

= A Serial Introduction Part 3= Winners of ITU-AJ Encouragement Awards 2015

In May every year, the ITU Association of Japan (ITU-AJ) proudly presents ITU-AJ Encouragement Awards to people who have made outstanding contributions in the field of international standardization and have helped in the ongoing development of ICT.

These Awards are also an embodiment of our sincere desire to encourage further contributions from these individuals in the future.

If you happen to run into these winners at another meeting in the future, please say hello to them.

But first, as part of the introductory series of Award Winners, allow us to introduce some of those remarkable winners.

Yoshinori Kawana

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Fields of activity: JICA



Technical cooperation in the launch of Argentina's ISDB-T terrestrial digital broadcasting system

Thank you for this prestigious international activities award.

I worked as an on-site JICA specialist during the deployment of Argentina's ISDB-T terrestrial digital broadcasting system. After Argentina first started terrestrial digital broadcasting the capital city Buenos Aires in April 2010, a plan was drawn up to extend coverage to 75% of households by building a total of 47 relay stations in 23 provincial capitals and major cities throughout the country. I recommended that the government agencies allocate at least two broadcast frequencies for each network, but was told this would not be possible due to a lack of available bandwidth and the need to begin broadcasts nationwide as early as possible. We therefore used the same frequency at relay stations throughout the country.

At first, it was feared that this would cause widespread interference issues. However, since the inhabited regions of Argentina are small compared to the overall size of the country, there are only limited cases where a viewer's household receives signals from more than one relay station. We therefore decided that it would be possible to avoid large-scale interference, and went ahead with the implementation of this system.

In urban areas where the relay stations are concentrated, we had to construct a single frequency network (SFN), which is

one of the features of the ISDB-T system. Since Argentina has a large land area, we initially planned to broadcast the signals by satellite. However, implementing a SFN requires adjustment of the signal delays, so for relay stations in urban areas we switched to transmission via optical cables and expanded the broadcast area by measuring and adjusting the signal transmission timings for each relay station.

In this international cooperative project, I felt that technical cooperation in countries that have adopted the ISDB-T system can not only promote the spread of terrestrial digital broadcasting, but can also build relationships with related industries and promote technical cooperation across the whole ICT sector. In the future, I hope to continue working on international cooperative projects, as well as on the development of broadcasting technology and equipment maintenance.

Finally, I hope that the development of terrestrial digital broadcasting in Argentina will benefit the country's society and culture by enriching the lives of its citizens. Also, I would like to thank everyone at the Ministry of Internal Affairs and Communications, ARIB, the Japanese Embassy in Argentina, JICA, the manufacturers of broadcast equipment, and Japan Broadcasting Corporation for their support in this endeavor.

Kohei Kambara

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Fields of activity: ITU-R, APT, APG, WP5A, WP6A, JTG4-5-6-7, WRC-15



A study of sharing and compatibility between broadcasting and other services on the WRC-15 agenda

I am truly honored to receive this distinguished award. I would like to take this opportunity to thank everyone who helped with this project.

The WRC (World Radiocommunication Conference) is a major international conference held roughly every four years to review the Radio Regulations that define international usage of radio frequencies. Since most of the frequencies are already used

with various applications, before allocating frequencies for a new application, it is first necessary to perform adequate technical studies to ensure that existing applications will not be adversely affected. It is important to hold discussions at an international level because radio waves can cross international borders between neighboring countries.

One of the agenda items at WRC-15 was the additional

frequency allocation for IMT (International Mobile Telecommunications), for which the proposed candidate was the broad frequency range from 470 to 6425 MHz. In this range, the frequencies from 470 to 710 MHz are used for terrestrial digital broadcasting in Japan. Therefore, it was essential to conduct a technical study on the effects of IMT on broadcasting.

Since this agenda was created at WRC-12, technical studies relating to the sharing and compatibility of broadcasting and IMT have been performed worldwide. However, hardly any studies have been done (as of 2014) regarding the effects on the ISDB-T system used for digital terrestrial broadcasting in 17 countries around the world, including Japan. Therefore, studies had to be conducted from first principles. At first, we were not sure what approach to take in these studies. After careful consideration, we performed

an interference simulation assuming an ISDB-T receiver model. We submitted contributions to joint task group JTG 4-5-6-7, which was formed to perform technical studies on this agenda item. Since the ISDB-T system was developed in Japan, we were expected by the other countries using this system to lead these technical studies. The content of Japan's contribution was well received by other countries. As one of the countries using the ISDB-T system, Argentina also submitted the results of a study, and these results were adopted in report ITU-RBT.2337 and the CPM report, which formed the basis of discussions at WRC-15.

In the future, as a broadcast engineer, I hope to help ensure that frequencies used for broadcasting are adequately protected and to contribute to the development of the broadcasting service.

Hiroshi Fujita

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Fields of activity: JICA, Design and maintenance of digital terrestrial broadcasting network



Enriching people's lives through the spread of terrestrial digital broadcasting

From April 2010, I spent a year stationed abroad as a JICA specialist to support the introduction of terrestrial digital television in Venezuela, which is the fifth country in South America to adopt Japan's ISDB-T terrestrial digital television system. In this capacity, I worked on terrestrial digital broadcasting facilities of the country's state-owned broadcaster in a project of the Ministry of Internal Affairs and Communications accompanying the adoption of the Japanese system in Venezuela's terrestrial digital television. I also acted as a coordinator between local technology consultants, local broadcasters, and Japanese manufacturers. Specifically, we started with a study of local broadcast stations. We confirmed that the state broadcaster's base broadcasting station/Los Mecedores transmitter, which is situated at an altitude of 2,000 m in the El Ávila mountains and covers the city of Caracas, and the relay transmitters in the Caracas suburbs are at ideal positions for covering the terrestrial digital service area. Also, based on a survey of the relay transmitters in Venezuela's second city of Maracaibo and a technology trend survey at the South America ISDB-T International Forum, I proposed the introduction of an ISDB-T network in Venezuela.

Next, I advised the technical committee studying the master plan for the introduction of digital television, and helped to steer the proposals towards completion. Furthermore, to promote the spread of terrestrial digital television, we surveyed other South

American countries that have adopted ISDB-T and have already established standards for digital receivers, and it was possible to stimulate the committee's discussions by reflecting the results of this survey, leading to the creation of better standards. Also, as part of the technical support, we arranged activities such as allowing a number of Venezuelan technicians to participate in events in Japan such as the terrestrial digital STB introduction training program, and organizing lectures on the practical implementation of Japanese terrestrial digital broadcasting at terrestrial digital seminars including the fifth anniversary celebrations of the national research institute. In addition, to ensure that terrestrial digital broadcasting equipment can be imported smoothly into Venezuela from Japan, I worked with the secretary of the Japanese Embassy in Venezuela to reduce the customs clearance period for this kind of installation.

Although the period between customs clearance and equipment installation was very short, we were able to launch the delivery of terrestrial digital broadcasting from the Los Mecedores broadcasting stations.

In the future, I hope to research the trends in Central and South America following the adoption of the Japanese terrestrial digital television system, and to examine how far terrestrial digital technology has progressed so far and the future prospects of this technology.