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CLINICS: Japan's Most Popular Telemedicine System

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BN Gyoen Bldg., 1-17-11 Shinjuku, Shinjuku-ku,
Tokyo 160-0022 Japan
Tel: +81-3-5357-7610 Fax: +81-3-3356-8170
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Publisher: Tetsuo Yamakawa

Editors: Junichi Kishimoto
Kaori Ohno
Naoko Ishida

Letters to *New Breeze*

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e-mail address: kikanshi@ituaj.jp

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About ITU-AJ

The ITU Association of Japan (ITU-AJ) was founded on September 1, 1971, to coordinate Japanese activities in the telecommunication and broadcasting sectors with international activities. Today, the principle activities of the ITU-AJ are to cooperate in various activities of international organizations such as the ITU and to disseminate information about them. The Association also aims to help developing countries by supporting technical assistance, as well as by taking part in general international cooperation, mainly through the Asia-Pacific Telecommunity (APT), so as to contribute to the advance of the telecommunications and broadcasting throughout the world.

Commemorating 50 years since the founding of ITU-AJ

Towards the Next 50 years!

Founded on September 1, 1971, the ITU Association of Japan (ITU-AJ) is commemorating its 50th anniversary with the publication of the 2021 autumn issue of New Breeze. We have reached this milestone through the kind support received from many people over the last half-century, and for this we are sincerely grateful.
On this memorial occasion, we are again reminded of our important role at ITU-AJ with a strong desire to take up the challenges of the next 50 years.
This issue features a collection of 50th anniversary articles. Editors

Tetsuo Yamakawa
President of the ITU Association of Japan

The ITU Association of Japan (ITU-AJ) was founded in September 1971 with the aim of coordinating activities with the International Telecommunication Union (ITU). This year marks our 50th anniversary, which could not have been possible without the support received from many parties and people including the Ministry of Internal Affairs and Communications (MIC), our supporting members, and ITU-AJ employees. On this occasion, I would like to extend my deepest appreciation to all concerned.

Our daily lives have changed a lot due to the COVID-19 pandemic. Today, lifestyles making good use of information and communications technology (ICT) such as teleworking, videoconferencing, and online learning have become commonplace in society. Thanks to progress in the digital transformation, ICT is becoming an even more important social infrastructure that should make great contributions to achieving Sustainable Development Goals (SDGs) of the United Nations. Needless to say, ITU activities such as management of spectrum and satellite orbits, standardization of telecommunications technologies, and support for the development of telecommunications in developing countries will become increasingly important in the years to come.

This is just a personal story, but when I was still a young man directly after entering the Ministry of Posts and Telecommunications, ITU-AJ publications such as "ITU and Japan" and "ITU Research" were used as kinds of textbooks on telecommunications policies.

I particularly remember the media theory of Dr. Junichi Hamada (then an assistant and associate professor at The University of Tokyo) and the institutional lecture of communications policy in the United States (Value Added Network, etc.) of Mr. Hideo Katsube (then at KDD).

My connection with ITU-AJ was later revived after becoming director of the International Policy Division just at the time that H.E Mr. Yoshio Utsumi, then ITU Secretary-General, was pouring much effort into holding the World Summit on the Information Society (WSIS).

Then, in 2007, when I was director-general of the International Affairs Department, I attended for the first time a session of the ITU Council at ITU Headquarters in Geneva. It was so impressive for me that there were many participating countries assembled in a huge conference hall. And as part of daily meetings with some of the member states, I sometimes had a chance to visit a nearby Japanese restaurant where the batter of the tempura struck me as too thick! However, during the time that I was Vice-Minister for Policy Coordination, I attended the ITU 2010 Plenipotentiary Conference in Guadalajara, Mexico and came to realize that the quality of tempura in Geneva was actually quite high. (Incidentally, Japanese cuisine in Europe today is quite amazing to say the least.)

By chance, I recently had the opportunity to meet with Dr. Junichi Hamada (past President and Honorary Professor of The University of Tokyo) and Mr. Hideo Katsube (Chairman and CEO of Knowledge Company, Inc.), which brought back memories of the ITU-AJ publications that I used to read. And now I am writing this article. My experience have been like a well-made story, as if by fate!

Due to the COVID-19 pandemic, ITU-related meetings have basically been held as videoconferences. However, strategically important issues that need be studied at ITU have been piling up such as the expansion of frequencies for International Mobile Telecommunications (IMT) toward 5G and 6G, IoT security management, and standardization of quantum key distribution (QKD) technology. Studies on these topics are steadily moving forward despite the ongoing spread of COVID-19 throughout the world. In June 2022, the World Telecommunication Development Conference (WTDC) is going to take place for the first time in ITU history on the African continent (Addis Ababa).

Japan, as one of the most active participants that has been supporting ITU activities and a member of the Council since 1959, is expected to make further contributions for ITU toward achieving SDGs through digital transformation initiatives. For its part, ITU-AJ will make an even greater effort to meet the expectations of everyone who considers ITU to be an important strategic forum. I look forward to your ongoing support and encouragement in the years to come.

Minister for Internal Affairs and Communications: Message of Congratulations

TAKEDA Ryota
Minister for Internal Affairs and Communications

I would like to extend my heartfelt congratulations to the ITU Association of Japan (ITU-AJ) on the 50th anniversary of its founding. Against the background of this 50-year milestone, I have heard that the recipients of these prestigious awards have made remarkable contributions to the development of information-communications and broadcasting throughout the world through activities of the International Telecommunication Union (ITU). I would like to express my sincere appreciation to all award recipients for their efforts.

Founded in September 1, 1971, the role of ITU-AJ over the last 50 years has been to connect Japan and the world through diverse activities in the ITU, Asia-Pacific Telecommunity (APT), and other organizations in the fields of telecommunications and broadcasting.

Looking back over this 50-year period, Japan has faced a variety of severe economic and social upheavals such as the 1973 oil crisis ("oil shock"), appreciation of the yen following the Plaza Accord, collapse of the bubble economy, Asian currency crisis, 2008 financial crisis ("Lehman shock"), and the Great East Japan Earthquake of 2011. On the other hand, new services and businesses in a wide range of fields have appeared and expanded during this time while social mechanisms and people's attitudes and behavioral patterns have undergone great changes. One of the main reasons for these changes is the evolution of information and communications technology (ICT) centered about the Internet and mobile phones.

The members of ITU-AJ have been key leaders of industry providing vital social infrastructures and facilities related to communications and broadcasting as well as services for a wide array of industries. In this capacity, they have developed energetic business activities and made major contributions to social and industrial infrastructures and facilities while responding in a flexible manner to changing times.

Today, as the COVID-19 pandemic continues to prevail in Japan and throughout the world, ICT has come to be recognized more than ever as a technology essential to human existence and economic activities. Even regions in which digitalization has not been progressing well are now experiencing a wave of digitalization. Moreover, it has been pointed out that making maximum use of digitalization and remote computing can bring about change at the individual, industrial, and social levels and lead to the creation of new value. Global needs with respect to digitalization will only increase in the years to come. For example, Japan has been providing 5G commercial services since March of last year and the number of contracts for 5G services has been increasing dramatically in many countries throughout the world. The global market for 5G services is expected to exceed 70 trillion yen by 2025 and 150 trillion yen by 2030.

With the aim of contributing to digital transformation on a global scale, the Ministry of Internal Affairs and Communications (MIC) will pursue the overseas development of 5G and infrastructure systems such as optical submarine cables. We also seek to promote a common recognition on an international level with respect to the use of AI and the distribution of data. Furthermore, to improve our industrial competitiveness in anticipation of a post-pandemic world, we will promote the development of technologies "Beyond 5G" by bringing together the expertise of both the public and private sectors. We will also support the strategic acquisition of intellectual property and the international standardization of research and development achievements. Through these efforts, we will support the members of ITU-AJ in the challenges they face in the global marketplace and in their activities on international stages such as the ITU.

Against this background, the members of ITU-AJ are expected to be active in a broad range of areas, to create new value, and to bring about business reform while incorporating new technologies and knowledge. I look forward to your further efforts in achieving these goals under the leadership of ITU-AJ.

In closing, I would like to express my sincere respect for the achievements made by the recipients of these awards in commemoration of the 50th anniversary of ITU-AJ. Furthermore, to all members supporting ITU-AJ and its activities, I offer words of congratulations and look forward with great anticipation to further developments in Japan's information-communications industry. I extend my sincere congratulations on the 50th anniversary of the founding of ITU-AJ.

Holding of the "50th Anniversary Ceremony of the ITU Association of Japan"

The ITU Association of Japan (ITU-AJ)
Planning Department

The "50th Anniversary Ceremony of The ITU Association of Japan" was held online on September 1, 2021. This ceremony, consisting of an opening address and congratulatory message, presentation of awards, and a panel discussion, drew about 280 participants.

The ceremony began with a short video presentation titled "50 Years of The ITU Association of Japan" introducing memorable images since 1971, the year of the founding of ITU-AJ.

This was followed by an opening address delivered by Tetsuo YAMAKAWA, President of the ITU Association of Japan. Then, State Minister for Internal Affairs and Communications Masayoshi SHINTANI gave a congratulatory message on the achievements in the past 50 years and future expectations of the association and its supporting members that have contributed to the development of information and communications.

Hideyuki TOKUDA, Chairman of ITU-AJ Award Selection Board, then reported on the selection of winners for the MIC Minister's Award, ITU-AJ 50th Anniversary Honor Award, Special Award, and Commemorative Award, and ITU-AJ Special Achievement Award.

