Chapter 5

ICT Policy Directions

Section 1　Promoting Comprehensive Strategy

1. Promoting National Strategies

In December 2020, "the Basic Policy for Reforms toward the Realization of a Digital Society" was decided by the Cabinet.

In order to promote measures for formation of a digital society promptly and in a focused manner based on this Basic Policy, including the bill for establishment of the Digital Agency, six bills related to digital reform were decided by the Cabinet in February 2021, enacted upon passage through the Diet in May of the same year, and promulgated.

In June 2021, "the Priority Policy Program toward the Realization of a Digital Society" was decided by the Cabinet.

2. Promoting MIC's ICT Comprehensive Strategy

(1) Promoting Utilization of Digital Technologies toward the "Post COVID-19" Age

In order to promote use of digital technologies under the influence of the COVID-19 infection, the Ministry of Internal Affairs and Communications (MIC) started "the Round-table Conference on Utilization of Digital Technologies in the 'Post Covid-19' Age" in October 2020 for discussions with medium- to long-term view from the perspective of establishment of the new normal and economic/regional vitalization.

(2) Creating a Foundation for Economic Innovation toward the Realization of Society 5.0

Attention in Japan and around the world has focused on many problems surrounding digital platform operators, such as a lack of transparency and fairness in terms and conditions, data oligopolies, personal information security breaches, and illegal or improper acts committed on online platforms.

For survey and deliberation on priority issues regarding the digital market, the Digital Market Competition Council has been held with participation of the Minister for Internal Affairs and Communications. The council discusses rule development of the digital market. As a result, "the Act on Improving Transparency and Fairness of Specified Digital Platforms" and other acts were enacted during the Diet ordinary session in 2020. Later, toward enforcement of the act, the Digital Market Competition WG discussed the guidelines regarding voluntary procedure/system development and the direction of monitoring review, in addition to the indicators for designation of specified digital platform providers and their information disclosure. Based on these discussions, governmental and ministerial ordinances and guidelines (notices) were developed and the act was enforced in February 2021.

Section 2　Developments in Telecommunications Policy

1. Ensuring Fair Competition

(1) Development of a Fair Competition Environment in the Telecommunication Business Field

In May 2019 MIC amended a part of the Telecommunications Business Act and developed a system to completely separate communications charges from terminal device prices and rectify the excessive enclosure of customers.

In order to assess and verify the effects of the measures that were taken based on this revision and the impacts on the mobile communications market, "Working Group on Verification of Competition Rules" was held under "the Meeting for Telecommunications Market Validation." The WG compiled "the 2020 Report on Verification of Competition Rules" in October 2020.

In addition, since December 2020 "the study meeting on the ideal state of ensuring fair competition" has been held under "the Meeting for Telecommunications Market Validation" to conduct a study from the perspective of ensuring fair competition in the telecommunications market.

(2) Ensuring Fair Competitive Conditions in the Era of IP Networks

MIC Began holding meetings of "the Study Group on the Calculation of Interconnection Charges" in March

2017, as the IP-based telecommunication networks have progressed. In September 2020, the fourth report was compiled and MIC formulated "the Guidelines for the Verification of Wholesale Charges for Designated Equipment Wholesale Services" based on the discussions at the meetings.

(3) Mediation and arbitration by the Telecommunications Dispute Settlement Commission

The Telecommunications Dispute Settlement Commission is a specialized organization established for the purpose of handling, promptly and fairly, increasingly diverse conflicts in the telecommunication field, where technological innovation and competition are advancing at a remarkable rate. Disputes are currently handled by five members and eight special members appointed by the Minister for Internal Affairs and Communications.

The commission has three functions: (i) performing mediation and arbitration; (ii) deliberating on and releasing reports in response to consultations from the Minister for Internal Affairs and Communications; and (iii) providing recommendations to the Minister for Internal Affairs and Communications.

2. Promoting Development of Broadband Infrastructure

(1) Promoting Optical Fiber Development

Since FY2019 MIC has been implementing "the Project on Promoting Advanced Radio Environment" that subsidizes a part of the costs of optical fiber installation that is a prerequisite for high-speed, large-capacity wireless communications including 5G, born by local governments, telecommunications carriers and others. In FY2020, 50.16 billion yen was appropriated to this project in the second supplementary budget so that municipalities can install optical fibers in all desired areas.

(2) Approaches of Broadband Infrastructure

Based on the final report titled "the Comprehensive Verification of Competition Rules in the Telecommunications Business Field", MIC has been holding the Study Group on Approaches of Broadband Infrastructure to examine approaches of broadband infrastructure since April 2020.

(3) Ensuring the Quality of Internet Services

Concerning the traffic of the Internet, "the Internet Traffic Study Group" has held since December 2020 to identify various issues on the Internet routes, to share and examine initiatives and understanding by parties involved and to examine initiatives that will be required in the future.

3. Ensuring Safe and Reliable Telecommunications Infrastructure

(1) Approaches to Establishing Systems and Operating for Technical Standards on Telecommunications Facilities

a. Establishment of Systems for Technical Standards on Telecommunications Facilities to Address the Growth of the IoT

The Subcommittee on IP Network Facilities, under the Department of Information and Communications Technology of the Information and Communications Council, began examining "technical requirements for telecommunications facilities to address the growth of the IoT" in December 2017. The purpose of the examinations is to ensure network conditions in which various IoT services can be used securely and stably.

