

= A Serial Introduction Part 1 = Winners of ITU-AJ Encouragement Awards 2023

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.

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Fields of activity: 3GPP RAN, O-RAN



Contributions to 3GPP RAN and O-RAN Alliance standardization

I am very honored to have received this prestigious encouragement award from the ITU Association of Japan. I would like to express my sincere gratitude to all at ITU-AJ and everyone else involved.

After I joined NTT DOCOMO in 2011 I worked for about six and a half years on development of commercial mobile phone devices and 3GPP standardization. At 3GPP, I was involved from updating LTE-Advanced to introducing the first edition of 5G NR, standardizing frequency bands among other things. The intense technical discussions with various Japanese and international companies to achieve better communication quality and global harmonization of frequency bands left a strong impression on me.

Currently, I am working in the RAN Plenary to set NTT DOCOMO's standardization policy, mainly on frequency bands

and RF topics. Since July 2022, I also participated in the O-RAN Alliance, in planning of use cases using Open RAN solutions and in administration activities for releases. In work with the O-RAN Alliance I am facing areas that are new to me, such as open interfaces, intelligent functions and virtualization technology, so I am working proactively and studying every day.

In the future at 3GPP, we expect to study the possibilities for 6G, with Release 20 in about 2025. As in the past with 3G, 4G and 5G, NTT DOCOMO will lead discussions on 6G standardization, creating value for customers in the 2030s and contributing to 6G implementation. As part of that effort, I will use the experience I have gained in standardization, from LTE-Advanced through to 5G NR, and work to contribute even a small amount to 6G standardization with 3GPP and the O-RAN Alliance.

Hidenori Iwashita

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Fields of activity: ITU-T SG5



Standardization of soft-error countermeasures in telecommunication equipment

I would like to offer sincere thanks for receiving this prestigious ITU Association of Japan Encouragement Award. I would also like to thank the members of the TTC Soft-error Ad-hoc Committee.

Telecommunication service interruptions thought to be caused by soft errors due to cosmic-ray-induced neutrons (over-writing memory bits) and countermeasures have long been a difficult issue to solve (particularly increasing recently) for development and maintenance of communications equipment. To elucidate this phenomenon, in 2012 I established testing technology that uses an accelerator to cause neutron emissions, which then can reproduce soft errors in communications devices. This enables the effects of soft errors to be understood before they occur, so that improvements can be made to equipment and introduced into operating networks to greatly improve communication quality. To standardize this technology internationally, I proposed new work items for recommendations regarding soft errors, and in 2015, established discussion toward

creating a recommendation. In 2016, a new recommendation, K.124, was established describing this set of recommendations in outline, and starting in 2017, I acted as associate rapporteur for ITU-T SG5 WP1 Q5, to draft the set of recommendations and hold discussions with telecommunications carriers and vendors in Japan and internationally. In 2018, the new recommendations were created: K.130 (Testing), K.131 (Design), K.138 (Criteria) and K.139 (Evaluation). In 2020, I contributed to creating K.150, which summarizes device information required to apply soft error mitigation measures. Currently, communications equipment conforming to these standards, with measures to mitigate soft errors, is being installed in real, operating networks. I am extremely pleased to see technology that I worked on as an international standard. In the future, I hope to continue to contribute to improving the reliability of telecommunications networks.

Chihiro Kito

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Fields of activity: ITU-T SG15 WP2, SG15 Q7 Rapporteur



Standardization activities for maintaining stable, high-quality communications infrastructure

I would like to offer sincere thanks for this ITU Association of Japan Encouragement Award at this time. I am very grateful to all who provided their support for these standardization activities.

In ITU-T SG15 WP2 Q7, which handles discussion related to maintenance and connectivity of outdoor optical physical infrastructure, I proposed a system for a set of maintenance and operation Recommendations for ITU-T, and contributed to organizing maintenance and operation Recommendations by creating new general provisions in L.330 and driving the work as editor for various Recommendations. Until recently operators in each country implemented their own schemes for maintenance and operations, and ITU-T Recommendations related to maintenance were meager. However, with the spread of optical communications, the number of outdoor facilities requiring maintenance by operators has increased dramatically. Thus, creating a standard scheme for managing the quality and reliability of large numbers of outdoor optical facilities

above a certain standard and operating it continuously, in the form of an open ITU Recommendation, is essential to ensure the soundness of optical telecommunications networks globally. I recognize it as a duty of Japan, as a leading country in the spread of FTTH.

Optical communications has permeated life as important infrastructure, and social demand for maintaining high quality, stable communications infrastructure will increase greatly in the future. Japan has issues with maintenance of infrastructure, such as a shrinking workforce and degradation of buildings from the period of rapid economic growth, but there are also many maintenance and operation techniques being proposed using excellent new technologies such as image recognition, drones and optical fiber sensing technologies. I will continue working to promote standardization efforts in this area while following technology trends that can realize improved efficiency and labor saving in operations and maintenance, and to promote technical results from Japan.

Akihiko Sato

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Fields of activity: Digital Terrestrial Television Broadcasting



Activities on International Standardization for New Digital Terrestrial Broadcasting Systems

Thank you so much for the honor of receiving this ITU Association of Japan Encouragement Award. I would like to take this opportunity to express my gratitude to ITU-AJ and the many other people involved, for their guidance and cooperation.

2nd-generation digital terrestrial television broadcasting (DTTB) systems, which utilize the latest video coding and transmission technologies and improve bandwidth efficiency, are being implemented globally, and R&D and trials on the next generation DTTB system is in progress in Japan.

When transitioning to new services using the 2nd-generation DTTB system, new and current systems had to be broadcast simultaneously until receivers supporting the 2nd-generation system had been widely adopted. When there are not enough vacant channels for new services, creating channels can be a major burden for broadcasters. In Japan, research with the goal of introducing new services in the same channel used for existing services began

in 2019, and I also was involved in that research activity. When I started participating in ITU-R SG6 meetings, work on a new recommendation was also in progress, on guidance for introducing new services to help countries considering transition to the new system. I contributed to creating the new recommendation by adding concrete technical methods to introduce new services. Currently, I am contributing to ITU-R SG6 meetings by inputting results of research being done in Japan on the next-generation DTTB system to the meetings and reflecting them in reports and recommendations.

Demand for broadcasting continues to expand. Broadcasting is an efficient means for distribution of video content, and is important infrastructure supporting public safety. I will take this award as encouragement and continue my effort to contribute to international standardization activities and to the advancement and growth of broadcasting.