ITU-R  RA  IMT

## ●Standardization●

# ITU Radiocommunication Assembly 2015 (RA-15) Report
# —Future Mobile Phone Technologies Standardization—

*The ITU-R Radiocommunication Assembly was held from October 26-30, 2015 in Geneva, Switzerland, to reconsider ITU-R study structures and working methods, and approval of ITU-R Resolutions, Recommendations and Questions. This article focuses on the topics related to future of mobile phones, and their outcomes.*

Network Department  **Masayoshi Tachiki**
**Takumi Togi**
Radio Access Network Development Department  **Hiroyuki Atarashi**
Wireless Technology Standardization Department  **Akira Hashimoto** [†]

## 1. Introduction

The International Telecommunication Union (ITU) Radiocommunication Sector (ITU-R) has jurisdiction over standardization of radiocommunication technology specifications and spectrum utilization etc. As shown in **Figure 1**, ITU-R studies radiocommunication technologies and spectrum utilization etc. by establishing Study Groups (SGs) responsible for specific areas of radiocommunication and Working Parties (WPs) under each of the SGs. WP5D under SG5 is the working party responsible for studies on International Mobile Telecommunications (IMT), which covers mobile phones from 3G beyond.

The association that discusses the overall activities of the ITU-R is the Radiocommunication Assembly (RA),

which normally convenes once every three to four years. As shown in Fig. 1, RA is the parent organization of the SGs, and in relation to ITU-R study structure, deliberates on the structure of SGs, appoints chairman and vice-chairmen to the SGs, deliberates on working methods such as approval processes for various ITU-R documents, and deliberates on approval for individual ITU-R Resolutions, Recommendations and Questions. 2015 was the first year that RA was held since 2012. Dubbed RA-15, the assembly was held from October 26 to 30, 2015.

This article provides an overview of RA-15, and reports on its deliberations and their outcomes, such as approval for new ITU-R study structures and ITU-R Resolutions on IMT.

## 2. RA-15 Overview

RA-15 was attended by some 460 people from a range of associations such as various administrations of 107 of the 193 member states of the ITU and international organizations. There were 30 attendees from Japan, from the Ministry of Internal Affairs and Communications, telecommunications operators and research institutions. Four staff from NTT DOCOMO attended.

**Figure 2** shows the RA-15 conference structure. As is customary, the RA plenary meeting chairman is appointed from a retiring SG chairman from the corresponding study session. Following this tradition, Dr. Akira Hashimoto (one of the authors of this article), who had served as the chairman of SG5 for two study peri-
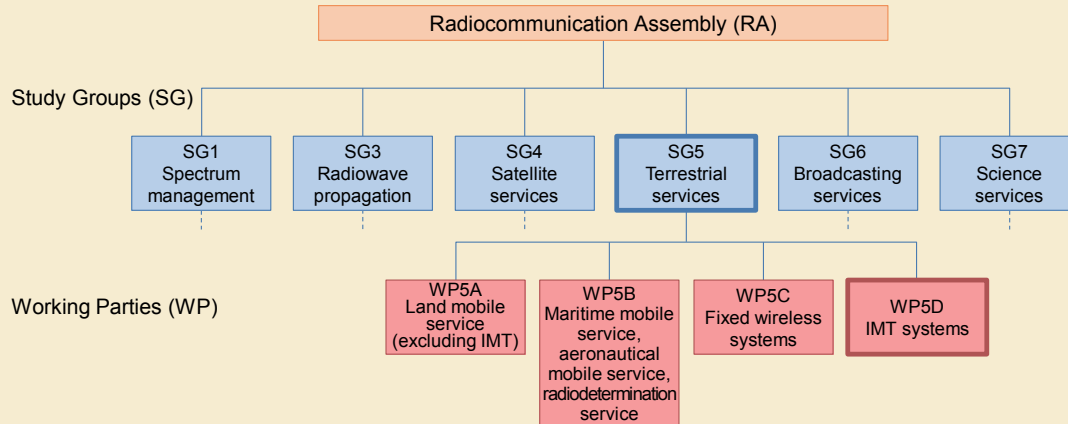
† Currently Network Department

