

# Chapter 5

## ICT Policy Initiatives in the Ministry of Internal Affairs and Communications

### Section 1 Promotion of comprehensive ICT policies

#### 1. Current status and issues

##### (1) Declining birthrate, and aging/declining population

Japan continues to struggle with a declining birthrate and aging population, and the population is expected to continue to decline. There are concerns that the decline in the working-age population (15 to 64 years old) will affect the economic growth rate due to economy and market contract in the future. It is therefore an urgent matter to improve labor productivity and expand labor

force participation. ICT plays a major role in solving such problems. For example, the use of AI and robots is expected to improve the efficiency of operations and distribute labor resources more efficiently, and use of remote work and satellite offices is expected to expand options for working without being restricted by location.

##### (2) Disasters are growing more frequent and severe, while social infrastructures continues to age

In recent years, severe weather disasters have been frequently occurring in Japan due to the effects of climate change, and large-scale earthquakes, such as Nankai Trough earthquakes, trench-type earthquakes around the Japan Trench and Kuril Trench, and earthquakes directly beneath Tokyo, are also said to be imminent. In the event of such a disaster, it is necessary to collect disaster-related information and provide accurate evacuation information through ICT, and must promptly restore communications and continue to provide continuous communications services.

There are also fears that the infrastructure that had been rapidly developed during the period of high economic growth in Japan will quickly deteriorate in the future, and it is necessary to strategically maintain and renew this infrastructure. However, with the labor supply decreasing due to the declining birthrate and aging population, it will be difficult to devote manpower toward maintaining Japan's infrastructure. Therefore, it is necessary to maintain, update, and manage infrastructure more efficiently by utilizing ICT.

##### (3) Increasingly complicated international situation

The international situation surrounding Japan is becoming increasingly complex, with the Russian invasion of Ukraine, cross-border cyberattacks on critical infrastructure, and the spread of disinformation. In response, the Act on the Promotion of Ensuring National Security through Integrated Implementation of Economic Measures enacted in May 2022 describes “telecommunications,” “broadcasting,” and “postal services” as business fields that could be covered by a system to ensure the stable provision of specified social infrastructure services. The Government intends to work toward implementing such a system in the future. In cooperation with the international community, it is necessary to make efforts to build a resilient ICT infrastructure, and to strengthen cybersecurity and supply chains.

achieve carbon neutrality by eliminating greenhouse gas emissions as a whole by 2050, as the issue of climate change continues to worsen. In June 2021, the “Action Plan of the Growth Strategy” was formulated to promote two approaches for transitioning ICT industry to a green industry: (1) the promotion of energy demand efficiency and CO<sub>2</sub> conservation through digital technologies (Green by ICT) and (2) the conservation of energy and transition to green technology for digital devices and the ICT industry itself (Green of ICT).

Internet traffic in Japan<sup>1</sup> increased approximately 2.3 times as of November 2022 compared with November 2019 before the COVID-19 outbreak. Traffic is expected to continue to increase, and so will the amount of power consumed by ICT-related devices and other equipment. It is also necessary to bring green technology to ICT.

In October 2020, Japan declared that it would aim to

<sup>1</sup> Total download traffic for fixed broadband subscribers

## 2. Initiatives to promote comprehensive ICT policies

### (1) Promotion of initiatives to realize the Digital Garden City Nation Concept

In November 2021, the “Council for the Realization of the Digital Garden City Nation Concept” chaired by the Prime Minister was established, in order to materialize the concept, promote the revitalization of rural areas through digital implementation, and to realize the “Digital Garden City Nation Concept,” in which Japan would be connected with the world by promoting the implementation of digital technologies in rural areas, creating a new wave of transformation, and narrowing the gap between rural areas and cities. Based on the discussions of this council, the Cabinet approved the “Basic Policy for the Digital Garden City Nation Concept” in June 2022 and the “Comprehensive Strategy for the Digital Garden City Nation Concept” in December of the same year. This strategy covers a five-year period from fiscal 2023 to fiscal 2027 and presents the medium- to long-term basic direction of the concept.

In November 2021, the Ministry of Internal Affairs and Communications established the “Headquarters for the Promotion of the MIC Digital Garden City Nation Concept” headed by the Minister for Internal Affairs and Communications, to promote building digital infrastructures for hardware and software (a prerequisite for digital implementation), developing and securing human resources with digital skills, implementing initiatives to leave no one behind, and implementing digital services to solve social issues in rural areas.

With regard to building digital infrastructures such as optical fiber and 5G, the Ministry of Internal Affairs and Communications formulated the “Digital Garden City Nation Infrastructure Development Plan” in March 2022,<sup>2</sup> and is strongly promoting efforts in line with this plan.