As the fourth examination, from June to November 2020, in order to ensure sustainability, the subcommittee discussed technical conditions including maintenance of communication quality (e.g., delay, fluctuation) and important communications of telephone services, for which the approved telecommunications carriers use equipment of others in some access sections.

b. Securing Communication Services in Disasters

MIC has been holding the "Liaison Committee on Securing Communications Services in the Event of Disaster" since October 2018. The purpose is to verify the functioning of frameworks for cooperation in normal times between MIC and key telecommunications operators including designated public corporations, in order to ensure more appropriate responses.

The national government launched the "Team to Verify for Typhoons No. 15 and No. 19 of 2019 and Other Disasters" in October 2019 for cross-sectoral discussions among ministries and agencies. The team discussed countermeasures for each issue to be improved and compiled its final report in March 2020. Based on this verification, the MIC-Telecom Emergency Assistance Members (MIC-TEAM) was launched in June 2020 in order to provide disaster response support for securing of information and communications means.

c. Analysis and Verification of Telecommunication Accident Reports

MIC has been holding meetings of the "Telecommunication Accident Verification Council" since 2015 to make effective use of various measures to prevent the reoccurrence of accidents by verifying accident reports. The council summarized the results of its verifications of telecommunication accidents that occurred in FY 2019 and issued the "Report on Verifications of Telecommunication Accidents in FY 2019" in September 2020.

4. Developing Safe and Secure Environments for Use of Telecommunications Services

(1) Dealing with Illegal/Harmful Information

In order to give shape to the initiatives to urgently deal with libel and slander on the Internet, MIC published the "Policy Package to Deal with Libel and Slan-

der on the Internet."

Fake news and false information on the Internet have also become problems in recent years. MIC discussed the issue at "the Study Group on Platform Services" and published a report in February 2020 to show approaches of specific countermeasures.

(2) Promotion of Consumer Assistance Policies

The Act Partially Amending the Telecommunications Business Act went into force in May 2015. One purpose of the act was to further enhance and strengthen consumer protection rules.

MIC also formulated the "Basic Policy on Supervision of User Protection Regulations in the Telecommunications Business" to implement consumer protection rules appropriately and ensure the effectiveness of consumer protection systems. Furthermore, the ministry holds the "Regular Meeting for Monitoring of the Implementa-

tion Status of Consumer Protection Rules" with the participation of experts and related trade associations to share and evaluate the implementation status of consumer protection rules among related parties.

The ministry held the 10th Regular Meeting for Monitoring in February 2021.

(3) Development of Internet Usage Environments for Young People

"The Act Partially Amending the Act on Development of an Environment that Provides Safe and Secure Internet Use for Young People" went into force in February 2018.

Regarding the efforts made by parties involved after the amendment, MIC released the "Examinations Based on the Supplementary Provision of the Act on Development of an Environment that Provides Safe and Secure Internet Use for Young People – Views Concerning Efforts Made by Telecommunications Carriers."

Section 3   Developments in Radio Policy

1. Promoting Effective Radio Spectrum Use

(1) Study on Promotion of Effective Radio Utilization in the Age of Digital Transformation

MIC has been holding the "Round-table Conference on Radio Policy in the Age of Digital Transformation" since November 2020. The conference mainly studies the (1) future vision of radio utilization, (2) challenges of radio policy in the age of digital transformation, and (3) setting of new goals and measures to achieve them toward effective radio utilization in the age of digital trans-

formation. Its report is scheduled to be compiled around August 2021.

(2) Promoting Overseas Deployment of Radio Wave Systems

For global deployment of radio wave systems, for which Japan has considerable strengths, strategic efforts with focus on Asian countries have been made for public-private cooperation.

2. Radio Usage Advancement and Diversification Initiatives

(1) Sophistication of Mobile Communication Systems
a. Toward the spread and deployment of 5G

In January 2019, the ministry formulated "Guidelines on Establishing Specified Base Stations for the Introduction of the 5th Generation Mobile Communications System" and started accepting applications for authorization of establishment plans. In April 2019, frequencies for 5G were allocated to the mobile operators who had made application. In addition, in order to spread 5G, the 1.7GHz band that can be used in areas other than Tokyo, Nagoya and Osaka was allocated to one mobile operator.

b. Beyond 5G

MIC has been holding the "Beyond 5G Promotion Strategy Roundtable" since January 2020 for study toward formulation of a comprehensive strategy, keeping in mind the needs and technical progress expected at the time of introduction of Beyond 5G. Based on the study, MIC has released the "Beyond 5G Promotion Strategy—Roadmap towards 6G—" in June of the same year.

Various efforts were made for realization of Beyond 5G based on the strategy. For example, the "Beyond 5G Promotion Consortium" was launched in December for

promotion of the strategy in industry-academia-government collaboration, and the "Beyond 5G New Management Strategy Center" was established to strategically acquire and standardize intellectual property.

(2) Promotion of Intelligent Transport System

Based on the "Public-Private ITS Initiative/Roadmaps 2020" that was formulated by the IT Strategic Headquarters in July 2020, MIC is working toward the spread and deployment of 5G. The 5.9GHz band is globally considered as frequencies for V2X. The ministry is conducting technical studies on frequency sharing necessary for introduction of a new V2X system in the 5.9GHz band as a part of its efforts for realization of an autonomous driving society.

