Japan	Mr. Seiji NISH Executive Di R&D Headqu	TIOKA rector, arters, ARIB	ARIB (Tokyo)
11 Mar.	International Standardization Activities on ITS Info-Communication System	Mr. Satoshi OYAMA Senior Researcher, R&D Headquarters, ARIB		ARIB (Tokyo)
Country	Report Presentation			
Date	Title		Presenter	Venue
7 Mar	 r 1) Introduction about presenter him/herself (Organization, Position, Job) 2) Hot issues in each country in regard with the mobile telecommunication 3) Presenter's involvement with mobile telecommunication 4) How will this training course be utilized to trainee's present and future job? 		Each trainee	ARIB (Tokyo)
Tour of a telecommunication system vendors				
Date	Title	Lecturer /	Coordinator	Venue
7 Mar.	NEC Vision of 5G – Network & Social Transformation	Mr. Yuki TANAKA Mr. Takeyoshi MUSHIKA		NEC Corporation (Tokyo)
11 Mar.	Fujitsu's R&D Activities Toward 5G	Dr. Hiroyuki Seki Ms. Jeewan PAK Mr. Kousuke Tomiyasu		Fujitsu Laboratory (Kanagawa)



Lecturer from ARIB (From left) Mr. Sugibayashi, Mr. Nishioka, Mr. Oyama



Country Report Presentation and Q&A



Tour of NEC



Tour of Fujitsu

Adoption of Japanese Digital Terrestrial TV Broadcasting System (ISDB-T System) in the Republic of Angola

The Republic of Angola (hereinafter referred to as "Angola") decided on 20 March 2019 (Angola local time) to adopt the Japanese digital terrestrial TV broadcasting system (ISDB-T system) for its digital terrestrial TV broadcasting (DTTB). Angola is the 20th country adopted the ISDB-T system.

(Reference)

<Integrated Services Digital Broadcasting-Terrestrial (ISDB-T)>

There are four major international standards for digital terrestrial TV broadcast (Japanese, European, US, and Chinese standards). The Integrated Services Digital Broadcasting-Terrestrial (ISDB-T) system (the Japanese digital terrestrial TV broadcasting system) has the advantage of achieving broadcasting for both fixed terminals and mobile terminals with a single transmitter and enabling network construction with efficient capital investment. In addition, the function of broadcasting anywhere and even in times of disaster or blackout. Moreover, the function of emergency warning broadcasting is also effective as a countermeasure for disasters.

<Countries that have adopted ISDB-T System>

Brazil, Peru, Argentina, Chile, Venezuela, Ecuador, Costa Rica, Paraguay, Philippines, Bolivia, Uruguay, Botswana, Guatemala, Honduras, Maldives, Sri Lanka, Nicaragua, El Salvador, Angola (In order of time).

Joint Taiwan-Japan Workshop on Application Development in 5G Era

A workshop aiming at promotion of service and applications for 5G was held in Taipei (Taiwan) in March co-hosted by ARIB and TAICS (Taiwan Association of Information and Communication Standard). This workshop targets consumers, operators, equipment vendors, content operators, etc., and was attended by experts from MIC (Ministry of Internal Affairs and Communications) and the 5GMF (The Fifth Generation Mobile Communications Promotion Forum), from Japanese side.

[Background of the Workshop]

5GMF Application Committee (Chairperson Mr. Iwanami) has conducted trend surveys of smartphone users four times in Japan, three times in Taiwan so far. In the survey in Taiwan, TAICS - a standardization body of the country - has given the committee full cooperation.

1. Overview of the Workshop

Schedule	13:30 - 17:00, 27 March 2019
Venue	Nangang Exhibition Center (Taipei, Tiwan)
Organizer	TAICS, ARIB
Supported	5GMF (Coordinator)
Audience	About 200

2. Session

Presenter	Title
Mr. Ching-Jiang Hsieh Chairman, TAICS	(Opening Remarks)
Dr. Shigeki MORIYAMA Executive Director, ARIB	
Mr. Hao-chu Lin Specialist, Taiwan Ministry of Economic Affairs	
Session1: Activities for 5G in Japan	
Mr. Yuki Arimura Assistant Director Land Mobile Communications Division, MIC	Policy for 5G promotion
Mr. Yoshinori Ohmura Deputy Secretary General 5GMF	Activity on 5GMF Application Committee and perspective on Mobile Market in Japan
Mr. Hiroshi Uchida CEO Ideafront, Inc.	Research and Consideration on the Use Case Survey of Smartphone
Mr. Ryuichi Sumi VP, General Manager NIPPON TELEGRAPH AND TELEPHONE CORPORATION (NTT)	Application Development towards 5G
Session2: Activities for 5G in Taiwan	
Mr. Don-gan Yang Department of IT, Ministry of Economic Affairs	Meeting the advent of the 5G era; The promotion strategy of the Taiwan government
Ms. Mei-Ling Chen Researcher Industrial Technology Research Institute	Where are the business opportunities in the 5G era?