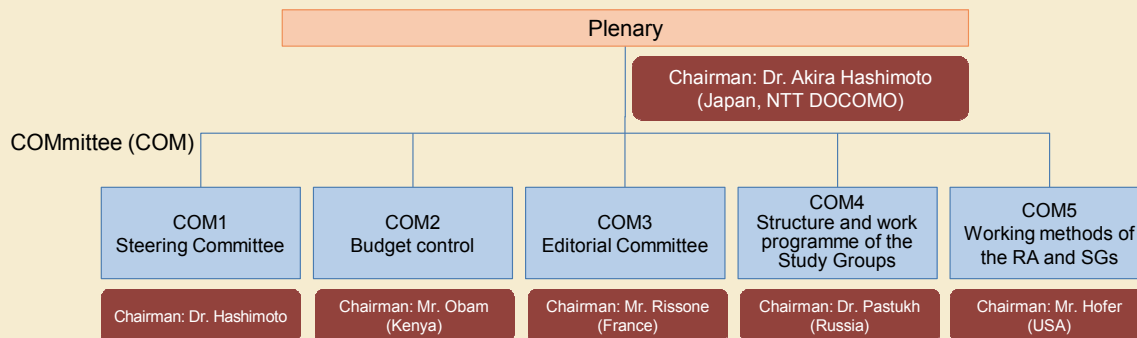**Figure 1   ITU-R study group structure**



**Figure 2   RA-15 conference structure**

ods from the 2007 Radiocommunication Assembly (RA-07), was appointed to the position.

## 3. RA-15 Content of Deliberations

### 3.1 SG Structure and Appointment of SG Chairman and Vice-chairmen

There were no proposals to re-structure SGs at RA-15, hence, the SG structure described in Fig. 1 was maintained.

**Table 1** is a list of the SG chairmen appointed at RA-15.

Being in their second period, the existing chairmen of SG1 (Spectrum management) and SG4 (Satellite services) were reappointed, while new chairmen were appointed to SG3 (Radiowave propagation), SG5 (Terres-trial services), SG6 (Broadcasting services) and SG7 (Science services). From Japan, NHK's Dr. Yukihiro Nishida was appointed to chairman SG6.

SG vice-chairmen were also appointed from candidates from various nations. From Japan, Dr. Hiroyuki Atarashi (one of the authors of this article) was appointed as vice-chairman of SG5, and KDDI's Mr. Nobuyuki

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**Table 1    Study Group chairman and vice-chairman appointments**

| SG | Scope | Chairman | Vice-chairmen |
|---|---|---|---|
| SG1 | Spectrum management | Dr. Pastukh (Russia) | 14 persons |
| SG3 | Radiowave propagation | Mrs. Wilson (Australia) | 9 persons |
| SG4 | Satellite services | Mr. Hofer (ViaSat (USA)) | 15 including Mr. Kawai (Japan, KDDI) |
| SG5 | Terrestrial services | Mr. Fenton (U.K.) | 18 including Dr. Atarashi (Japan, NTT DOCOMO) |
| SG6 | Broadcasting services | Dr. Nishida (Japan, NHK) | 14 persons |
| SG7 | Science services | Mr. Zuzek (USA) | 8 persons |

Underlined: Reappointed

Kawai was reappointed as vice-chairman of SG4.

This means that Japan has kept the same numbers of chairmen and vice-chairmen from the previous period (formerly one SG chairman (SG5 chairman Dr. Hashimoto) and two vice-chairmen (SG4 vice-chairman Mr. Kawai and SG6 vice-chairman Dr. Nishida)).

### 3.2   Review of ITU-R Work Methods

There were discussions on revising ITU-R Resolution 1, which defines working methods in all ITU-R groups (SGs, WPs etc.), and approval procedures for ITU-R documents (Resolutions, Recommendations, Reports etc.). This revision at the RA-15 mainly focused on reviewing the structure of the Resolution, such as separating descriptions of approval procedures for documents and working method into different chapters, but be-cause controversies on adopting ITU-R Recommendations have often occurred due to unreached consensus, expressions about provisions on "reaching consensus" were reviewed and clarified.

