

= A Serial Introduction Part 2 = Winners of ITU-AJ Encouragement Awards 2019

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.

Atsushi Kanno

National Institute of Information and Communications Technology (NICT)

kanno@nict.go.jp <https://www.nict.go.jp/en>

Fields of activity: Radio over fiber, ITU-T SG15, IEC TC103, APT/ASTAP



Radio over fiber: towards seamless convergence between wired and wireless systems

I'm greatly honored to receive the ITU-AJ Encouragement Award. I would like to express my appreciation to my colleagues at NICT and related institutes for their valuable help. Also, I would like to thank The ITU Association of Japan and all those involved.

I've been involved with ITU-T SG15, IEC TC103, APT/ASTAP for standardization of a radio over fiber (RoF) transceiver and its applications. RoF technology is utilized for transport of radio signals over optical fiber systems. RoF is commonly used to mitigate radio dead-zones such as underground areas, subways, and mountainous or valley areas. In fourth-generation mobile communication systems, digitized RoF systems are developed for the connection between baseband processing units and remote radio heads, known as the common public radio interface and for other

standardized techniques. Nowadays, fifth-generation mobile communication systems (5G) require broad bandwidth and high data throughput for both radio sections and backend optical fiber systems. As such, implementation of a next-generation RoF system is needed.

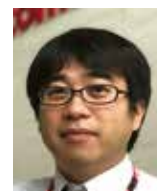
On the other hand, RoF systems are also utilized for non-communication applications such as radar systems. My contribution to the ITU-T has been to form the technical specifications for the RoF system that is part of a foreign-object debris detection system for airport runway surfaces. With the IEC and APT, the transceiver specifications, evaluation methods, and application use cases are published as a standard and a technical report. I hope RoF will support 5G and beyond 5G systems for enhancing user experiences and establishing a safe and secure society.

Yuya Kuno

NTT DOCOMO, INC.

kunoyu@nttdocomo.com <https://www.nttdocomo.co.jp/english/>

Fields of activity: NFV for mobile core network development



Introduction of NFV integrating cloud and telecommunication

I am grateful to receive this Encouragement Award from The ITU Association of Japan. I also appreciate the opportunity to develop network virtualization and finalize NFV standard specifications with many vendors.

NFV is a concept for operation of telecom equipment, consisting of dedicated devices and lines in a cloud and using COTS servers and SDN. I joined the NFV project in DOCOMO in 2014. It was extremely difficult to develop new NFV specifications for stable telecommunication and flexible

cloud operation.

NFV is now at a stage where the standardization and implementation of the basic functions to be put on the cloud have been completed. I hope it will develop into a platform to further improve operational efficiency and accommodate various telecom devices. I will continue to lead NFV as an expert in operations.

Motoharu Sasaki

Nippon Telegraph and Telephone Corporation (NTT)

motoharu.sasaki.cn@hco.ntt.co.jp https://www.ntt.co.jp/index_e.html

Fields of activity: ITU-R SG3, Radio propagation



Radio propagation model standardization activities at ITU-R SG3

I am very thankful to have received this Encouragement Award from the Japan ITU Association. In addition to The ITU Association of Japan, I would also like to express my sincere gratitude to all others involved for their guidance and encouragement.

I have been working with ITU-R SG3, which makes recommendations regarding radio propagation characteristics. When designing and building

new radio communication systems, or discussing allocation of frequencies for new radio systems, it is important to study interference and frequency compatibility with existing systems. By creating and maintaining recommendations for radio propagation characteristics at ITU-R SG3, we provide support for such studies in other SGs. Recently in ITU-R SG3, there has also been active study of radio propagation characteristics in high-

frequency bands (~100 GHz) that are being considered for use with 5th Generation mobile communication systems (5G).

When revising or making new recommendations to cover high-frequency bands, it is essential to base discussion on measurement data. As such, NTT has taken the lead in conducting large-scale measurements in multiple high-frequency bands that have been difficult to measure, covering 800 MHz to 66 GHz and over distances of 1 km and greater. By conducting on-site standardization discussions based on this measurement data, we were able to complete the revision and creation of new recommendations as

mentioned earlier, on schedule. Rather than work on the standardization in SG3 meetings, my involvement with ITU-R SG3 has been focused more on drafting measurement plans, conducting measurements and analyzing data, to obtain the data needed for discussion, and activities prior to participation in SG3 meetings. All of this work, including activity in SG3 meetings, is the result of contributions from many people, and not just my own. I would like to express my gratitude again, and I will continue to contribute to international standardization in the future, encouraged by this award.