**Figure (related data) Council for the Realization of the Digital Garden City Nation Concept**  
URL: [https://www.cas.go.jp/jp/seisaku/digital\\_denen/index.html](https://www.cas.go.jp/jp/seisaku/digital_denen/index.html)



**Figure (related data) Headquarters for the Promotion of the MIC Digital Garden City Nation Concept**  
URL: [https://www.soumu.go.jp/main\\_sosiki/singi/denen\\_toshi/index.html](https://www.soumu.go.jp/main_sosiki/singi/denen_toshi/index.html)

### (2) Discussions on Information and Communications Policy with a View to 2030

In September 2021, the Ministry of Internal Affairs and Communications consulted with the Information and Communications Council on Information and Communications Policy with a View to 2030, with the goal of realizing Society 5.0 and securing economic security toward 2030 in light of future trends in the information and communications field, technology, and utilization. The first report was presented in June 2022.<sup>3</sup>

The Information and Communications Council re-

sumed discussions in January 2023, taking into account the rapid progress in information and communications technology and the remarkable ongoing changes in social conditions. During the General Policy Committee meeting held under the council, discussions were held on the direction of ICT policy over the next 10 years by “backcasting” from the coming future of 2030. The final report<sup>4</sup> was presented in 2023.

<sup>2</sup> Revised April 2023

<sup>3</sup> First Report on “Information and Communications Policy with a View to 2030” (June 30, 2022) [https://www.soumu.go.jp/menu\\_news/s-news/01ryutsu06\\_02000319.html](https://www.soumu.go.jp/menu_news/s-news/01ryutsu06_02000319.html)

<sup>4</sup> Refer to [Policy Focus] Overview of the final report on “Information and Communications Policy with a View to 2030” for an overview of the final report.

## Policy Focus Overview of the final report on “Information and Communications Policy with a View to 2030”

### 1. Background and history

The role of information and communications in citizen's lives and economic activities, and securing the security associated with their use, have become more important due to the progress of digital technologies during the COVID-19 pandemic. Meanwhile, issues such as the growing presence of overseas platform operators and supply chain risks in the information and communications field have become apparent against the backdrop of recent changes in the international situation, such as tensions between the United States and China.

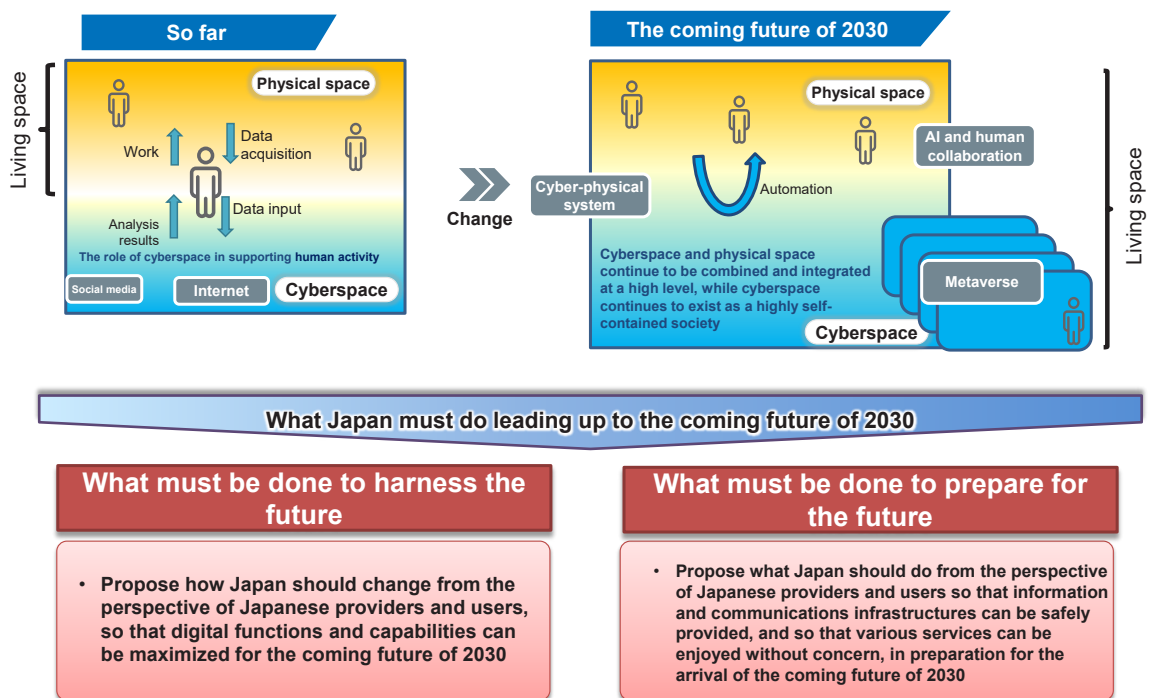
With this in mind, the Ministry of Internal Affairs and Communications consulted with the Information and Communications Council on Information and Communications Policy with a View to 2030 in September 2021, and held discussions on the direction of ICT policy to realize Society 5.0 and ensure economic security during a meeting of the General Policy Committee of the Information and Communications Policy Subcommittee, and its first report was presented in June 2022.