Also, to make studies and considerations in ITU-R more efficient, revision of ITU-R Resolution 2, which defines ITU-R working methods, was approved. This includes integrating the special committee (SC) set up to study World Radiocommunication Conference (WRC)[*1] agenda from the perspective of regulatory matters, with the WRC Conference Preparatory Meeting (CPM)[*2], and slightly shortening the CPM session.

### 3.3   IMT-related Deliberations

Regarding mobile phones, radio interface specifications, unwanted emissions provisions and spectrum usage methods etc. for IMT-2000 systems corresponding to 3G mobile phone systems and the successor development system IMT-Advanced systems, which are successor development systems of IMT-2000 systems, are defined in ITU-R Recommendations. Based on these Recommendations, various countries have established mobile phone technological standards etc., which has contributed to the international spread of mobile phones in terms of roaming, equipment and terminal procurement. WP5D, which is the responsible working party for studies on IMT systems, has begun studying mobile phone systems for 2020 and beyond, in view of the rapid increase in mobile traffic and the expansion of usage scenes with the Internet of Things (IoT)[*3] etc.

In addition to the terms of "IMT-2000" and "IMT-Advanced," the term "IMT-2020" was officially approved as the mobile phone systems for 2020 and beyond, which was reflected in ITU-R Resolution 56, relating to IMT

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***1    WRC:** A conference that reviews, and if necessary, revises Radio Regulations, the international treaty governing the use of radio-frequency spectrum, and the orbits of geostationary and non-geostationary satellites. The conference normally meets once every three to four years, and is attended by the administrations of various countries, and related organizations including operators which are registered to ITU.

***2    CPM:** The Conference Preparatory Meeting. A meeting to develop a report for con-sideration by the WRC, which summarizes ITU-R SG study results and other WRC-related discussions.

***3    IoT:** A General term for controls and data communications between various "things" connected via the Internet or cloud services.

terms. In this Resolution, the term "IMT" is used as the root name for all international mobile phone telephony, which is appended as IMT-2000, IMT-Advanced and IMT-2020 system designations, depending on radio interface specifications.

Also, a new draft Resolution to define the principles of IMT development processes for 2020 and beyond were deliberated, and ITU-R Resolution 65 was approved for developing ITU-R Recommendations for IMT-2020 requirements and radio interface specifications and so forth in future ITU-R activities. IMT-2020 usage scenes and draft requirements have already been established in Recommendation ITU-R M.2083.

In addition, other ITU-R Resolutions regarding IMT were revised, ITU-R Recommendations on IMT were approved after the conclusion was carried forward to RA-15 having had adoption shelved in SG5, while maintenance of Questions on IMT was approved.

## 3.4 Others

Apart from IMT, various other radiocommunication systems were deliberated in RA-15, 33 ITU-R Resolutions were approved (six new, 22 revisions of existing, five abolishments), seven ITU-R Recommendations for which consensus was not reached in SGs were approved (four new, three revisions of existing), and Questions were approved etc.

Mobile services related items include new Resolutions defining IoT-related studies in ITU-R (Resolution ITU-R 66), and new Questions on visible light communications.

## 4. Conclusion

This article has provided an overview of RA-15, and reported on its deliberations and their outcomes, such as approval for new ITU-R study structures and ITU-R Resolutions on IMT.

As ITU-R Resolutions on the term "IMT-2020" and principles of IMT development processes for 2020 and beyond have been approved in RA-15, standardization of IMT-2020 radio interfaces will take place in WP5D, which is the working party responsible for studies on IMT systems under SG5.

Also, since many administrations are highly interested in IMT, regardless of whether they are in developed or developing countries, there is the important issue of Japan maintaining its leading role in standardization of IMT radio interface specifications and spectrum usage while cooperating with the administrations of the various countries and regions around the world to decide how to reflect these standards in ITU-R Recommendations and so forth.

With the appointment of the SG5 vice-chairman from Japan, Japan must continue its proactive contribution to this standardization work.