Presentation of the MIC Minister's Award and ITU-AJ awards to award winners then began. The MIC Minister's Award and ITU-AJ 50th Anniversary Honor Award were presented to Mr. Yoshio UTSUMI, who served as Chairman of the ITU Plenipotentiary Conference in 1994 (Kyoto). He was appointed Secretary-General of the ITU in 1998 and demonstrated outstanding leadership for two terms (8 years) until 2006.

In addition, the MIC Minister's Award and ITU-AJ 50th Anniversary Special Award were presented to Dr. Yasuhiko ITO, Dr. Akira HASHIMOTO, and Mr. Makoto MIURA, who, as members or chairmen of the International Frequency Registration Board (IFRB) and Radio Regulations Board (RRB), were actively involved as representatives of Japan in resolving international frequency-related issues. Following this, the ITU-AJ 50th Anniversary Commemorative Award was presented to 11 individuals and ITU-AJ Special Achievement Award was presented to 3 individuals.

The commemorative photo for the ceremony featured Mr. Houlin ZHAO, Secretary-General of ITU, Mr. Masanori KONDO, Secretary-General of Asia-Pacific Telecommunity, Mr. Yasuo TAWARA, Director-General of Global Strategy Bureau, MIC, and the award winners, each of which was taken while communicating over the screen—a scene that could only be captured online.

The second half of the ceremony was devoted to a panel discussion with Mr. Houlin ZHAO, Secretary-General of ITU, Mr. Masanori KONDO, Secretary General of Asia-Pacific Telecommunity, and Mr. Yasuo TAWARA, Director-General of Global Strategy Bureau, MIC under the theme of "International Standardization Activities; Yesterday, Today and Tomorrow—Expectation and Future for the ITU Association of Japan—." Moderated by ITU-AJ President Tetsuo YAMAKAWA, this discussion featured a lively exchange of opinions including the shared belief that "the field of ICT is going through severe changes, which makes the standardization of technology all the more important in such an era."

Through this ceremony, it was deeply moving to learn again about the operations of ITU-AJ up to the present thanks to the efforts of many people, and for this we are sincerely grateful. Under the slogan of "Towards the Next 50 Years!" the mission of

Mr. Yoshio UTSUMI, winner of the MIC Minister's Award and ITU-AJ 50th Anniversary Honor Award

Dr. Yasuhiko ITO, Dr. Akira HASHIMOTO, and Mr. Makoto MIURA, winners of the MIC Minister's Award and ITU-AJ 50th Anniversary Special Award

■ **Commemorative photo of award winners**

■ **Panel discussion**

ITU-AJ is to serve its members in the upcoming era by joining forces and working together one step at a time. We look forward to our members' ongoing support.

Information on this ceremony is provided on the ITU-AJ website, so please take a look.

https://www.ituaj.jp/?page_id=25499

List of Award Winners

(Affiliation is at time of recommendation)

MIC Minister's Award	
Yoshio UTSUMI	Former Secretary-General of International Telecommunication Union
Yasuhiko ITO	Former KDDI
Akira HASHIMOTO	NTT DOCOMO
Makoto MIURA	Former International Telecommunication Union
ITU-AJ 50th Anniversary Honor Award	
Yoshio UTSUMI	Former Secretary-General of International Telecommunication Union
ITU-AJ 50th Anniversary Special Award	
Yasuhiko ITO	Former KDDI
Akira HASHIMOTO	NTT DOCOMO
Makoto MIURA	Former International Telecommunication Union
ITU-AJ 50th Anniversary Commemorative Award	
Koichi ASATANI	Kogakuin University
Yuji INOUE	Know et Nova Co., Ltd.
Seizo ONOE	DOCOMO Technology, Inc.
Sadahiko KANO	BHN Association
Yasuhiko KAWASUMI	Seisa University
Kohei SATOH	National Institute of Information and Communications Technology
Hiroyasu SONOKI	Former Asia-Pacific Telecommunity
Yukihiro NISHIDA	Japan Broadcasting Corporation
Tsunekazu MATSUDAIRA	Centre for International Capacity Building
Kazuo MURANO	Former Fujitsu Laboratories Ltd.
Toshiyuki YAMADA	Former Asia-Pacific Telecommunity

ITU-AJ Special Achievement Award	
Satoshi OYAMA	Association of Radio Industries and Businesses
Hachihei KUREMATSU	BHN Association
Takao SHIMIZU	Tokyo Broadcasting System Television, Inc.

Cover Art

Fifty-three Stations on the Tokaido: Rokugo Ferry at Kawasaki.

Utagawa Hiroshige (1797~1858)

Collection of the Art Research Center (ARC)
Ritsumeikan University
Object number: BN03828992-1-03

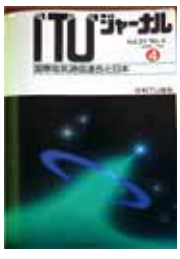
50-Year History of the ITU Association of Japan

July 28, 2021

[1971 – 1983]

Year	The ITU Association of Japan	International Telecommunication Union (ITU) In bold: Events for which ITU-AJ supported the Japanese Secretariat, or an exhibition.
1971	• The ITU Association of Japan founded • Office established in Minato Ward, Tokyo • Touki HACHIFUJI assumes Presidency • ITU Club established • First issue of "International Telecommunication Union and Japan" • First issue of "ITU Study"  1971 "International Telecommunication Union and Japan" first issue  1971 "ITU Study" first issue   1971 ITU-AJ Office established • Seminars on CCITT (currently ITU-T) started • Seminars on ITU Constitution started (until 1973) • Seminars on Broadcast Satellite started (until 2000) • Seminars on Planning Committee started (until 1986) • Seminars on Agreement relating to the International telecommunications satellite organization "INTELSAT" started (until 1972) • Lecture series started (until 2000)	• WARC-71 (Geneva) • World Telecom 71 (Geneva) ＊ First event
1972	• ITU-AJ Awards established	• Seminars on ITU Business Practices started • Seminars on CCIR (currently ITU-R) started • CCITT 5th Plenary Assembly (Geneva)
1973	• First ITU-AJ Awards Ceremony • Donated two 8.0m × 3.6m tapestries of white plum blossoms and autumn leaves to ITU headquarters	• Panel discussions started (until 1989) • PP (Malaga, Torremolinos)
1974		• Seminars on Fundamental Problem of ITU started (until 2011) • Seminars on Special Interest started (until 1986) • CCIR 13th Plenary Assembly (Geneva)
1975		• World Telecom 75 (Geneva)
1976	• ITU Chronology issued (commemorating fifth anniversary of the ITU-AJ)	• CCITT 6th Plenary Assembly (Geneva)
1977		 1973 Tapestry donation (white plum blossoms)
1978		• CCIR 14th Plenary Assembly (Kyoto)
1979	• A Short History of the ITU published (commemorating 100th anniversary of Japan's ITU member status)	 1973 Tapestry donation (autumn leaves) • WARC-79 (Geneva) • World Telecom 79 (Geneva)
1980		• CCITT 7th Plenary Assembly (Geneva)
1981		
1982	• Japanese translation of CCITT Recommendations (Yellow Book) issued	 1982 CCITT Recommendations (Yellow Book) Japanese translation • PP (Nairobi) • CCIR 15th Plenary Assembly (Geneva)
1983	• Received the Prime Minister's Award (in the UN World Communications Year) • Moved to the Watanabe Bijutsu Building in Nishi-shimbashi, Minato Ward, Tokyo	• World Telecom 83 (Geneva)

[1984 – 1991]

Year	The ITU Association of Japan		International Telecommunication Union (ITU) In bold: Events for which ITU-AJ supported the Japanese Secretariat, or an exhibition.
1984			• CCITT 8th Plenary Assembly (Malaga, Torremolinos)
1985	• Asia Teletech Organization (ATO) established	 1985 Missing Link Report	• Missing Link Report • World Telecommunication Forum (Washington, DC) • WTDC (Arusha)
1986			• CCIR 16th Plenary Assembly (Dubrovnik)
1987	• World Communications Development Organization—Japan (WORC-J) established	• Seminars on International Cooperation started (until 2000)	• World Telecom 87 (Geneva)
1988	• ATO merges into WORC-J • WORC-J Regional Cooperation Committee established • Shigeo SAWADA assumes Presidency • First issue of the quarterly, "WORC-JAPAN Journal" • WORC-JAPAN sent specialists to join technical cooperation project in Tanzania, at the request of ITU Center for Telecommunication Development • Sent research team to CCITT 9th Plenary Assembly and WATTC'88 (Melbourne) • Moved to the Nihon Chemical Building in Nishi-shimbashi, Minato Ward, Tokyo	• Seminars on ITU (special courses) started • Seminars on International cooperation promotion started  1989 "New Breeze" first issue  1989 Telecom Tokyo Forum	• CCITT 9th Plenary Assembly (Melbourne) • WATTC (Melbourne)
1989	• ITU-AJ designated as a special non-profit foundation • Signed a memorandum of understanding for cooperation between ITU-AJ and Korea Telecom Technology Association (TTA) • First issue of English-language journal, "New Breeze"	• Telecom Tokyo Forum started • Special APT training course on optical fiber technology started	• **PP (Nice)** *** Makoto MIURA selected as member of the International Frequency Registration Board (IFRB)** • ITU-COM89 (Geneva)
1990	• Sent observers to CCIR Plenary Assembly and a survey of telecommunication situation in Eastern Europe, and participated in ITU 125th anniversary ceremony, and planting of a commemorative cherry tree. • Donated 20 sapling cherry trees and a conference table to ITU headquarters to mark ITU's 125th anniversary • WORC-JAPAN issues telephone cards to assist fundraising for ITU Center for Telecommunication Development (CTD) • Minoru SHIOYA assumes Presidency • WORC-J International Awards established	 1990 Planting the commemorative cherry tree  1990 Conference table donation	• CCIR 17th Plenary Assembly (Düsseldorf) • **CCITT SG XVIII Matsuyama Meeting**
1991	• Received Commemorative plate from the ITU for contributions to ITU activities • "The International Telecommunication Union and Japan" changed to the "Journal of the ITU Association of Japan • Exhibited at World Telecom 91 Book Fair • Published Japanese translation of "ITU of tomorrow: Toward reform (High-level committee)" in "ITU Study" journal	• Group training course in rural telecom engineering started, on behalf of JICA  1991 Journal name changed from "The International Telecommunication Union and Japan" to the "Journal of the ITU Association of Japan"	• **CCIR WP4s Tokyo meeting, WP9s Kobe meeting** • World Telecom 91 (Geneva)