(3) Promotion of Public Safety LTE

In response to the report compiled by "the Roundtable Meetings on Effective Use of Radio and Growth Strategy", which have been held since November 2017, MIC was decided to study technical requirements and operational structures necessary for "Public Safety LTE" that will contribute to effective use of frequencies.

In FY2021 the ministry started advance operation of

basic functions, while continuing demonstrations for improvement of safety and reliability, toward full-scale operation in FY2022.

(4) Regional Deployment of ICT Infrastructure

In order to deploy ICT infrastructure nationwide as soon as possible, using development supports for ICT infrastructure including 5G and optical fiber, and using measures to promote 5G utilization, MIC formulated "the Master Plan on the Regional Deployment of ICT Infrastructure" that presents deployment policies toward the end of FY2023 and specific promotion measures together with a roadmap.

"The Master Plan on the Regional Deployment of ICT Infrastructure" presents policies on: (1) area development in disadvantaged areas (base station development); (2) diffusion of advanced services, including 5G; (3) countermeasures to shielding of radio waves in railway/road tunnels, and (4) optical fiber development.

3. Establishment of Radio Usage Environments

(1) Promoting Measures for the Electromagnetic Environment of Living Organisms

MIC promotes efforts to establish conditions for safe and secure radio usage. Regarding the impact of radio waves on humans, safety standards have been set on the strength of radio waves in the Radio Act and related Regulations based on radio protection guidelines.

MIC works to inform citizens about the safety of radio signals used in 5G and other systems through telephone consultations, information sessions, and leaflets.

MIC conducts "the Study on the Effect of Radio Waves on Medical Equipment" every year. In FY2019 the ministry measured the effects of radio waves on medical devices including implanted cardiac pacemakers by constructing a simulation system radiating 5G radio waves.

(2) Promoting Countermeasures against Electromagnetic Interference

"The Radio Wave Utilization Environment Committee" that was set up under the Department of Information and Communications Technology of the Information and Communications Council is contributing to the deliberation on international standards at the International Special Committee on Radio Interference by conducting survey and studies on electromagnetic interference. In response to the report of the Information and Communications Council, MIC, through promotion of standardization in the country, is working to exclude disturbance of radio equipment by unnecessary radio waves and prevent interference with electric/electronic equipment.

(3) Preventing Radio Wave Interference/Jamming

In addition to radio wave monitoring and elimination of radio wave interference/jamming, MIC is reinforcing measures regarding distribution of radio equipment that could cause these problems.

In order to improve the effectiveness of this system in response to the changes in production and distribution of radio equipment in recent years, the Radio Act was amended in FY2020 to relax the conditions for issuing recommendations/orders to business operators who produce non-conforming equipment.

Section 4   Developments in Broadcasting Policy

1. Desirable State of Public Broadcasting

MIC set up "Subcommittee to Study the Public Broadcasting System" in April 2020 and studied (1) follow-up of the three-part reform of NHK operation, fee for receiving broadcasts and governance, and (2) the desirable state of the fee for receiving broadcasts system from various viewpoints.

2. Strengthening the Foundation of Broadcasting Businesses

"The Subcommittee to Study Strengthening of the Foundation of Broadcasting Businesses" studies the current state and future outlook of broadcasters, desirable ways for strengthening their business base, state of AM radio, securement of governance by broadcasters and other matters. The department released "the Report on Strengthening the Foundation of Broadcasting Businesses" in July 2020.

"The Working Group on the Future Image of Satellite Broadcasting" is a forum to summarize the current state and challenges of satellite broadcasting in Japan and study future visions of satellite broadcasting in response to the increasing sophistication of broadcasting. The group started to hold meetings in February 2018 and compiled a draft report in December 2020.

3. Promoting Broadcast Content Circulation

(1) Promoting Production and Circulation of Broadcast Content

a. Desirable state of distribution systems and networks to support broadcast contents circulation

In FY2020 MIC implemented a demonstration project concerning efficient and stable distribution of Internet contents through utilization of regional IX/CDN, etc.

b. Securing proper and smooth production/circulation of broadcast contents

MIC held the "Committee to Review Promotion of Proper Production/Trade of Broadcast Contents." Based on the discussions at the committee, the ministry released guidelines (7ᵗʰ edition) with revisions including standardization of contracts on ownership, etc. of copyrights and enhancement of templates in September 2020.

Regarding right processing for simultaneous distribution, MIC held the "Study Meeting on Right Processing for Simultaneous Internet Distribution" to study necessary measures for smooth right processing based on the state of simultaneous distribution in Japan.

c. Utilization of Viewing Data in the Broadcasting Field and the Ideal State of Privacy Protection

Based on the amendment of the Act on the Protection of Personal Information, etc., MIC set up a "Study Group on the Utilization of Viewing Data in the Broadcasting Field and the Ideal State of Privacy Protection" in April 2021. With focus on "pseudonymously processed information" and "person-related data" that are newly provided, the Study Group will conduct studies toward amendment of the broadcasting guidelines, which is scheduled by April 1, 2022.