Shinya Takeuchi

Japan Broadcasting Corporation (NHK)
takeuchi.s-js@nhk.or.jp <https://www.nhk.or.jp/corporateinfo/>
Fields of activity: Integrated Broadcast-Broadband System, Multimedia broadcasting



Standardization of multimedia broadcasting and Integrated Broadcast-Broadband System

It is a great honor to receive the ITU Association of Japan Encouragement Award, and I would like to express my appreciation for the award to my colleagues at NHK, the members of ITU-R SG6 delegation, and all the people who have supported me.

My activity in ITU started in 2007 with contributions to producing a Recommendation of architecture for synchronized programme transfer with pull operation over IP networks at ITU-T SG9.

Since 2016, I have regularly attended ITU-R WP6B and ITU-T SG9. I have been responsible for the standardization of multimedia systems in broadcasting, and in particular, Integrated Broadcast-Broadband systems (IBB systems). An IBB system simultaneously provides an integrated experience of broadcasting and interactivity relating to media content, data and applications from multiple sources. Hybridcast is standardised as the IBB system in Japan and was launched in 2013. The data service for 4K/8K satellite broadcast services in Japan is also defined as an IBB system. Hybridcast specifications continue to make progress adding functionality of companion-device collaboration and multi-resolution video streaming coding with MPEG-DASH. Meanwhile, ITU-R WP6B is studying the harmonization of the IBB

systems included in Recommendation ITU-R BT.2075 to ensure compatibility with IBB applications and interoperability across systems. My main activity is to develop a recommendation and reports related to IBB systems, reflecting such progress.

In other work related to multimedia broadcasting, I developed a report on closed-captions for digital broadcasting, adding information about ARIB-TTML, the closed-caption standard adopted for 4K/8K satellite broadcast services. I also contributed to producing a report of practical technical solutions for closed signing in digital television, which has been applied to IBB systems.

At ITU-T SG9, I contributed to development of a recommendation for an IBB system on CATV with consideration of work at ITU-R WP6B, as Associate Rapporteur of Q5/SG9.

My position has changed and my current work is to manage services and systems related to the standards to which I have contributed. In this capacity I have realized some of the difficulties in the relationship between developing services and TV receiver implementations. Through standardization activities, I hope to contribute to improving relationships among broadcasting industries, improving the match between service provision and receiver implementation.

Atsushi Takeda

FUJI TELEVISION NETWORK, INC.
atsushi.takeda@fujitv.co.jp <https://www.fujitv.com/>
Fields of activity: ITU-R SG6



International standardization activities in ITU-R SG6

I am very honored to receive the ITU-AJ Encouragement Award. I would like to express my deep gratitude to the members of The ITU Association of Japan and all those involved.

I joined Fuji Television Network, Inc. in 1994, working as a program production engineer (video engineer, cameraman, technical producer). I was interested in the technological evolution of content and viewing experiences, and as a result I became involved in the task of standardizing broadcasting technology.

Since 2016, I have participated in ITU-R SG6 efforts to establish international standardization of broadcasting technology. At the meeting, there was discussion on various standardizations related to UHD TV (4K/8K) for implementation of the new 4K/8K satellite broadcasting, which was launched on December 1, 2018 in Japan.

In 2016, the Association of Radio Industries and Businesses (ARIB) established a task group to clarify the bit-rate requirements for transmission of UHD TV (4K/8K) and HDTV video using the latest video compression technology, ITU-T Recommendation H.265 (HEVC). As a chief of the group, I conducted image quality evaluation experiments, and clarified these

requirements. These results were reported at the ARIB and ITU-R SG6, contributing to the formulation of the domestic standard ARIB STD-B71 and the revision of ITU-R Recommendation BT.1872, which describe the user requirements for digital ENG. We were able to create international standards for the transmission of video materials when producing 4K/8K programs.

In 2018, I compiled use cases on technology for delivering 4K programs to viewers simultaneously with terrestrial broadcasting using an Integrated Broadcast-Broadband (IBB) system that combines broadcasting and broadband. For this, I contributed to revision of ITU-R Report BT.2267.

These contributions are due to cooperation from the Japanese delegation of ITU-R SG6, the Ministry of Internal Affairs and Communications, the Japan Broadcasting Corporation (NHK) and the Japan Commercial Broadcasters Association. I appreciate all the support and take pleasure in being able to participate as a member.

The deliberations on the ITU-R SG6 were handed over to my successor, but I continue to participate in domestic discussions on the subject. We will make every effort to contribute more than ever.