[1992 – 2002]

Year	The ITU Association of Japan		International Telecommunication Union (ITU) In bold: Events for which ITU-AJ supported the Japanese Secretariat, or an exhibition.
1992	• ITU-AJ merged with WORC-J to form the New ITU Association of Japan Inc. • Moved to Kyodo Building, Chiyoda Ward, Tokyo		• APP-92 (Geneva) • WARC-92 (Malaga, Torremolinos)
1993	• Membership in ITU-T, ITU-R, and ITU-D sectors • Tetsuo MORIMOTO assumes Presidency • Received Award from Minister of Posts and Telecommunications during Japan's Telecom Week • Merged "ITU Study" into the "Journal of the ITU Association of Japan" publications • Exhibited publications jointly with ITU at the 24th Union Radio-Scientifique Internationale (URST) General Assembly held in Kyoto		• **WTSC-93 (Helsinki)** • RA-93, WRC-93 (Geneva)
1994	• Held series of seminars organized in India, Sri Lanka and Indonesia, jointly with the Asia Electronics Union (AEU) • World Telecom Visual Data Book, first issue	• Seminars on ITU-R started • Kansai Telecom Symposium held  1994 World Telecom Visual Data Book, first issue  1994 PP-94 (Kyoto)	• **PP-94 (Kyoto)** • WTDC-94 (Buenos Aires)
1995			• RA-95, WRC-95 (Geneva) • **World Telecom 95 (Geneva)**
1996	• Haruki MATSUNO assumes Presidency • Started Recommendation print service as agent of ITU • Web site established		• **WTSC-96 (Geneva)** • **WTPF-1996**
1997		 1998 Yoshio UTSUMI selected as Secretary-General of the ITU	• **RA-97, WRC-97 (Geneva)** • Telecom Interactive (Geneva)
1998	• Mitsuo IGARASHI assumes Presidency		• **PP-98 (Minneapolis)** **＊Yoshio UTSUMI selected as Secretary-General of the ITU** • WTDC-98 (Valletta) • WTPF-1998
1999	• Donated the tapestry of Mt. Fuji to ITU headquarters to mark the inauguration of the new ITU Montbrillant Building	 1999 Donation of Mt. Fuji tapestry	• **Telecom 99 + Telecom Interactive 99 (Geneva)**
2000	• Changed name to the ITU Association of Japan, Inc. • Masato SHINAGAWA assumes Presidency		• **RA-2000, WRC-2000 (Istanbul)** • **WTSA-2000 (Montreal)**
2001	• Moved to Kanda KS Building in Chiyoda Ward, Tokyo	• Seminars on Digital Opportunity started (until 2003) • Seminars on ITU Business started	• WTPF-01
2002	• Amateur Radio Station, 8J1ITU established, commemorating World Telecommunication and Information Society Day • Signed a memorandum of understanding for cooperation between ITU-AJ and the United States ITU Association (USITUA) • Signed a memorandum of understanding for cooperation between ITU-AJ and the Arthur C. Clarke Institute of Modern Technologies (ACCIMT) • Received letter of thanks for ITU Activity contributions to World Telecommunication Day • Masahito TANI assumes Presidency	• Seminars on International Conference Practice started	• **WTDC-02 (Istanbul)** • **PP-02 (Marrakesh)**  2002 PP-02 (Marrakesh)

[2003 – 2013]

Year	The ITU Association of Japan		International Telecommunication Union (ITU) In bold: Events for which ITU-AJ supported the Japanese Secretariat, or an exhibition.
2003	• Kaoru KANAZAWA assumes Presidency  2003 APG03-5 (Tokyo)	• OS Forum started  2003 WSIS-03 (Geneva)  2003 WSIS Asia-Pacific Region Meeting (Tokyo)	• **WSIS Asia-Pacific Region Meeting (Tokyo)** • **APG03-5 (Tokyo)** • **RA-03, WRC-03 (Geneva)** • **ITU Telecom World 2003 (Geneva)** • **WSIS-03 (Geneva)** ***First holding of World Telecommunication & Information Society Summit**
2004		• ITU-T Director Houlin Zhao visits Japan, gives special lectures	• **WTSA-04 (Florianopolis)**
2005	• First "Kore de Wakaru ITU", a guide book for ITU, issued • Hiroshi MATSUI assumes Presidency  2005 "Kore de Wakaru ITU", guide book for ITU	• "Networking of rural community Information infrastructure" group-training course organized on behalf of JICA  2005 WSIS Thematic Meeting "Tokyo Ubiquitous Network Conference"	• **WSIS Thematic Meeting "Tokyo Ubiquitous Network Conference"** • **WSIS-05 (Tunis)**
2006	• "ITU Journal" first colored issue	• Follow-up seminars started  2006 PP-06 (Antalya)	• **PP-06 (Antalya)** ***World Telecommunication & Information Society Day (WTISD) established** • **ITU Telecom World (Hong Kong)** ***First time held outside of Geneva** • WTDC-06 (Doha) • IGF Meeting (Athens)
2007	• Dedicated member Web pages established • Kanichiro ARITOMI assumes Presidency	 2008 ITU Symposium on ICT and Climate Change (Kyoto)  2008 WTSA-08 (Johannesburg)	• **RA-07, WRC-07 (Geneva)**
2008	• Provided support for ITU Symposium on ICT and Climate Change (Kyoto)		• Kaleidoscope (Geneva) *First meeting • **WTSA-08 (Johannesburg)**
2009	• Kiyoshi MORI assumes Presidency		• **ITU Telecom World 2009 (Geneva)** • **WTPF-09**
2010	 2010 WTDC-10 (Hyderabad)	• On-site seminars started	• **PP-10 (Guadalajara)** ***Yasuhiko ITO selected as member of the Radio Regulations Board (RRB)** • **WTDC-10 (Hyderabad)**
2011	• Changes legal status to General Incorporated Foundation	• Seminars on Telecommunication Policy started	• ITU Telecom World 2011 (Geneva)
2012	• Yasuo SUZUKI assumes Presidency • Journal of the ITU Association of Japan editions unified to Web edition • Moved to BN Gyoen Building, Shinjuku Ward, Tokyo	• Liaison Meetings for ITU Conference Information started	• WTSA-12 (Dubai) • **RA-12, WRC-12 (Geneva)** • ITU Telecom World 2012 (Dubai) • WCIT-12 (Dubai)
2013	• Michiaki OGASAWARA assumes Presidency  2013 WP5D (Sapporo)	• ITU-R International Meeting Experience High-level seminars started • ITU-T International Meeting Experience High-level seminars started • ITU Telecom World & Myanmar Information and Communications Trends Study	• **ITU-T SG3 RG-AO (Tokyo)** • **ITU Kaleidoscope (Kyoto)** • **WP5D (Sapporo)** • **ITU Telecom World 2013 (Bangkok)** • **WTPF-13**

[2014 – 2021]