(2) Overseas Deployment of Broadcast Content

MIC, in cooperation with the Broadcast Program Export Association of Japan (BEAJ) and relevant government offices, is providing continuous support for joint initiatives by Japanese and overseas broadcasters to produce broadcast contents that transmit the attractiveness of various regions in Japan.

4. Improving the Resilience of Broadcast Networks and Enhancing Their Disaster Resistance

Toward establishment and acceleration of the "new normal," under "the Program to Enhance Disaster Resistance through Conversion of Cable Television to Fiber Optics toward Establishment of the 'New Normal'", MIC budgeted subsidy for a part of the costs necessary for conversion of cable television networks to fiber optics in local regions in the third supplementary budget of FY2020 and the initial budget of FY2021.

Furthermore, in order to support initiatives by broadcasters, local governments and others to improve the resilience of broadcasting networks, MIC implemented "the Projects to Support Development of Broadcasting Networks (the Project on the Development of Basic Terrestrial Broadcasting Networks, the Project of Regional Cablecasting Network Development and the Project on the Development of Disaster Information Broadcasting/ Transmission Systems)," "the Project to Support the Solution of Bad Reception of Commercial Radio" and "the Project to Support Disaster Resistance Reinforcement of Basic Terrestrial Broadcasting, etc.," spending the initial budget of FY2021.

Section 5   Promoting Cybersecurity Measures

1. Examinations of Action Plans for Cybersecurity Measures

(1) Efforts by the Government

Keeping in mind the vision for 2020 and after, in order to clarify Japan's basic position and desirable state of cybersecurity, while clearly showing the goals and implementation policy of various measures to be undertaken in the following three years to the country and the world, the Cabinet decided the "Cybersecurity Strategy" in July 2018. Under this strategy, the government compiles an annual report on implementation status of specific measures and annual plans of specific measures to be implemented in the coming fiscal year. For FY2020 "Cybersecurity 2020" was de-

cided by the headquarters in July 2020.

(2) Efforts by MIC

MIC set up the "Cybersecurity Task Force" in January 2017. In October of the same year the task force compiled tasks to be tackled for comprehensive promotion of security measures regarding IoT and released the result as the "IoT Security Comprehensive Measures." In June 2021, an appeal was made for opinions on the "Draft ICT Cybersecurity Comprehensive Measures 2021" that presents immediate key policy challenges.

2. Enhancing Cybersecurity Measures

(1) Initiatives Pertaining to IoT

In order to enhance cybersecurity of IoT devices, MIC and NICT, in cooperation with Internet service providers (ISPs), launched the "National Operation Towards IoT Clean Environment (NOTICE)" project in February 2019.

Under NOTICE, survey is conducted roughly once a month. The survey of March 2021 covered about 110

million IPv4 addresses held by 66 ISPs participating in this project.

(2) Initiatives Pertaining to Human Resources Development

MIC has been actively promoting initiatives to train cybersecurity personnel (CYDER, Cyber Colosseo, and SecHack365) at the NICT's "National Cyber Training Center".

(3) Initiatives to Promote Security Measures in Response to the Progress of Digitalization

a. Cloud service security

"The Basic Framework for the Security Assessment System for Cloud Services Introduced into Government Information Systems" determined the (i) basic framework, (ii) concept on utilization among governmental organizations, and (iii) administrative jurisdiction and operational structure.

Based on the basic framework, an ISMAP Operation Committee was inaugurated on May 25, 2020. This is the highest decision-making body for ISMAP, members of which are experts and representatives of the ministries and agencies with administrative jurisdiction over ISMAP, i.e., the Cabinet Secretariat (National Center of Incident Readiness and Strategy for Cybersecurity/Information and Communications Technologies [IT] Comprehensive Strategy Office), MIC, and METI.

b. Telework Security

Since 2004, MIC has been formulating "Telework Security Guidelines" to dispel security concerns and to help the introduction of and confident utilization of telework. Utilizing the opportunity presented by infection countermeasures, the ministry revised the guidelines in May 2021 through a sweeping review of the security measures to be implemented and the specific trouble cases.

In addition, MIC formulated "the Telework Security Guide for SMEs (Checklist)" with focus on reliably securing minimum security in September 2020 and revised the guide together with the Guidelines in May 2021.

c. Wireless LAN security

MIC formulated guidelines on wireless LAN security measures separately for users and providers and released revised versions in May 2020 in response to new technologies and the latest security trends.

(4) Initiatives related to Trust Services

MIC set up "the Working Group on Review of Trust Service" under "the Study Group on Platform Services" in January 2019. The WG studied the desirable state of trust services in Japan and presented the final report in February 2020 to show a direction of trust services.

MIC promulgated "the Rules on the Certification of Time Authentication Business" in April 2021 and established a national certification system.

Furthermore, as a place for discussion on e-seal, "the Study Meeting on a System for Ensuring the Reliability of Data Issued by Organizations" was set up in April 2020.

(5) Initiatives for International Cooperation

Because cyberspace has a global reach, cooperation with foreign countries is indispensable for establishment of cybersecurity. For this reason, MIC is actively participating in discussions at various international conferences and cybersecurity councils and disseminating and collecting information with the aim of contributing to international consensus building regarding cybersecurity.

