

## = A Serial Introduction Part 2= Winners of ITU-AJ Encouragement Awards 2017

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.

### Yoichi Suzuki

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Fields of activity: ITU-R WP4B



### Standardization of ISDB-S3

It is a great honor to receive the ITU-AJ Encouragement Award, and I would like to express my appreciation for the award and to all those who supported me.

In 2014, Japan completed standardization of the national UHDTV satellite broadcasting standard, which is supported by the ISDB-S3 (Integrated Services Digital Broadcasting for satellite, 3rd generation) next-generation standard for 4K and 8K digital satellite broadcasting. I was closely involved in international standardization of ISDB-S3 at ITU-R SG4 WP4B meetings from July 2014 to September 2016, and played a role in drafting two key ITU-R documents: Recommendation ITU-R BO.2098 and Report ITU-R BO.2397.

Recommendation ITU-R BO.2098 outlines the scope of transmission systems for UHDTV satellite broadcasting, and includes

a detailed summary of ISDB-S3 in ANNEX1, and a table comparing ISDB-S3 and DVB-S2X in ANNEX2.

Report ITU-R BO.2397 outlines the scope of satellite transmissions for UHDTV satellite broadcasting. This document includes a summary of ISDB-S3, outlines Japan's satellite transmission experiments in the 12 GHz BSS band, and provides an overview of the UHDTV satellite broadcasting trial that was initiated in Japan on August 1, 2016.

This was a wonderful opportunity for me to be so closely involved in drafting two highly important ITU documents relating to UHDTV satellite broadcasting in Japan. I look forward to further work with the ITU-R and continued development of satellite broadcasting in Japan.

### Kazuaki Takeda

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Fields of activity: 3GPP



### LTE-Advanced and 5G standardization activities in 3GPP

I am delighted to receive the ITU-AJ Encouragement Award, and express my appreciation to the ITU Association of Japan and to all those who supported me.

Since joining NTT DOCOMO, my research has largely focused on LTE, LTE-Advanced, and 5G wireless access. In 2009, I got involved in developing LTE-Advanced standards in the 3GPP family by working on specifications for the physical layer in Radio Access Network Working Group1 (RAN WG1). For the first few years, I studied basic technologies and ways of moving the deliberations forward, and became fairly proficient at drafting proposals that were reflected in final specifications, and negotiating with delegates from other countries to build consensus.

3GPP began carrying out standardization of 5G in March 2015, and I was assigned as rapporteur of Study Items (SIs) and Work Items (WIs) relating to *new radio* (NR), a wireless access method that is not backward compatible with LTE-Advanced. In my role as rapporteur,

I became keenly aware of how important it was to understand the requirements and unique backgrounds of the different countries and regions involved in order to make progress and move discussion in the standardization ahead. I found it was practically impossible to make any headway so long as the participants continued to stubbornly advocate their own positions without any thought to the backgrounds and views of others. What we have been trying to do recently is move forward with deliberations based on better mutual understanding of the background factors and views of all members, and draft standard specifications that reflect new value for more nations, regions, and individual users.

Through the 5G standardization process, the goal is to create a wireless network that continues to provide value to consumers for the coming decade and beyond. I remain committed to ongoing growth and development of the mobile industry through involvement in the standardization process.

## Kazuhiro Takaya

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Fields of activity: Environment, climate change and circular economy (ITU-T SG5)



### Standardization activities in ITU-T SG5 toward realization of recycling-oriented economic society

I am really honored to receive the ITU-AJ Encouragement Award. I would like to thank the ITU Association of Japan, and all those who supported me.

Since 2007, I have been closely involved in standardization activities as a member of ITU-T SG5. When I first joined SG5, the primary role of the study group was to investigate electromagnetic compatibility and lightning protection. Since then, however, we've seen rapid evolution of DSL systems, FTTH systems, wireless LANs, mobile communication systems, and other ICT systems as the entire telecom equipment environment has been dramatically transformed. This has made it critically important that we accurately identify the requirements corresponding to these evolutionary changes. Here we helped implement effective ITU-T Recommendations by providing NTT field data required to define these requirements.

Meanwhile, we also began to investigate electromagnetic security in order to counter deliberate (malicious) electromagnetic interference using SCOPE (Strategic Information and Communications R&D Promotion Programme) developed by the Ministry of Internal Affairs and Communications. Since then, Japan has been in the forefront

of efforts to develop Recommendations relevant to electromagnetic security, and has pushed through a whole series of Recommendations: ITU-T Rec. K.78, K.81, K.84, K.87, and K.115.

During the last study period, environment and climate change were also added to SG5's workload with the goal of leveraging ICT to achieve a more sustainable society. The rapid dissemination of mobile communications in developing countries has raised concern about potential health effects of exposure to electromagnetic fields, and this has led to an influx of new participants from non-Western countries. In my role as Associate Rapporteur for Question 8/5 dealing with EMC issues in home networks, I became keenly aware of how closely interconnected ICT is with the "environment" and "safety."

In the current study period, 5th generation mobile networks (5G) and other new communications systems will become available. Given our mission to mitigate environmental impacts, our study group will pursue standardization activities supporting the recycling-oriented society, that is, a society that leverages ICT to make the most effective use of resources and energy while producing zero waste by exploiting ICT. I am fully committed to doing everything I can to promote the sustainable society as Vice Chairman of SG5.

## Kengo Tsuda

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Fields of activity: ITU-R WP6A, WP5C



### Moving toward deployment of 8K broadcasting

I feel honored to have received the prestigious ITU-AJ Encouragement Award, and express my sincere appreciation to the ITU Association of Japan and to all those who supported me. Let me also take this opportunity to thank colleagues for their cooperation helping me pursue my activity at the ITU-R.

After moving to my current position, I have been involved in ITU-R activities since the ITU-R SG6 block meeting in the fall of 2014. Up until then, my work had mainly focused on the DSO (Digital terrestrial television broadcasting Switch Over) in Japan, so this work at the ITU-R was my first involvement in an international project. Not only was this my first foray into international work, I didn't know proper ITU-R procedure or etiquette, so I found myself running round in circles. But eventually I began to get good advice first from seasoned Japanese technicians then from some of the onsite overseas experts, and I learned to deal with each challenge that came up.

Among various broadcasting-related topics over the past four years, I have contributed a number of Japan developed broadcasting initiatives in the area of *service ancillary to broadcasting* (SAB)—

including ENG (electronic news gathering) of sporting events, outdoor concerts, etc. as well as TVOB (television outside broadcast)—to the ITU-R. Some of these contributions are now reflected to ITU-R texts. For example, in Working Party 6A (WP6A) which is in charge of terrestrial broadcasting delivery, Report BT.2069 describes the status of efforts to deal with frequency reassignment in Japan, and Report BT.2344 details the status of work in Japan to achieve 8K SAB. And in Working Party 5C (WP5C) which has jurisdiction over fixed wireless systems, the technical attributes of Japan's service ancillary to broadcasting technology using millimetric-wave is mentioned in Recommendation F.1777 and Report F.2323.

Roll out of 8K satellite broadcasting in Japan is scheduled in December 2018, and will be followed less than two years later by the Tokyo Olympics opening ceremony in 2020. We can safely anticipate increased production of 8K content, and this suggests that 8K-enabled service ancillary to broadcasting (SAB) will not be far behind. Through ongoing involvement in ITU-R activities, I would like to make further contributions to broadcasting technology.