Year	The ITU Association of Japan		International Telecommunication Union (ITU) In bold: Events for which ITU-AJ supported the Japanese Secretariat, or an exhibition.
2014	• Signed Memorandum of Understanding between ITU-AJ and ITU-APT Foundation of India (IAFI)	• Reviewed Seminars of Telecommunication Policy, started Seminars on ICT  2014 PP-14 (Busan)	• **WTDC-14 (Dubai)** • **WSIS+10 High-level Event 2014 (Geneva)** • **APT WDMC-5 (Tokyo)** • **ITU-T SG16 (Sapporo)** • **PP-14 (Busan)** • ITU Telecom World 2014 (Doha)
2015	 2015 International Negotiation "Performative Seminars" started  2015 World Telecommunication/ICT Indicators Symposium (WTIS)(Hiroshima)	• Seminars for International Negotiation Techniques started • International Negotiation "Performative Seminars" started	• ITU 150th Anniversary year • AWG-18 (Kyoto) • WSIS Forum 2015 (Geneva) • RA-15, WRC-15 (Geneva) • ITU Telecom World (Budapest) • WTIS-15 (Hiroshima, with 12-organization exhibit)
2016		• Seminars on International Standardization Strategic Business Utilization held  2016 PRF-16 (Tokyo)	• **PRF-16 (Tokyo)** • WTSA-16 (Yasmin Hammamet) • ITU Telecom World (Bangkok)
2017	• Supported 19th International Space Radio Monitoring Meeting (ISRMM-19)		• **ITU Telecom World (Busan)** • **WTDC-17 (Buenos Aires)**
2018	• Toru FUKUOKA assumes Presidency  2018 WP5D (Fukuoka)  2018 PP-18 (Dubai)		• ITU Telecom World (Durban) • **WP5D (Fukuoka, with 5-organization exhibitions)** • **PP-18 (Dubai)** **＊Akira HASHIMOTO selected as member of the Radio Regulations Board (RRB)**
2019	• Toshiyuki MINAMI assumes Presidency  2019 APG19-5 (Tokyo)  2019 ITU Telecom World (Budapest)  2019 WRC (Sharm el-Sheikh)		• **APG19-5 (Tokyo, with 8-organization exhibitions)** • **ITU Telecom World (Budapest)** • **RA-19, WRC-19 (Sharm el-Sheikh)**
2020	• Telework begins (Since April) • World Telecommunication & Information Society Day Ceremony postponed due to COVID-19 pandemic then held (May to October) • Tetsuo YAMAKAWA assumes Presidency • Supported the Beyond 5G Kick-off Online Symposium	• Liaison Meeting for ITU Conference Information held online (including participants from Geneva, Bangkok, and California)  2020 WTISD Ceremony postponed, then held (May to October)	• Digital World (Hanoi) held online • WTSA-20 (Hyderabad) postponed
2021	• Supported Japan Platform for Driving Digital Development (JPD3) (online) • Supported MIC MRA International Workshop 2021 (online) • Held Ceremony celebrating 50th Anniversary of ITU-AJ	◆ Number of seminars held (as of Aug. 31, 2021): 2,117 ◆ Number of regular publications (as of Aug. 31, 2021): • "International Telecommunications Union and Japan": 232 issues • "ITU Study" 265 issues • "ITU Journal": 368 issues (including its predecessor, "International Telecommunications Union and Japan," 600 issues) • "New Breeze": 131 issues	• Digital World (Hanoi)(online) • WTDC-21 (Addis Ababa) postponed

＊1 Based on ITU internal survey data,etc.
＊2 Abbreviations
WARC: World Administrative Radio Conference
CCITT:Consultative Committee on International Telegraphy and Telephony
PP: Plenipotentiary Conference
CCIR: Consultative Committee on International Radio
WTDC: World Telecommunication Development Conference
WATTC: World Administrative Telegraph and Telephone Conference
APP: Additional Plenipotentiary Conference
WTSC: World Telecommunication Standardization Conference
RA: Radiocommunication Assembly
WRC: World Radiocommunication Conference
WTPF: World Telecommunication/ICT Policy Forum
WTSA: World Telecommunication Standardization Assembly
APG: APT Conference Preparatory Group
WSIS: World Summit on the Information Society
IGF: Internet Governance Forum
WCIT: World Conference on International Telecommunications
APT WDMC: APT Workshop on Disaster Management/Communications
WTIS: World Telecommunication/ICT Indicators Symposium
PRF: APT Policy and Regulatory Forum
ISRMM: International Space Radio Monitoring Meeting

Expansion of Telemedicine in the Wake of the COVID-19 Pandemic

Seigo Hara
CEO
MICIN, Inc.

Yoko Kiriyama
RA Specialist
MICIN, Inc.

In September 2020, with the resignation of former Prime Minister Shinzo Abe, he was succeeded by Cabinet Minister Yoshihide Suga. One of Cabinet Minister Suga's platform policies was to make telemedicine permanent, and with considerable discussion among experts in the field, a cabinet decision in June 2021 made telemedicine a permanent policy in Japan beginning in FY 2022. The demand for telemedicine care increased with the spread of the COVID-19 pandemic, so virtual clinics are finally taking shape and systems are getting organized. Here, we describe how telemedicine has developed since before the COVID-19 pandemic.

1. Telemedicine care before the COVID-19 pandemic

Telemedicine care is a form of remote medicine that gradually began spreading throughout Japan in around 2015. In 2018, remuneration for clinical work was reformed; establishing new fees for telemedicine care and setting guidelines regarding appropriate operation of online care (Telemedicine care guidelines). However, although this was an opportunity to establish systems for telemedicine care, the conditions were severely limited (Table 1), and did not lead to significant spread of telemedicine care.

According to documented statistics*1 of actual medical and clinical behavior in society from an investigation in June 2018, fees for telemedicine care were charged a total of 65 times, 15 times for telemedicine treatment, and 4 times for online home management, so it was not even one millionth of the number of claims for medical services per month: approximately 100 million. Examining results over time, the trend is not increasing*2, and there continue to be almost no insured telemedicine treatments. There are several possible reasons for this, but the four major issues are summarized in Table 1. They are: (1) constraints on medical conditions covered, (2) low profitability for insured treatment, (3) strict conditions on provision of services, and (4) guidance for medications can only be given in-person.

Table 1: Systematic regulations for treatment under health insurance and effects on clinical work

		System regulation	Effect on clinical work
Treatment remuneration	Constraints on conditions covered	• Medical conditions covered by insurance are limited because the scope of management fees that can be charged is fixed.	• Treatment areas such as dermatology and psychiatry could not be performed online before clinical remuneration regulations were reformed.
	Low profitability	• Billable points are more than 100 points (1000 yen) less than in-person consultations, so practicing online decreases revenue for a medical institution.	• Performing online medicine increases load on a medical institution, requiring IT device set-up, writing treatment plans, etc., but revenue decreases relative to in-person treatment.
	Strict conditions on practice	• A treatment plan is required • In-person first consultation is required	• Hurdles to building a system are high
Medication guidance		• For non-hospital prescriptions, patient must take the prescription to a pharmacy in-person • Original prescription is needed for dispensing	• Even though a virtual clinic was used, patients must go to the pharmacist themselves, to get prescriptions, so the burden on patients is not decreased.

*1 Central Social Insurance Medical Council General Meeting Document (Sept. 2019), "Calculation of fees, etc. after FY 2018 medical fee reforms"
*2 Central Social Insurance Medical Council General Meeting Document (Nov. 2019), "Regarding online medical management fees."

Table 2: Changes in virtual clinics due to temporary mitigation measures

		Before temporary mitigation	After temporary mitigation
Treatment remuneration	Constraints on conditions covered	• Medical conditions covered by insurance are limited because the scope of management fees that can be charged is fixed.	• Online treatment can be done at the physician's discretion, not limited by the ailment
	Low profitability	• Billable points are more than 100 points (1000 yen) less than in-person consultations, so practicing online decreases revenue for a medical institution.	• For initial examinations, more points can be billed (288 points for in-person, 214 points for online examinations) • Higher fees can be billed than for repeat examinations
	Strict conditions on practice	• A treatment plan is required • In-person first consultation is required	• Treatment plan estimate not necessary • Online treatment possible from first examination
Medication guidance		• For non-hospital prescriptions, patient must take the prescription to a pharmacy in person • Original prescription is needed for dispensing	• On-line guidance can also be given for non-hospital prescriptions • Prescriptions can be filled by FAX

2. Changing conditions due to expansion of the COVID-19 pandemic

However, with the expansion of the COVID-19 pandemic, these conditions changed completely. In February, 2020, a specialist session of the government issued a declaration that telemedicine care would be used as a measure to control further spread, the Ministry of Health, Labour and Welfare issued successive notices regarding telemedicine care, and temporary measures were taken to relax regulations. The main changes are summarized in Table 2. The change that attracted the most attention in the media was lifting the ban on performing initial examinations online, but perhaps more important was the relaxation of restrictions on the medical conditions covered, which were extremely limiting previously.

MICIN Inc. has been providing a telemedicine care service called "curon" since 2016. In March 2020, the environment changed, and approximately 5,000 medical institutions are currently using our product (as of February, 2021). The number of examinations being done with the system also increased by more than a factor of ten at that time. Considering that in December, 2019, the number of medical facilities using the system was approximately 1,800, it is easy to imagine that the needs of both medical facilities and patients changed suddenly with the spread of the pandemic. Other providers of telemedicine care systems are also experiencing this increase in users, and according to Ministry of Health, Labour and Welfare documents*3, over 16,000 medical facilities were performing telephone or online examinations as of August, 2020. New enterprises also continue to enter the market providing telemedicine care systems, and considering current conditions in society, we expect the number of medical facilities using telemedicine care systems will continue to increase. On the other hand, the report from a Ministry of Health, Labour and Welfare review meeting on May 31, 2021, indicated that the number of medical facilities using such systems had begun to level off*4. Based on the current systems and technology platforms, telemedicine care platforms and use cases are beginning to stabilize to some extent.

In the next sections, we introduce the "curon" virtual clinic service that we provide, and also a new service called "curon medication support," providing online guidance for taking medications.

3. System provided by MICIN

(1) The "curon" telemedicine care service

MICIN's telemedicine care service, called "curon," has been providing comprehensive, end-to-end systems mainly to medical clinics since 2016, including appointments, medical history taking, video examinations, billing, payment and prescription filling and delivery. The virtual clinic systems from other providers each have their strengths, but a major difference between curon and systems from other providers is that installation and operation is free-of-charge for medical facilities, and patients are required to pay fee (330 yen tax incl.) to use the application. We considered that one of the major benefits of telemedicine care is improving access to medical care for patients, so we decided to collect revenue from the patients, who receive this benefit, rather than from the medical facility. As of February, 2021, over 5,000 medical facilities had introduced our system.