Section 6   Promoting IoT/ICT Use and Application

1. Problem-solving Using Advanced Technologies

(1) Promoting Local 5G

MIC established the use of the 28.2 GHz-28.3 GHz frequency band for local 5G and started to accept applications in December 2019. Later, use of the 4.6 GHz-4.9 GHz and 28.3 GHz-29.1 GHz frequency bands was also established in December 2020.

Since FY2020 MIC has been working on "Development Demonstrations for Realization of Local 5G Services to Solve Local Issues" to build problem-solving models using local 5G through technology verification on radio propagation of local 5G and other matters.

In addition, a "5G investment promotion tax system" was established in FY2020.

Furthermore, "the Public-private Liaison Conference to Spread Local 5G" consisting of interested bodies and local 5G promotion organizations in respective regions was set up in January 2021.

(2) Promoting Telework

Government agencies relevant to telework including MIC have set nationwide "Telework Days" in summer to encourage enterprises and others to implement telework. During 2020 Telework Days, the government agencies called for continuous and nationwide implementation of telework without limiting the period.

In addition, MIC selects certain companies sufficiently using telework as the "100 Pioneers in Teleworking" and confers "Minister of Internal Affairs and Communications Awards" to recognize especially outstanding initiatives among the 100 Pioneers.

In conjunction with existing SME assistance organizations, MIC is establishing support centers (telework support networks) across the country, while providing free individual consulting by experts (telework manager) for enterprises considering introduction or improvement of telework.

In FY2021, under "the Project on Development Pro-

motion of Regional Satellite Offices" MIC will aid development of satellite offices for promotion of a social environment where people can enjoy the new working style regardless of region.

(3) Promoting ICT Utilization

Since FY2017 MIC has been implementing the "Project to Promote Smart Cities of Data Utilization and Application Type."

In FY2020 MIC and relevant ministries worked together to realize Smart Cities. MIC supported projects of five local governments/organizations.

MIC has been implementing research projects by AMED, which are since FY2020 research of networks necessary for advanced remote medical care and development of data infrastructure using AI/IoT. In addition, to promote use of Personal Health Record (PHR) services by private sector business operators, MIC, the Ministry of Health, Labor and Welfare (MHLW), and the Ministry of Economy, Trade and Industry (METI) have

organized a "Study Team on Private Utilization" under "the Working Group for the Utilization of Information in Health Examinations" organized by "the Study Group on the Utilization of Health, Medical, and Nursing Care Information." This Study Team studied rules for private-sector personal health record (PHR) businesses. Based on the study, the Study Team compiled and released the "Basic Guidelines for the Management of Information in Health Examination by Private-sector PHR Businesses" and "Report of the Study Team on Private Utilization" in April 2021.

(4) Promoting/spread of AI

MIC established "the Conference toward AI Network Society" in October 2016. The Conference has been studying social, economic, ethical, and legal issues toward promotion of AI networking, issued its 2020 Report, and continues making efforts toward the safe, secure, and reliable implementation of AI in society.

2. Creating Environments Where Everyone Can Enjoy Convenience through ICT

(1) Promoting Support for ICT Use and Application

MIC runs the "Research and Development of Technologies for Bridging the Digital Divide", which subsidizes the companies the funds necessary amount to conduct R&D into technologies for communication and broadcasting services designed for older or disabled people. In FY2020 the subsidy was given to four recipients.

Furthermore, through NICT, MIC runs a "Subsidy Program that Promotes the Development and Provision of Communication and Broadcasting Services Offering Information Barrier-free" and provided subsidy to five recipients in FY2020.

For improvement of ICT literacy, MIC held demonstrations featuring "digital application supporters" at 11 places across the country. The supporters are available in communities for older people and others to consult with and learn how to use ICT devices and services.

As a measure for human support, MIC has been operating the "Dispatch System of Regional Informatization Advisors" to send advisors who have ICT knowledge and to give advice on ICT utilization at the request of local governments considering initiatives that use ICT. In FY2020 advisors were dispatched to 227 local governments.

(2) Promoting the Expansion of Broadcasts for the Vision and Hearing Challenged

In February 2018, MIC established the "Guidelines concerning Information Accessibility in the Broadcasting Field," which set targets for diffusing subtitle broadcasting, audio description and sign-language broadcasting for FY2018 to FY2027 to encourage voluntary efforts by broadcasters.

The ministry has been also providing subsidies for production of programs with subtitles, audio description and sign-language and started subsidy for equipment arrangement costs necessary for addition of subtitles to live programs in FY2020.

(3) Telephone Relay Service as Public Infrastructure

The Act on Facilitation of the Use of Telephones for the Persons with Hearing Impairments, etc. was enforced on December 1, 2020.

Based on the Act, in January 2021 the Minister for Internal Affairs and Communications designated the Nippon Foundation Telecommunication Relay Service as a "providing organization of telephone relay service." The minister designated the Telecommunications Carriers Association as a "support organization of telephone relay service."

(4) Raising ICT Literacy

a. Promoting e-Net Caravans

MIC holds "e-Net Caravans" - a series of rotating classes given across the country to guardians, teachers, children, and students - for the purpose of increasing public awareness about safe use of the Internet by children. Working in partnership with MEXT, companies in the ICT sector, and other companies and organizations, e-Net Caravans were held at 1,208 locations nationwide in FY 2020.

b. Raising Internet Literacy Levels of Young People

Referring to the latest cases of Internet-related troubles that actually occurred, through hearings of experts, MIC compiled their prevention methods and released them as the "Internet Trouble Casebook."