Mr. Jia-Wu Hsieh	Trend of application in 5G era
Deputy Managing Director	
Chunghwa Telecom	
Mr. I-Kang Fu	Vision on Beyond 5G Service
Senior Manager	Requirement
MediaTek Inc.	
Session3: Panel Discussion	
[Moderator]	How does smartphone application in
Dr. Sheng-Lin Chou,	the 5G era change our lives?
Secretary General, TAICS	
[Panelists]	
Mr. Arimura MIC	
Mr. Ohmura 5GMF	
Mr. Uchida Ideafront	
Mr. Sumi NTT	
Ms. Chen ITRI	
Mr. Hsieh Chunghwa Telecom	
Mr. Fu MediaTek	



(from the left) Mr. Hsieh, Mr. Lin, Mr. Arimura, Dr. Moriyama



Joint Taiwan-Japan Workshop on Application Development in 5G Era

The 22nd Global Standards Collaboration (GSC-22) meeting

Global Standards Collaboration (GSC) meeting has been held once a 1 - 1.5 year aiming to exchange information about the standardization activities related to ICT among the representatives and experts of the telecommunication standardization institutions around the world, to avoid duplication of consideration by the SDOs (Standards Development Organizations) and to develop the strategy of cooperation and collaboration between the SDOs to promote the global standardization.

The 22nd GSC meeting was held on March 2019, co-hosted by IEC and ISO. The outline of this meeting was as follows.

1. Overview of the meeting

Schedule	26 - 27 March 2019
Venue	Grand Hotel Suisse Majestic (Montreux, Switzerland)
Participating Organizations	12 GSC members (*1) and related organizations (*2)
Participants	97 participants, including guests (2 participants from ARIB)



GSC-22 Conference hall

Presentation by ARIB

2. Summary of the meeting

Following the latest reports from each SDO (Standards Developing Organization), the issues: (1) Smart Sustainable City, (2) Artificial Intelligence, selected at the teleconferences that had been held prior to the meeting, were focused, on which presentations and discussions were conducted respectively.

Discussion for each issue is summarized as follows. (excerpted from the communique)

(1) Smart Sustainable City

Cities face a huge task and significant challenges in choosing suitable standards for Smart City requirements. GSC members shared their views on standards relevant to Smart Sustainable Cities and Communities. Members encouraged continued discussion, particularly on the development of guidelines and standards to enable seamless data exchange and interoperability.

(2) Artificial Intelligence

GSC members shared their ongoing activities on AI and machine learning and their applications in domains such as 5G, healthcare and industrial manufacturing, recognizing different regional needs. Potential issues related to security, privacy, trustworthiness, ethics, societal concerns and regulation were given specific consideration.

♦ Communiqué

As a result of the meeting, a communiqué incorporating the outline of the content of the discussion was created and released, declaring that GSC members might cooperate to address the ethical and societal aspects of ICT systems, services and technologies.

3. Next meeting schedule

The next 23rd meeting (GSC-23) is scheduled to be held in the United States between August 2020 and middle 2021.



Group Photo of GSC-22 Participants

*1 : GSC member organizations	
ARIB (Association of Radio Industries and Businesses)	Japan
ATIS (Alliance for Telecommunications Industry Solutions)	USA
CCSA (China Communication Standards Association)	China
ETSI (European Telecommunications Standards Institute)	Europe

IEEE	-SA (IEEE- Standards Association)	-
IEC	(The International Electrotechnical Commission)	-
ISO	(International Organization for Standardization)	-
ITU	(International Telecommunication Union)	-
TIA	(Telecommunications Industry Association)	USA
TSDS	I (Telecom Standards Development Society, India)	India
TTA	(Telecommunications Technology Association)	Korea
TTC	(The Telecommunication Technology Committee)	Japan

*2: Related and Guest organizations

EC, DT, Qualcomm, ZTE, CISCO, Huawei, Intel, TCS, etc.

Monthly seminars on radio wave use		
No.165 1	8 January 2019	
Title In	atest trends in Radio Wave Use for Robots and Drones toward the ndustrial Revolution in the Sky	
Speaker	 Ir. Takehiro Ishiguro Deputy Director Land Mobile Communications Division, MIC (Ministry of Internal Affairs and Communications) Ir. Osamu Akimoto Secretary-General JUTM (Japan Unmanned System Traffic & Radio Management Consortium) Ir. Yasushi Hada Project General Manager JUTM Associate Professor Kogakuin University 	

Standards (

1. Newly established Standards at Standard Assembly on 21 January 2019

No standards were newly established at the Assembly.

2. Revised or abolished Standards at Standard Assembly on 22 January 2018

(1) Telecommunications field

STD Number	Standard Name	Version
STD-T99	150 MHz-Band Person/Animal Detection Report System Equipment for Specified Low-Power Radio Station	Ver.4.1
STD-T120	IMT Systems based on 3GPP Specifications ARIB STANDARD	Ver.1.10

(2) Broadcasting field

STD Number	Standard Name	Version
STD-B62	MULTIMEDIA CODING SPECIFICATION FOR DIGITAL BROADCASTING (SECOND GENERATION)	Ver.2.1



Association of Radio Industries and Businesses

ARIB SEASON Publishing

1-4-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-0013 JAPAN https://www.arib.or.jp/english/