*3 Ministry of Health, Labour and Welfare, 10th Review of Appropriate Online Medical Care Operation document, "Trends in medical facilities (Overall, initial examinations)" (August, 2020)
*4 Ministry of Health, Labour and Welfare, 15th Review of Appropriate Online Medical Care Operation document, "Numbers of medical facilities (May, 2021)

(2) curon medication support

Following the telemedicine care system that has been established since 2018, there was a plan to lift restrictions on online medication guidance in September, 2020, according to revisions made in November 2019 to the Pharma and Medical Devices Act. However, with the spread of the COVID-19 pandemic, the Ministry of Health, Labour and Welfare issued temporary special mitigation measures, which included lifting this ban early and giving approval for medical facilities to send prescriptions to pharmacies by FAX. We had been developing our online medication guidance service with the intention of releasing it in September, 2020, but with this mitigation measure, we developed and began providing additional functions in our curon telemedicine care service, to upload prescription data and to send prescriptions to pharmacies. Thus, before launching our online medication guidance service, we were able to equip curon with functions to send prescriptions to pharmacies by FAX. Since the number of patients requested to stay home was expected to increase greatly, our development team worked day-and-night, and was able to develop and publish the new features in only three days from when the measures were announced.

Later, α and β versions of our online medication guidance service for pharmacies ("curon Medication Support") were released in May and July respectively, and the first official version was released in August. The process for curon Medication Support is shown in Figure 1. We had determined to have curon Medication Support installed and in use at more than 2,500 pharmacies by the end of 2020, and we continue to work to have it used in even more pharmacies. Note that curon Medication Support is not limited to curon and can be used with other telemedicine care systems.

4. Telemedicine care and information security

We are sometimes asked whether using a comprehensive telemedicine care system like the one we provide is necessary when offering telemedicine care. Not necessarily, and use of general-purpose video conferencing systems is not prohibited. However, information security must be considered when doing so, and medical facilities performing online examinations have a duty to take adequate measures. The differences between using a comprehensive telemedicine care system and system using general-purpose services are summarized in Table 3.

Here, taking adequate measures to guarantee security means that the organization must create systems and operate following the guidelines for telemedicine care issued by the Ministry of Health, Labour and Welfare. A comprehensive telemedicine care system like the one we provide has already been designed and built confirming to these guidelines (Figure 2), but if general purpose services are used, the medical facility must prepare the environment and operate with consideration for security to ensure that, for example, video calls are not intercepted, and information regarding ailments or prescriptions is not leaked, falsified or destroyed.

There were quite a few medical facilities that began providing telemedicine care using general-purpose services, which were immediately available during the first wave of the COVID-19 pandemic, but considering the above issues, we expect that many of these will migrate to a comprehensive telemedicine care system in the future.

Figure 1: Medication support process with curon

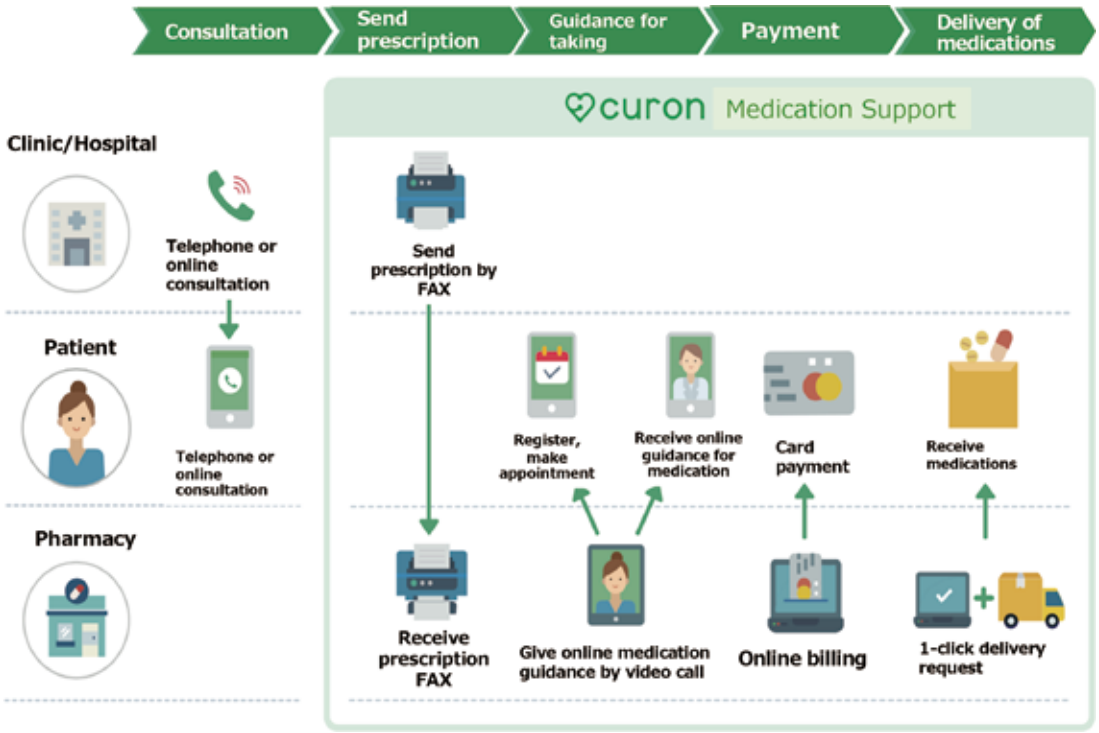


Table 3: Comparing comprehensive online medical care systems with general-purpose systems

	Comprehensive medical care system	System using general-purpose services
Data communication method	• Uses video conferencing service recommended by each specialist	• Medical facility chooses from several general purpose services
Benefits	• Both doctors and patients can be authenticated in the system • Includes invoicing tasks • Includes appointment management • Professional support	• Low-cost or free of charge • Easy to start
Concerns	• Some services are not free • Contracts and other preparation may be needed • Cost and services may differ depending on the system	• Medical facility itself must guarantee information security • Medical facility must manage appointments • A mechanism to check identities of doctor and patient is necessary • Medical facility must build its own treatment process based on guidelines • Medical facility must invoice for prescriptions on its own

Figure 2: Use of curon with system design conforming to guidelines

When starting use: ・Prior agreement with terms and conditions required (both patient and medical facility) ・Patient user registration must be approved by doctor ・Doctor account can only be created by the medical facility administrator	・Only attending physician can access online treatment data * Even other doctors at the same facility cannot access it.			・Credit card information is not saved (only data linking to the settlement provider is stored)	(no comments)
			Only the doctor can initiate an online medical examination.		
Other (operation): Provide treatment plan format as needed.					

5. Future of telemedicine care

Use of telemedicine care began to spread, prompted by the COVID-19 pandemic, but there is discussion of making it permanent, so we expect it will become established. However, it is still difficult to escape the image of "medical examination by video conference." This is due to technical issues with online examinations, which do not allow doctors to obtain all of the information that is available in a conventional, face-to-face examination, using all five senses. However, there have been various developments in digital health in the past few years, and in the future, we expect developments integrating telemedicine care with compatible digital therapeutics (DTx). We are already working with pharmaceutical enterprises to establish patient support programs that aim to improve treatment continuity and adherence for patients, in our efforts to increase convenience for patients and add new value to telemedicine care.

DTx is a field that is currently seeing vigorous development, both domestically and internationally. In the USA, many products are entering the market, starting with the Bluestar smartphone diabetes treatment application from Welldoc Inc., which was approved by the FDA in 2010. Japan is several years behind some other countries, but in August, 2020, CureApp SC, from CureApp Co. Inc., was the first digital treatment device to receive Pharmaceutical Affairs Act approval in Japan, and in November it attained insurance coverage. We expect various other products to be developed in Japan in the future.

With progress in system design to make telemedicine treatment permanent, we look forward to seeing it take root as one form of medical treatment, and something that can contribute to society as the technology develops in the future.

CLINICS: Japan's Most Popular Telemedicine System

Tomohiro Shinozaki
Business Collaboration Promotion Department
Medley, Inc.

1. Introduction

Telemedicine can be implemented using electronic communication devices with a video call function. Medical institutions use telemedicine in combination with face-to-face medical care as a way of making medical care more accessible to patients and achieving better outcomes by promoting active patient participation. Online clinics are sometimes referred to as the fourth form of medical care alongside outpatient care, inpatient care, and home visits.

The growth in the popularity of telemedicine in Japan differs from the situation in other countries. It is widely used in the United States, and owes its popularity to its ability to facilitate the flexible selection of optimal treatments with an emphasis on delivering better patient outcomes. It has been particularly popular for key areas such as psychiatry, dermatology and primary care, where patients often require long-term treatment.*1 In China, the use of telemedicine has been increasing since before the coronavirus pandemic due to issues such as the shortage of doctors and lack of accessibility to medical care. For example, a telemedicine service called *Ping An Good Doctor* was launched by Ping An Insurance in 2015, and by 2019 it had over 300 million registered users. In Japan meanwhile, although government restrictions on the provision of telemedicine were lifted in 2015, only a small fraction of medical institutions have embraced it. Although we may be lagging behind other countries, telemedicine is starting to take off in Japan as a result of efforts to prevent the spread of coronavirus.

Figure 1: Overview of the CLINICS telemedicine system

2. CLINICS: Japan's most popular telemedicine system

2.1 About the CLINICS system

CLINICS is the most popular telemedicine system in Japan.*2 It supports a wide range of functions, including online appointment bookings, pre-consultation checks, online video consultations, credit card payment processing, delivery of medicines and prescriptions, and support for cooperation with dispensing pharmacies.