3. Promoting Data Circulation

(1) Social implementation of Personal Data Trust Bank

MIC and METI held the "Study Meeting on the Ideal State of the Accreditation Scheme of Information Trust Functions" to discuss requirements of performers of information trust functions and the ideal state of the accreditation scheme, including its operation scheme. In June 2018, the ministries compiled the "Guidelines on Certification Schemes Concerning Functions of Information Trust ver.1.0" regarding the system of arbitrary accreditation of personal information trust banks by private organizations, etc. Based on the guideline, a certifying organization "Information Technology Federation of Japan" decided the first certification of "Personal Data Trust Bank" in June 2018.

As of April 2021, a total of seven companies were certified since the start of accepting application and two services are already in operation.

(2) Promoting Cashless Payments

June 2019 Cabinet decision "Follow-up on the Growth Strategy" set the target of doubling the proportion of cashless payments to around 40 percent by the end of June 2025.

"Payments Japan Association" was established by related organizations and businesses in July 2018 to promote cashless payments. The association set out "Guidelines for Unified Technologies Standard of Code-Payment"

in March 2019. MIC conducted demonstration projects to verify the effects of introducing cashless payment in small retail stores in five prefectures in FY2019. In FY2020, the ministry enabled application for introducing JPQR from stores across the country through the web and held briefing sessions for stores and other retailers. MIC also worked to increase local stores where Mynapoint can be used. As a result, about 16,000 stores introduced JPQR in total of FY2019 and FY2020 (as of March 2021).

(3) Deploying Cloud Services

The "Nationwide SME Cloud Implementation Awards" were launched in FY2019, with CLOUDIL as the secretariat and an executive committee comprising the Japan Chamber of Commerce and Industry, the Central Federation of Societies of Commerce and Industry, the National Federation of Small Business Associations, and other related organizations. MIC is a co-sponsor of the awards. The purpose of the awards is to collect and showcase examples of regional SMEs implementing cloud services resulting in higher revenues and more efficient business operations.

The FY2020 Implementation Awards collected 57 self-declarations and registration of 39 implementation examples from SMEs across the country.

Section 7   Promoting ICT Research and Development

1. Promoting Research and Development Strategies

The 6th Science, Technology and Innovation Basic Plan decided by the Cabinet in March 2021 calls for "Transforming of our country into a highly sustainable and resilient society through the fusion of cyberspace and physical space" and "investments in knowledge and people." The plan describes to strategically strengthen ICT as the next-generation infrastructure technology essential for the realization. June 11, 2019 Cabinet Decision "Integrated Innovation Strategy 2019" listed AI, quantum technology, and other technologies as fields

where initiatives should be further strengthened.

In this context, regarding the "desirable state of new information communication technology strategy," under the Department of Information and Communications Technology of the Information and Communications Council, the Subcommittee on Technology Strategy compiled the 4th interim report, "New ICT Strategy in the Beyond 5G Era" in August 2020 in order to promote ICT strategies toward realization and global expansion of Society5.0.

2. Enhancing Research and Development to Realize Cutting-Edge ICT in All Aspects of Society

(1) R&D on Beyond 5G

With the aim of formulating a comprehensive strategy based on the needs and technical progress expected at the time of introducing "Beyond 5G", which is the generation after 5G, MIC started the "Beyond 5G Promotion Strategy Roundtable" in January 2020 and released the "Beyond 5G Promotion Strategy – Roadmap to 6G" in June of the same year.

In order to support R&D on cutting-edge component technologies necessary for realization of Beyond 5G, the ministry established a fund for research and development through open invitation at the National Institute of

Information and Communications Technology (NICT) and developed test beds and other facilities/equipment for common use to gather public and private knowledge.

In addition, at the Beyond 5G New Business Strategy Center that was established in December 2020, MIC will strategically promote acquisition of intellectual property and global standardization in close industry-academia-government cooperation. At the same time, in order to promote global standardization from the initial stage of R&D, the ministry will implement international joint research with research institutes of strategic partner countries/regions.

(2) Promoting the Global Communication Plan 2025 (multilingual translation technologies)

For further sophistication of NICT's multilingual translation technologies toward 2025 and with a view to the Expo 2025 (Osaka, Kansai), MIC formulated the "Global Communication Plan 2025" in March 2020. Based on the plan, since FY2020 MIC has been implementing R&D for realization of simultaneous multilingual interpretation by AI to handle business and international conference discussions and also for increase of priority languages.

(3) R&D into Quantum ICT

NICT is conducting R&D into quantum cryptography that cannot be deciphered with computers and into quantum communications technology based on quantum signal processing that extracts information from weak optical signals. In FY2020 NICT conducted demonstration experiments toward its social implementation.

(4) Promoting R&D into Innovative Optical Network Technologies

Since FY 2018, MIC has been establishing innovative optical transmission technologies, such as signal processing technology for 5 terabit-per-second class optical transmissions and multicore-fiber transmission technology. The ministry is also conducting R&D into base technologies for high-efficiency optical access that can efficiently accommodate demand for diversifying communication services in access networks.

