= A Serial Introduction Part 2= 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;.

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Fields of activity: ITU-T SG2

Standardization of Telecom Numbering

ITU-T Study Group 2 (SG2) develops telecom numbering standards that provide each telephone and networked device with a unique identifier, so this study group plays a critical role in shaping public switched telecom network services and operations. The ongoing worldwide transition to IP-based networks and the emergence of Machine-to-Machine (M2M) services have a tremendous impact on telecom numbering.

I have been closely involved in telecom numbering-related work for SG2 and ETSI, and frequently involved in IETF activities, and other standardization organizations for over ten years from June 2005 up to the present day. For the past several years since 2011 in particular, I served as editor of SG2 and rapporteur of ETSI when we have focused mainly on the challenges of implementing number portability while transitioning to IP networks.

Let us consider a few technical aspects of implementing number portability. Number portability enables subscribers to change their service providers without having to change their existing phone numbers, but this means countries around the world must deploy enormous number portability databases to provide routing data for call processing. The challenge is that in some countries like Japan domestic operators only retain data for their own subscribers, while other countries have a completely different system that enables operators to access other operators' databases as required.

Another challenge of implementing number portability is the substantial nationwide costs of upgrading existing networks. In order to hold down costs and avoid making major changes while shifting to IP technology, it would be preferable to implement some sort of scheme based on the existing legacy system. Considering that number portability is largely a national matter to be implemented by each individual country, it would obviously be beneficial to adopt a greatest-common-divisor approach.

In developing standards that address these challenges, ITU-T SG2 published a supplement on number portability [1] last year in June 2014, and ETSI also issued a technical report on number portability [2] in June 2014.

Finally, let me say that I am honored to receive the ITU-AJ Encouragement Award. For me personally, it has been a wonderful experience to work with study group members and colleagues from around the world, and I am very pleased to know that my efforts have been appreciated.

Notes
[1] ITU-T E.164 Supplement 2, "Number portability," June 2014.
[2] ETSI TR 103 282, "ENUM/ENUM-like options for Number Portability and actual use cases," July 2014.

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Initiatives and looking ahead to the future of 3GPP RAN Working Group 4

It is a great honor to receive the ITU-AJ Encouragement Award. The award recognizes the activities of 3GPP (3rd Generation Partnership Project) RAN Working Group 4 (RAN4) in drafting specifications that define RF transmission/reception characteristics and performance for mobile terminals/base stations, mobile terminal mobility, and a host of other performance-related provisions. Here I will briefly outline my own personal involvement in RAN4 activities up to now.

When I first joined the RAN4 Working Group in 2008, the LTE specification was in the final stage. With the guidance of many experienced predecessors from my company and other Japanese and foreign companies, I was involved in drafting not only common LTE specifications but also an LTE standard dealing with the 800MHz and 1.5GHz frequency bands in Japan.

Then around 2010, RAN4 started to get actively involved in LTE-Advanced, which is more enhanced than regular LTE in terms of data speed and so on, and it seemed like there was suddenly a greater diversity of participants and items to be considered. Carrier aggregation in particular offers a way of realizing very high data rates by accessing separate bandwidths of LTE at the same time, and this technique has been thoroughly discussed and examined by RAN4 over the last few years. Introduction of carrier aggregation will certainly complicate the development of specifications by RAN4 and increase the difficulty of implementing mobile terminals, so this has made us more aware than ever of the need to adopt a common global approach and common standards, so far as possible. By defining the frequency bands used and other technical conditions as a common specification—at least to the extent possible— this should open the way to a far greater number of mobile terminals that comply with this global standard.

Recently, we have seen a sudden transformation from specifying spectra in a way that is domestically available to Japan like 800MHz and 1.5GHz to developing globally available bands like 700 MHz and 1.7GHz spectra. At the same time, we are keenly aware of the high hurdles that must be cleared to complete this standardization work: as standards become more globalized, this increases the number of stakeholders so it becomes harder to make adjustments, and country-specific issues must also be accommodated.

Currently, discussion is ongoing at RAN4 on how to enhance LTE-Advanced even further, while 3GPP also starts to develop 5th Generation Mobile technology from 2016. Since taking over as Vice Chair of RAN4 in August 2015, I have aimed to facilitate discussions and address matters that come before the WG not only as a corporate participant but also as the delegated Vice Chair of the group. During the remainder of my term, I will continue to make contributions and encourage discussion in RAN4 based on the tutelage of my predecessors.

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Through 3GPP Global Standardization Activities Enabling Next-generation Wireless Access Technologies

It is indeed an honor to receive the ITU-AJ Encouragement Award. I would like to express my sincere thanks to the ITU-AJ and to everyone who supported me.

Since joining NTT DOCOMO in 2003, my work has primarily focused on research and development of wireless access technologies for LTE (Long Term Evolution) and LTE-Advanced. In 2011 I was elected Vice Chairman of the 3rd Generation Partnership Project (3GPP) Technical Specification Group Radio Access Network Working Group 1 (TSG-RAN WG1), which is responsible for LTE and LTE-Advanced physical layer specifications, and in 2013 was elected Chairman of the same WG. 3GPP was initially established in 1998 as a partnership project among telecom standard development organizations from different countries and regions around the globe to study new standards for 3G mobile communications technology, but later the scope was enlarged to include development of standards for 4G and even next-generation 5G mobile communications technology. WG1, the group I preside over, is the largest group in 3GPP. We hold six meetings a year, which are attended by about 350 engineers and technicians from around the world. More than 1,000 documents or contributions are submitted at these meetings, and the number of participants continues to grow year after year. From these numbers alone one can get a sense of the importance of WG1 meetings.

The pace with which mobile phone and mobile communications technology has grown is truly phenomenal, and Japan has been a global leader in introducing many of these advanced technologies. The first publicly available 3G mobile communications system was launched by Japan in 2001, then as smartphones became increasingly ubiquitous, this was followed by LTE with far greater capacity and speed in 2010. To meet surging throughput/traffic demands, an LTE-Advanced mobile communications system was deployed in 2014, which promises to deliver true 4G speeds. Currently, 3GPP is gearing up to start work on 5G mobile communications technology, which is expected to go commercial in 2020. 5G is more than just a faster broadband communications technology with greater capacity, for it promises to support the Internet of Things (IoT), the ability to interconnect a host of different devices and equipment (sensors, appliances, vehicles, industrial robots, and much more) to the network. Personally, this extensive application of mobile communications technology across diverse industrial sectors is exhilarating, and I will continue to actively explore these technologies while helping to make them available through global standardization.

Encouraged by this award, I remain committed to global standardization work that enables even a single individual like myself to contribute to the joy and happiness of many people by making mobile technologies available to all.