Particular features of CLINICS include:

- High usability with an emphasis on on-site operation thanks to the participation of multiple doctors in the development of the system and its ongoing refinement based on actual clinical use
- Support system for medical institutions and patient users involving teams familiar with complicated rules and diverse usage methods
- Compliance with guidelines and proactive approach to security measures

With these features acknowledged, CLINICS has been widely used by clinics and university hospitals throughout Japan since its launch in February 2016. The number of medical institutions using CLINICS passed 2,300 by the end of 2020, and by April 2021, it had played a part in approximately 300,000 medical examinations.

2.2 Recognition and awards

CLINICS has received favorable coverage in national newspapers including the *Nihon Keizai Shimbun*.

- Selected as a top new product among about 20,000 new services
- Received the "Best of the Best" Award at the 2018 Nikkei Superior Products and Services Awards, which recognizes new services

In addition, at the 14th ASPIC IoT/AI/Cloud Awards in 2020, we received the Ministry of Internal Affairs and Communications award (the top award for the service receiving the most outstanding evaluation out of approximately 70 award-winning services) and the overall Grand Prix for the ASP/

*1 Source: 2018 U.S. Telemedicine Industry Benchmark Survey
*2 Source: 2021 Future Prospects for New Markets in IoMT (Internet of Medical Things), Fuji Chimera Research Institute, November 2020

SaaS category specializing in social industry. This is the second consecutive year that we have received this award, following the 2019 Best Social Contribution Award in the ASP/SaaS category specializing in social industry. In FY2020, in addition to its contribution to society, the system was comprehensively evaluated for its rich and beneficial use record, the safety of its services, its utility in addressing new challenges such as improving the medical experience of patients by tying in with the family pharmacy support system, and the active collaboration with industry, government, and academia.

3. Examples of specific diseases for which telemedicine is used

Telemedicine is widely used in the departments shown in Figure 2, especially following the outbreak of the coronavirus pandemic.*3 The specific diseases treated by each of these departments are described below.

3.1 General internal medicine: Lifestyle-related diseases such as diabetes

In general internal medicine, telemedicine is often used for lifestyle-related diseases such as hypertension, type 2 diabetes, and dyslipidemia that require continuous treatment. However, many people with these conditions go untreated or discontinue their treatment due to the burden of hospital visits and lack of subjective symptoms. For example, a survey of people with diabetes*4 has revealed that nearly 60% of both males and females in their 40s are either untreated or have discontinued their treatment. The use of telemedicine is increasing because it reduces the burden of visiting the hospital and makes it easier for patients to continue receiving the treatment they need.

3.2 Psychiatry and psychosomatic medicine: Depression, panic disorders, etc.

Telemedicine is used in psychiatry and psychosomatic medicine to treat conditions such as depression, panic disorder, alcohol-related disorders, and insomnia. In this field, many people discontinue treatment due to the psychological and social hurdles of going to medical institutions, and the difficulty of leaving the house. Telemedicine is used in this field because it makes it easier for patients to continue receiving medical treatment as they can see a doctor in a familiar environment such as their own home.

3.3 Pediatrics: Pediatric asthma and autism

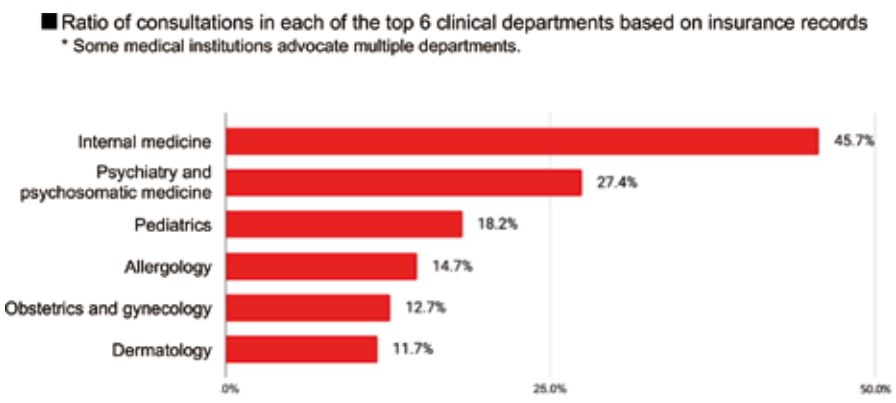
Telemedicine is also used in pediatrics involving the treatment of neurodevelopmental disorders such as autism and ADHD, pediatric asthma, and intractable pediatric diseases. The parents of a young child often find it difficult to take him/her to hospital, especially if they also have other young children. In addition, patients with intractable pediatric diseases often have to travel a long distance for treatment due to the degree of specialization required, and they shoulder a significant burden of arranging travel and lodging for long-term regular visits. For this reason, telemedicine, which allows patients to be seen from their own home or some other location, is considered to be well suited to this field. Another benefit of online consultation is that it provides doctors with access to information such as the child's home environment that is not available when people visit them in person.

3.4 Allergic diseases: Pollinosis, atopic dermatitis, etc.

Many allergic diseases are compatible with telemedicine, as the patients are often young and have stable symptoms. Telemedicine is used for many allergic diseases such as asthma, pollinosis and atopic dermatitis.

It is also used in the field of obstetrics and gynecology for explaining the results of fertility tests and for conditions such as dysmenorrhea that require regular visits. In this way, telemedicine is used in a wide range of medical departments, and can be combined with face-to-face care in various ways according to the

Figure 2: Breakdown of CLINICS medical examinations by clinical department (based on insurance records)



*3 Medley Inc. survey (June 2020)
*4 Source: 2012 National Health and Nutrition Survey, Ministry of Health, Labor and Welfare

needs of patients and the strengths of medical institutions.

4. Specialist online second opinions and coronavirus outpatient clinics

4.1 Online second opinions

CLINICS is also used by medical specialists as a means of providing second opinions in their specific fields. It allows patients and their families to connect online with specialists via personal computers and smartphones from anywhere in the country, and is therefore expected to alleviate the burden of traveling when receiving a second opinion. The use of CLINICS is currently spreading in university hospitals and core hospitals nationwide. At the University of Tokyo Hospital, this system is now being used to provide online second opinions among 26 clinical departments. CLINICS is also being used to provide online second opinions in various fields such as epilepsy and lung transplantation at Tohoku University Hospital, and heart and aortic diseases at Kurashiki Central Hospital.

Figure 3: Some of the medical institutions that use CLINICS to provide online second opinions

Medical institutions offering online second opinions (partial excerpt) * As of December 2020

Region	Name of medical institution	Target clinical department
Tohoku	Tohoku University Hospital	Department of epileptology Other departments
Kanto	Jichi Medical University Hospital	Department of neurosurgery (Epileptology)
	The University of Tokyo Hospital	26 clinical departments
	Keio University Hospital	Department of psychiatry & neurology
Chubu	Seirei Hamamatsu General Hospital	Epileptology center
	Fujita Health University Hospital	17 clinical departments
Kansai	Kindai University Hospital	27 clinical departments
	University Hospital, Kyoto Prefectural University of Medicine	Department of psychiatry and psychosomatic medicine
Chugoku & Shikoku	Kurashiki Central Hospital	Department of cardiovascular surgery
	Hiroshima University Hospital	Epileptology center
Kyushu	Kyushu University Hospital	Department of psychiatry & neurology
	Kumamoto University Hospital	Department of cardiovascular surgery

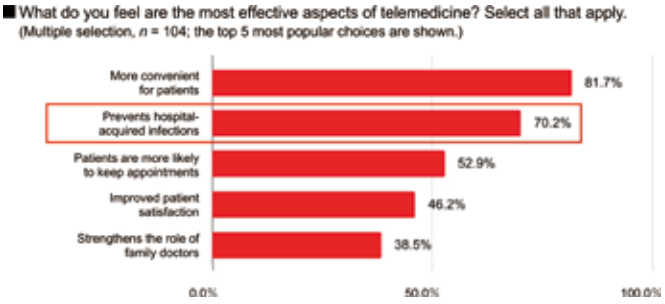
4.2 Online Fever Outpatient Clinics

During the current pandemic, CLINICS is also being used to operate "Online Fever Outpatient Clinics" so that an initial treatment can be provided without coming into contact with patients with cold-related symptoms including fever.

The pandemic has led to deregulation regarding the provision of telemedicine. According to a communique from the Ministry of Health, Labor and Welfare on April 10, 2020, the provision of medical care via telephones and other electronic communication equipment has been sanctioned on a time-limited basis without restrictions of facility requirements or diseases. In fact, as shown in Figure 4, more than 70% of medical institutions feel that telemedicine is an effective way of preventing hospital-acquired infections during the coronavirus pandemic.

Last winter, the system was also used as an Online Fever Outpatient Clinic with the main purpose of dividing the flow of patients with fever and/or cold symptoms. This makes it possible for medical institutions to provide patients for whom SARS-CoV2 infection cannot be ruled out with initial treatment without coming into direct contact with them.

Figure 4: Some of the medical institutions that use CLINICS to provide online second opinions



5. Active collaboration with industry, government and academia

5.1 Telemedicine demonstration project in Yonaguni

During the project, CLINICS was used to provide telemedicine for all the inhabitants of Yonaguni island in Okinawa prefecture.

The island's only medical institution is the chronically understaffed Yonaguni town clinic, where a single doctor has to provide care to approximately 1,700 islanders (about 700 patients per month). If any medical personnel become infected with SARS-COV-2 under these circumstances, it will become impossible to provide the medical care required by the islanders. It was also found that patients tended to refrain from seeking medical attention due to anxiety about the risk of infection. Yonaguni town and its medical clinic therefore sought to maintain the island's medical system and address the issue of islanders who refrain from visiting the doctor by building a system whereby patients could receive online medical care via CLINICS if they developed a fever.