3. Assistance for Creating Innovation Using Competitive Funding

(1) Strategic Information and Communications R&D Promotion Programme (SCOPE)

Under the SCOPE competitive funding scheme, MIC seeks a broad range of novel R&D themes in the ICT field from universities, national R&D agencies, private companies, local government research institutes, and other organizations. After a screening process by outside experts, the ministry commissions promising R&D themes. Since FY 2002, MIC has provided financial support to over 1,000 R&D themes.

In FY2020 the ministry implemented R&D under six programs: (1) Oriented for Social Deployment, (2) ICT Basic and Fostering, (3) Promotion of Effective Use of Radio Frequencies, (4) Radio Wave COE, (5) International Standard Acquisition and (6) *INNO*-vation.

(2) Inno-vation Program

MIC runs the "Inno-vation Program" to support attempts to solve technological problems that may become the seeds of disruptive innovations in the ICT field.

In FY2020 the program received 18,154 submissions. In the Disruptive Challenges category, 16 "Zero-One Challengers" who do trial and error without fearing failure and 10 "Disruptive Challengers" who boldly tackle their technological problems began their challenge at the respective stages.

4. ICT R&D Program in International Cooperation

(1) Strategic International Joint Research in Cooperation with Foreign Governments

Based on the agreement at the Japan-Europe ministerial meeting in May 2012, starting from the same year, MIC in cooperation with the European Commission has been implementing the Japan-EU joint research program that provides R&D funds to joint proposals by universities, private enterprises and other research institutes in Japan and European Union.

Furthermore, MIC started joint research with U.S. Research Institutes in FY2016.

(2) Promoting International Researcher Exchange

NICT implements the "International Exchange Program" to promote international exchange by researchers.

In FY2020 NICT supported four invitations (including two invitations continued from the previous year) of researchers from Asian countries and countries in other regions.

5. Promoting Public Implementation of R&D Findings

In addition to JGN and StarBED expansion, NICT developed and has been operating "NICT Comprehensive Test Beds" for integrated promotion of technical demonstration and social implementation of IoT since 2016. NIST also discloses data sets of multiple genres available for AI R&D at the AI data test bed.

6. Other Research and Development Programs

(1) Future ICT Fundamental Technologies

MIC and NICT conduct research and development into base technologies with the aim of realizing new ultra-high-speed wireless communication systems and sensing systems that make use of undeveloped extremely high frequency bands, such as millimeter waves and terahertz waves.

NICT has been implementing R&D to improve performance of light modulation/switching, photon detection and other devices by using nanometer-size microstructure technologies and new materials. NICT is also conducting R&D into brain information processing, high

accuracy brain activity measuring and technologies to realize integration, sharing and analysis of data related to brain information.

(2) Core Technologies for Electromagnetic Wave Sensing

With the aim of contributing to early detection of sudden atmospheric phenomena represented by guerrilla rainstorms and tornadoes and to clarification of the mechanism of their development, NICT has been conducting R&D into technologies to observe wind, moisture, cloud, precipitation, etc. with high temporal and spatial resolution.

Section 8   Promoting International Strategies for ICT

1. Prioritized Promotion Themes for International Policy

(1) Promoting Overseas ICT Deployment

MIC takes actions to support the overseas deployment of Japanese technology in the ICT field for the purposes of bolstering the international competitiveness of our ICT industry and of promoting solutions to global issues through the application of ICT.

Based on "the Basic Policy on Economic and Fiscal Management and Reform" and the government-wide policies to achieve the goal of "30 trillion yen in infrastructure-related orders to Japanese companies by 2020" set by "the Infrastructure System Export Strategy," MIC has been vigorously working for overseas deployment of ICT infrastructure systems that include communications/broadcasting/postal systems, ICT utilization models in disaster prevention/medical fields, cybersecurity and radio wave systems through total support for enterprises, which covers human resource development, maintenance and finance, in cooperation with the Fund Corporation for the Overseas Development of Japan's ICT, the Postal Services Inc. (JICT) and other relevant organizations as needed.

In December 2020, "Infrastructure Systems Overseas Deployment Strategy 2025" was formulated to succeed the "Infrastructure System Export Strategy" above. The goal of the new strategy is "34 trillion yen in infrastructure-related orders to Japanese companies by 2025." The entire government will make enhanced efforts for overseas deployment toward the goal.

(2) Developing environment for overseas ICT deployment and for free flow of information

Importance of DFFT (Data Free Flow with Trust) was reconfirmed at the G20 Digital Economy Ministerial Meeting held in July 2020 and the G20 Summit in November of the same year. In order to promote DFFT, MIC is promoting deployment of 5G-utilizing industrial infrastructure that encourages adoption of the Japanese 5G model and development of a safe and secure ICT environment with consideration of privacy and security. At the same time, taking advantage of the opportunities of G7, G20, OECD, bilateral discussions and other gatherings, the ministry is actively participating in international discussions toward standard setting for promotion of reliable and free data flow.

2. Initiatives in International Frameworks

MIC is involved in policy consultations at such multilateral frameworks as the G7/G20, APEC, APT, ASEAN, ITU, the United Nations, WTO, and OECD and takes an active lead in the promotion of the free flow of information, the creation of safe and secure cyber spaces, the development of high-quality ICT infrastructure, and contributions to the achievement of the UN Sustainable Development Goals (SDGs).