5.2 ORBIS and Dai-ichi Life use CLINICS to address menstruation issues

Although there is data showing that 45% of women experience menstrual problems that they are unable to cope with successfully*5, they tend not to have these problems treated for various reasons, such as assessing their own symptoms to be not sufficiently serious, being unable to find the time to visit a hospital, or being hesitant to visit to a gynecologist. There is also data showing that contraceptive pills are only used by 2.9% of Japanese women, which is much lower than the average rate of 16.5% in developed countries*6. One reason for this disparity is thought to be a lack of proper knowledge about non-contraceptive uses of the pill, which is incorrectly regarded as having no other purpose besides birth control. Therefore, as part of measures to

*5 Source: 2018 Survey of Health Promotion for Working Women, Health and Global Policy Institute
*6 Source: Contraceptive Use by Method 2019, United Nation

support the active participation of female employees, CLINICS is being increasingly used by businesses in order to raise awareness of the correct facts about menstruation and contraceptive pills, and to alleviate the burden of female workers seeking medical attention. ORBIS Inc. has started using this system to target approximately 1,000 female employees at its head office and shops, and the Dai-ichi Life Insurance Company, Ltd. has started using it to target about 2,000 female employees working in the Tokyo metropolitan area.

5.3 Free online mental health consultation for pregnant and postpartum women

In partnership with the Saitama Obstetrics & Gynecology Association, Medley, Inc. is utilizing CLINICS as a means of providing care and free online consultation to expectant and nursing mothers with regard to SARS-COV-2. Since May 2020, this service has been operating at seven medical institutions in Saitama prefecture, including Saitama Medical University Hospital. This initiative was started not only because of the possibility that pregnant and postpartum women were not being provided with adequate mental health care during the coronavirus pandemic, but also because they harbored strong feelings of anxiety regarding pregnancy, childbirth and childcare, and because of the limited availability of medical staff familiar with mental health needs in the field of obstetrics and gynecology.

6. Online medication guidance and electronic prescription initiatives

6.1 Family pharmacy support system that facilitates online medication guidance

In response to rules allowing the provision of online medication guidance from September 2020, Medley Inc. has launched a family pharmacy support system called *Pharms*. This system supports functions such as online medication guidance, online prescription requests, and cashless payments. By cooperating with the CLINICS telemedicine system, this made it possible for patients to enjoy a complete online medical experience from online treatment to online medication guidance via a single smartphone app. As of the end of March 2021, this system has so far been introduced at more than 3,800 pharmacies, including every branch of pharmacy chain companies such as Qol Holdings Co., Ltd., Kraft Co., Tanpopo Pharmacy Co., and Nihon Chouzai Co., Ltd.

6.2 Electronic prescription development

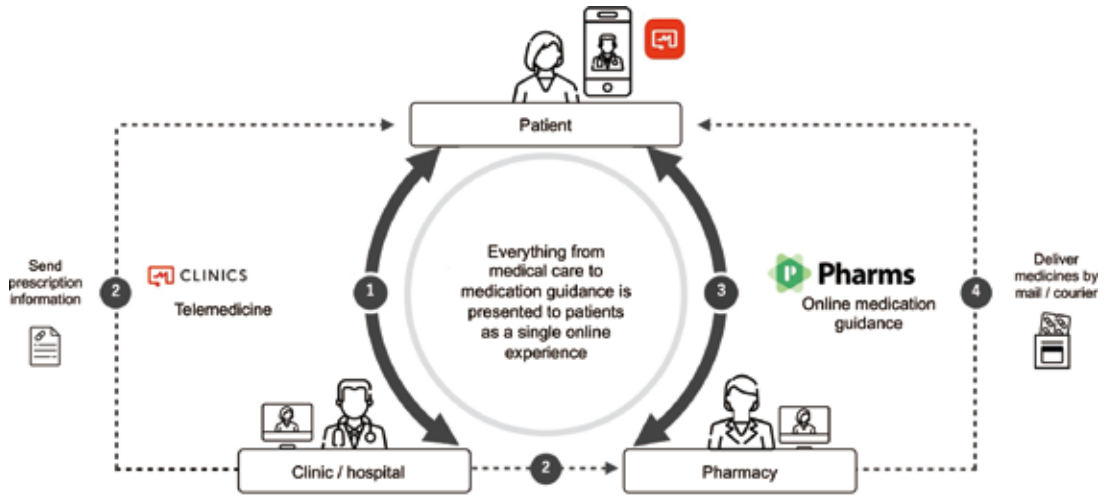
Medley has also developed an electronic prescription management system based on the FHIR, next-generation medical information standard, for a project entrusted by the Ministry of Health, Labor and Welfare to demonstrate the provision of a full-scale electronic prescription service. The system, which ran from 2018 to 2019, enabled the examination of specific mechanisms to facilitate the implementation of electronic prescriptions.

7. Conclusion

The government and other stakeholders are engaged in diverse discussions related to telemedicine. At a meeting of the Regulatory Reform Promotion Council in December 2020, Prime Minister Suga declared his intention to extend the existing exceptional measures permitting the provision of telemedicine and online medication guidance, and to ensure that there would be no reduction of standards compared to what is currently available. For this reason, the future design of these services is being closely watched.

At Medley Inc., we aim to improve the provision of medical care for both medical institutions and patients by making use of the know-how accumulated through over 300,000 medical examinations.

Figure 5: A "one-stop" online medical experience



= A Serial Introduction Part 3 = Winners of ITU-AJ Encouragement Awards 2020

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.

Yicheng Zhou
FUJITSU LIMITED
zhou.yicheng@aoni.waseda.jp https://www.fujitsu.com/global/
Fields of activity: SMART CITY, SMART ENERGY, ICT

Initiatives in Development of the ISO 37153 International Standard for Assessment and Improvement of Smart City Infrastructure

It is a great honor to receive this ITU-AJ Encouragement Award at this time. I would like to express sincere thanks to ITU-AJ and everyone else involved. I would also like to express deep gratitude to the ISO TC268/SC1 Japan committee, the Japan Standards Association, and Fujitsu Ltd., for their continual support.

As part of Ministry of Economy, Trade and Industry (METI) international standardization development, we promoted creation of international standards for assessment and improvement of smart-city infrastructure, from FY 2014 to FY 2017. We developed ISO 37153:2017-Smart community infrastructures – Maturity model for assessment and improvement, the first Japan-led standard, which was issued in December, 2017. I was the international project leader for ISO 37153, participating in drafting the standard, debate in the Japan domestic committee, presentation and negotiation at international meetings After the standard was issued, I also planned verification tests and promotional activities. It was a great learning experience for me.

There is still a need to revise ISO 37153 and create new specifications as new requirements arise, as the social issues surrounding the evaluation framework for urban infrastructure change, and in particular regarding what urban infrastructure should be like in times of public-health emergencies. I believe that ICT will have an increasingly important role in the future.

Takeshi Shirahase
TV Asahi Corporation
shirahaset@tv-asahi.co.jp https://www.tv-asahi.co.jp/
Fields of activity: SG6

Activity for Future Broadcasting Services through ITU-R SG6

I am deeply honored to receive the ITU-AJ Encouragement Award, and I would like to take this opportunity to thank the ITU-AJ and all those who offered their guidance and encouragement.

My first participation in ITU SG6 block meetings was in 2014. It gave me a great opportunity to join in making some important recommendations regarding UHDTV and Advanced Sound System so that we could launch the new broadcasting service for 4K and 8K UHDTV.

It was necessary to build a simultaneous workflow for making programs for both HDR-TV and SDR-TV using the same system and same cameras.

We discussed practical issues regarding methods for conversions between HDR and SDR, adjusting cameras, and monitoring, with participants from other countries who have different backgrounds. Finally, we achieved the necessary workflow.

High quality programs such as UHDTV with Advanced Sound System are distributed to various locations through various transmission paths nowadays.

It is more important and more difficult to control quality in program production, due to the increasingly diverse viewing environment.

Broadcasting transmission systems have still been the main field for us, but we can hardly discuss them without taking streaming through the internet and mobile viewing devices into account.

I feel it is necessary to have a broader perspective when considering standardization for future broadcasting.

Teruaki Toeda
NTT DOCOMO, INC. (when awarded)
https://www.nttdocomo.co.jp/english/
Fields of activity: Mobile communication

Learning from 5G Standardization Activities at the 3GPP/O-RAN ALLIANCE

I am very grateful to have received this ITU-AJ Encouragement Award at this time. I would like to express thanks to the ITU-AJ, and to everyone for their guidance and encouragement.

I would like to take this chance to introduce the two standardization working groups (WG) that I was in charge of: 3GPP RAN3 and O-RAN ALLIANCE WG5.

3GPP RAN3 is creating standard specifications for mobile phone base-station architecture and related network interfaces. For 5G, to reduce the required transmission bandwidth between base station equipment, a new functional split was created (CU-DU split), and an interface between them, called F1, was specified.

At O-RAN ALLIANCE WG5, we were working to connect equipment and modules from different vendors, each with their own strengths, to rapidly support new services utilizing 5G features.

One thing I have learned from these experiences is to have an attitude of not hating anyone, no matter how they behave. When I was acting as a discussion moderator, there were times when people seemed to be using time just to obstruct progress. On the other hand, such people may have a reason for their behavior and a compromise between both sides can sometimes be found by asking or guessing the backgrounds of the behavior. I think this experience helped me to acquire my skills of finding an acceptable compromise.

5G commercial services have already started, and this major accomplishment is obviously due, not to just me, but to my superiors at the time, and all of my co-workers in this industry. I would like to express my gratitude again, and hope that I can continue to contribute in some area, to further development of 5G and subsequent mobile telephone systems.

Yoshihide Tonomura
NTT COMWARE Corporation
yoshihide.tonomura.ra@nttcom.co.jp https://www.nttcom.co.jp/english/
Fields of activity: ITU-T SG16

Immersive Live Experience Standardization Activity

I am very honored to receive the ITU-AJ Encouragement Award, and I would like to thank the ITU-AJ and the Japan delegation members of ITU-T SG16 for their guidance and encouragement. I received this award for activity in ITU-T SG16, on the Immersive Live Experience (ILE) standard. ILE is a standard that can provide a different viewing experience, feeling as though the athlete is right in front of you. While Virtual Reality (VR) and Augmented Reality (AR) standards assume use of a head mounted display, the ILE standard assumes such displays are not used, and provides a sense of realism, like being there, for events such as public viewings. Currently, it is difficult to hold public viewings, with COVID-19 sweeping over Japan, but this should not continue much longer. In the near future, I expect that everyone will be able to enjoy events such as concerts and sporting events in front of their eyes, in public-viewing conditions.

In the future, if we can create opportunities for connection with the open source community, in parallel with standardization, and to use contributions from non-specialists, I believe that standardization can have a greater impact globally. I hope to be able to contribute toward that sort of development.

Yoshihiro Nakajima
NTT DOCOMO, INC
yoshihiro.nakajima.td@nttdocomo.com https://www.nttdocomo/english/
Fields of activity: Network Function Virtualization

Contributions to NFV Standardization Activities

It is a great honor to receive this Encouragement Award from the ITU Association of Japan. I greatly appreciate the support of my team members and family.

ETSI ISG NFV was established in 2012 and is recognized as the home of Network Function Virtualisation. The concept of NFV used to be "pie in the sky" in earlier times. Now, ETSI NFV architecture has frequently been referenced by many SDOs and is used in commercial deployments, especially by communication service providers, to introduce 5GC systems.

Since I was appointed as ISG Vice-Chair in 2018, I led the discussions among operators and vendors on the future direction of NFV and contributed to the development of NFV Release-4

work items. To promote the use of NFV by operators, I actively provided feedback on standardization from our NFV commercial development. I also worked to expand standardization from the perspective of long-term operation and maintenance at operators.

Since the standardized area of ETSI NFV is maintenance and operation, the definition of standard IF is limited to the provider side, and there are no end-end regulations that are necessary for operators. For users, our team has developed a standard specification for a mandated end-to-end MANO sequence that can be implemented with easy integration and minimal workload for future system upgrades, if the products are compliant with this ETSI NFV standard specification.

NFV is a fundamental technology to support recent trends such as base station virtualization and network node disaggregation, and NFV standardization is taking a very important role in terms of facilitating introduction of related systems and long-term operation. The concept of virtualization in the telecom domain is still developing. I believe that the area of NFV, including RAN and MEC, will expand in the near future. I would like to contribute to the evolution of NFV standardization, to expand its scope and its capability to leverage the latest cloud-native, open source, and networking technology.

Yusei Nishimoto

Japan Broadcasting Corporation
nishimoto.y-iu@nhk.or.jp https://www3.nhk.or.jp/nhkworld/
Fields of activity: ITU-R SG4, SG5, SG6, WRC, Broadcasting Services

Efforts to Expand Broadcasting Business through ITU-R/WRC

I am very grateful for the honor of receiving this ITU-AJ Encouragement Award. I would like to express sincere thanks to the ITU-J and everyone who has given me guidance in these standardization activities.

Since 2017, I have participated in ITU-R SG4 (Satellite services), SG5 (Terrestrial services), and SG6 (Broadcasting services), handling agenda items in WRC-19 related to broadcasting, and involved in technical study and standardization related to broadcasting. I was also involved in WRC-19, dealing with international radio regulations related to broadcasting.

To ensure smooth progress when considering shared use with new wireless technologies to use spectrum effectively, we created ITU-R reports and recommendations with common parameters in radio technology used by broadcasters, and conducting studies and discussion regarding the potential for shared use while protecting existing businesses. In satellite broadcasting, to ensure stable operation of satellite broadcasting services into the future, we also participated in discussion and planning of operational regulations, such as broadcast satellite registration procedures.

Regarding standardization of new technologies supporting broadcast services, broadcasters from around the world are highly interested in the leading-edge initiatives of Japan's broadcasters. We are involved in creating many ITU-R reports and recommendations, from core technologies such as 4K/8K and next-generation terrestrial broadcasting to AI applications in program production.

Technology standardization will play an important role in the continuing expansion and advancement of broadcast services in the future. I hope to continue contributing to the development of technology to support broadcast services, considering the further diversification of viewing environments, and other environments related to broadcasting.

Kenichi Yamamoto

KDDI CORPORATION
kc-yamamoto@kddi.com http://www.kddi.com/english/
Fields of activity: oneM2M, GSMA Operator Platform Group, 3GPP SA2/CT3

Standardization Activities in oneM2M, GSMA and 3GPP

It is a great honor to receive this prestigious Encouragement Award from the ITU-AJ at this time. I am deeply thankful to all who have regularly given me support and advice.

I have been involved in oneM2M activities, which handles IoT platform standardization, since 2016, creating technical specifications as the rapporteur for work items, including Vehicular Domain Enablement, Edge Computing, and Interworking with 3GPP SCEF API. In 2018, I was also presented with a oneM2M Technical Excellence Award, as a participant with outstanding technical contribution.

In 2020, I participated in the GSMA Operator Platform Group, by suggesting requirements for using services functions that are exposed by the 3GPP NEF. This group created the requirements for an Edge Computing platform and 3GPP and ETSI ISG MEC are planning to hold specification discussions based on these requirements.

Starting in 2021, I am participating in 3GPP SA2 and CT3 meetings and am involved in standardization of areas such as Network Automation and Network Exposure.

In the future, I hope to continue contributing to activities in these organizations, to work to nurture others coming up in this field, so that Japan can produce many who can be active in the front-lines of standardization.

Rudi Lumanto
IDSIRTII BSSN
rudi@csirt.id https://idsirtii.or.id
Fields of activity: Cyber Security

How International Cooperation Is Boosting the Solution of Cyber Security Problems

I was completely surprised, but I am very happy to receive this ITU-AJ Encouragement Award this year. This award is for all people that have supported me and given their warm guidance, both from Japan and Indonesia.

In 2009, I joined National CSIRT of Indonesia, called ID-SIRTII/CC (Indonesia Security Incident Response Team of Internet Infrastructure / Coordination Center), which led me to understand more about the cyber security problems faced by my country, especially because limitations in many areas, such as knowledge, technology, regulation, budget, and even human resources. In 2011, I was appointed as chairman of ID-SIRTII/CC and felt the burden from such problems increasing as the country, like other ASEAN countries is changing drastically and trying to boost national development by adopting the latest ICT in many sectors.

The CSIRT concept as a strategy to manage cyber security processes and reduce cyber threat was in very poor condition at that time. However, after some serious national cyber incidents and encouragement from telecommunication communities and experts, the Ministry of Communication enacted ID-SIRTII/CC as Indonesia's national CSIRT in 2007. The purpose of its establishment, as stated in the Ministerial decree, is building a safer environment and utilization of IP based telecommunication networks that is safer from any potential threats and attacks. It is a very big mission but with very limited resources. My role is to solve these problems by using whatever resources I have, while trying to reduce the cyber risk. This brings me to the strategy of international cooperation and how to use and utilize it while solving the problems of budget, capacity building, security awareness, etc., and even contributing to national cyber security strategy. International cooperation, especially with Japan, gave many concrete solutions to answer both technical and non-technical problems. As cyberspace is borderless due to the connected telecommunication infrastructure, solving one node helps the overall chain stay safe and secure. I believe international cooperation gives benefit to not just one country, but to all. I would like to continue to contribute to these activities together.

QKDN Standardization Team
NICT Quantum ICT collaboration center
kaoru.kenyoshi@nict.go.jp https://www.nict.go.jp/en/
Fields of activity: QKD, QKDN

Receiving a 2020 ITU Association of Japan Encouragement Award

In September last year, we received an Encouragement Award from the ITU Association of Japan. Some time has already passed since then, but we would like to take this opportunity to offer thanks to all of those involved. Receiving this award is really a result of efforts by the quantum key distribution network standardization team, including members from NICT, NEC, and Toshiba. This activity was supported by a strong partnership with NICT, NEC, and Toshiba.

NICT, NEC and Toshiba made a proposal to ITU-T SG13 and SG17 based on research results from the Tokyo QKD Network in Japan. At the June, 2019, WP meeting of the SG13, Y.3800 "Overview of QKDN" was approved, and later, a series of Recommendations were completed, including Y.3802 Functional Requirements, Y.3803 Architecture, Y.3804 Key Management, and X.1710 Security Framework. For these important Recommendations, which is the basic standard set for QKDN, NICT, NEC and Toshiba worked actively as editors, and the proposals from Japan were adopted in these Recommendations.

Currently, large scale feasibility tests connecting all of Europe, such as OpenQKD, are being conducted, and a QKDN spanning 4,600 km and connecting Beijing and Shanghai is being built in China. In Japan, a quantum cryptographic network is being developed and built based on the Tokyo QKD Network, and efforts to implement it are being strengthened. We intend to continue building a safe and secure society using quantum technologies, with cooperation from many partners. We look forward to everyone's continued support in these efforts.

Towards the next 50 years!

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