Section 9   Promoting Public Administration and Disaster Prevention through ICT

1. Promoting Digitalization of Local Governments

(1) Digital Transformation of Local Governments

a. Promoting digital transformation of local governments

Regarding the measures related to local governments included in "the Digital Government Action Plan" that was decided by the Cabinet in December 2020, MIC fleshed out priority items for local governments to tackle and formulated "the Local Governments Digital Transformation (DX) Promotion Plan" compiling support measures by MIC and other relevant government agencies.

b. Enhancement of information security measures

In December 2019, MIC started "the Study Group on Revision to Information Security Policy Guidelines for Local Governments." The result was compiled in May 2020 and released as the "Revision to Local Governments Information Security Measures." In response, MIC revised "the Guidelines for Information Security Policy of Local Governments" in December 2020.

(2) Conversion to Smart Local Governments

The "Smart Local Government Administration Project" started in FY2019. Its aim is to build standard models for processes of core operations (Basic Resident Register, tax affairs, etc.) of local governments using ICT by organizing review groups consisting of multiple governments based on population size and by comparing their

operating processes in the group.

(3) Promoting utilization of the Individual Number Card and Public Certification Service for Individuals

Since November 2020 MIC has been holding "the Study Group on Smartphones with Individual Number Card Functionality" consisting of external experts. The study group compiled "the First Summary - Toward the Realization of Electronic Certificates Installed on Smartphones" in December of the same year. In 2021, studies have been conducted on approaches of technical verification toward installation on smartphones with individual number functionality and on methods for use of biometrics authentication, and sorting of tasks has been conducted toward utilization of private sector ID linked to public certification service for individuals and other matters.

(4) Enhancing of Infrastructure to Achieve Citizen-Centered e-Government and More Efficient Administrative Procedures

a. Utilization of the Basic Resident Registration Network System

The Basic Resident Registration Network System (Juki-Net) has operated stably for over 15 years since it went into operation in August 2002. The system has assumed a pivotal role in improving convenience to resi-

dents, since October 2015, as the platform for the Individual Number System.

b. Public personal certification service for individuals by the Japan Agency for Local Authority Information Systems

The Japan Agency for Local Authority Information Systems provides a public certification service for individuals, based on the "Act on Certification Business of Japan Agency for Local Authority Information Systems Pertaining to Electronic Signatures", in order to improve convenience to residents and to streamline and optimize administration management.

Applications and other procedures that can be performed using the public certification service for individuals include national tax declarations and real estate registration applications. As of April 2021, the service works with procedures for ten ministries, agencies, and offices at the national government level and procedures for all prefectures and municipalities at the local government level.

As of March 31, 2021, 14 enterprises had received authorization as private businesses using the public personal certification service from the Minister for Internal Affairs and Communications.

2. Promoting Informatization in the Disaster Preparedness Field

(1) Deployment of Mobile Communication Equipment for Disaster Responses

MIC lends out mobile communication equipment for disaster responses (as of April 2021, 312 satellite phones, 280 MCA radios, and 900 convenience radios have been deployed to Regional Bureaus of Telecommunications and other organizations nationwide) to local governments and other agencies to ensure they have means of communication in disaster-affected zones when mobile phone and other communication networks are disrupted.

(2) Assurance of Emergency Communication Means during Disasters

The Emergency Communications Association implemented the National Emergency Communications Drill with participation of the central government, 47 prefectures, 117 municipalities and others in November 2020.

(3) Stable Operation of the Nationwide Instantaneous Alarm System (J-Alert)

MIC's Fire and Disaster Management Agency has developed the "National Instantaneous Alarm System (JAlert)". J-Alert instantaneously transmits, from the national government to residents, information on events requiring immediate action such as ballistic missile information, earthquake early warnings, and tsunami warnings. The alerts are distributed as early-warning email messages sent to mobile phones and other devices as well as via municipal disaster prevention radio systems and other communication means.

(4) Promoting Disaster Prevention with ICT

MIC is promoting the use of L-alert that simultaneously transmits disaster-related information including evacuation order issued by local governments to diverse media including a large number of broadcast stations and internet businesses.

Section 10   Developments in Postal Service Administration

1. Promoting Postal Service Administration

MIC examines policies and appropriate system implementations to ensure the stable provision of universal postal services now and into the future. Furthermore, to have post offices function as safe and secure bases for

citizens' lives, the ministry encourages the deployment of new, customer-oriented services and the improvement of post office convenience.

2. Promoting Postal Service Administration in the International Field

MIC promotes the international deployment of Japanese-style postal infrastructure systems as part of the government's "Infrastructure System Export Strategy". The initiative provides Japan's superb knowledge and technology in the area of postal operations to primarily emerging and developing countries to assist countries with modernization and advancement of their postal operations. Under this initiative, MIC not only provides cooperation on postal operations themselves but also encourages the entry of Japanese companies with relevant knowledge by proposing new businesses and services to the partner country that utilize postal networks and post offices.

3. Promoting the Correspondence Delivery Business

As of March 31, 2021, 567 operators had entered the specified correspondence delivery business. Specified correspondence delivery businesses offer only limited correspondence delivery services that do not undermine the provision of universal postal mail services.