Japan is expected to face labor shortages and a shrinking domestic market, so the use of digital technology will become increasingly important. However, digital usage in Japan dropped to 29th place out of 63 countries

and regions ranked in the 2022 IMD Digital Competitiveness Ranking, and dropped to 63rd place in the data utilization category. The situation where Japan cannot make full use of digital technology has been continued. Meanwhile, cyberspace environments have entered a new phase due to advances in AI, robotics, and other technologies, and hardware technology (which has been a strength of Japan) is becoming more important in realizing cyber-physical systems.

In order to ensure that Japan's ICT industry can continue to grow so that Japan can increase its international competitiveness to help realize a prosperous life for its citizens and achieve a sound Internet environment, the committee resumed deliberations in January 2023 in order to consider the direction of ICT policy in light of future socioeconomic and technological changes. The committee deliberated on the direction that Japan should take in order to forecast the coming future of 2030 and demonstrate its digital functions and capabilities, and to safely provide information and communications infrastructures in preparation for 2030 so that citizens can enjoy various services with peace of mind. In June 2023, the final report on Information and Communications Policy with a View to 2030 was presented.

Figure 1 Direction Japan must take toward the coming future of 2030



## 2. Overview of the final report on “Information and Communications Policy with a View to 2030”

### (1) The coming future of 2030

In light of changes in the socioeconomic environment, such as the decrease in the working population due to the declining birthrate and aging population, and the advancement of information and communications technologies such as AI and robots, cyberspace and physical space are expected to have converged and become high-

#### a AI and human collaboration (AI agents)

Mutual cooperation between AI and humans, AI and the environment, and AI and AI will support life and eco-

#### b Advanced convergence of cyber-physical systems

[1] Improve safety and efficiency by using robots and other technologies to provide feedback from cyberspace to physical space

#### c Emergence of new life and economic activities (metaverse, etc.)

Through avatars, people can live or conduct socioeconomic activities in cyberspace, free from the various

ly integrated in 2030. Cyberspace is also expected to become a new form of “society,” and that existing living spaces will expand. Society 5.0 is expected to be realized in such a way that people will be able to concentrate on more essential activities and live rich lives that suit their lifestyles and needs, wherever they happen to be.

conomic activities in physical space, enabling a richer life

[2] Participate in remote physical space activities (life and economic activities) through cyberspace to compensate for mutual shortfalls, or participate in socioeconomic activities free from physical space constraints (increase remoteness of existence)

constraints unique to physical space.



**Figure (related data): Coming future of 2030**

Source: Final report on “Information and Communications Policy with a View to 2030”

URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00359](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00359)  
(Data collection)

### (2) Challenges facing Japan toward 2030, and future direction

#### a Response to the rapid evolution of AI

Generative AI is now developed and provided mainly in the U.S., and so there is a bias in the learning data. There are therefore problems with this technology, such as reduced prediction accuracy and regional bias. It is also important for all citizens, not just young people, to be able to use AI to a certain extent, as mastery of AI will have an effect on convenience and productivity in social

and economic activities.

Therefore, it is necessary to engage in efforts to contribute to the creation of environments that allow Japanese people to easily make use of generative AI (AI foundation models in Japanese that reflect Japanese culture and norms), and to help citizens acquire the ability to skillfully utilize digital tools such as AI.

#### b Response to the promotion of business transformation and carbon neutrality

As values change from ownership to use, and as businesses come under pressure to transform their businesses and achieve carbon neutrality, it is necessary to realize DX and GX by upgrading cyber-physical systems in a manner that assumes global expansion. In order to truly realize cyber-physical systems, “actuators” that serve as contacts from cyberspace to physical space will play a crucial role.

It is necessary to engage in efforts such as active cooperation between the public and private sectors to develop rules in Japan.

Due to the globalization of supply chains, international standardization (such as ensuring interoperability) is another important factor in realizing an ecosystem that transcends regional, business, and industry boundaries. In that case, it is also necessary to have a strategy for what is standardize for. In recent years, standardization at higher layers (including service standards and social issues such as the environment) have become important, in addition to standardization activities linked to products such as ensuring compatibility and quality.

Although Japan has taken a leading position in developing technology, there are indications that it will fall behind in product and service development and lose out in business development. Outside of Japan, there are a number of efforts now in place to spread global standards in favor of certain countries as a national strategy.

It is important for innovative startups to continue to

maintain growth speed in order to realize cyber-physical systems. For example, late-stage investments and partnerships between startups and agile operating compa-

nies boasting technology and human resources can be effective.

**c Response to environmental changes in information and communications infrastructures**

In order to strengthen and accelerate efforts toward realizing Beyond 5G (which will serve as a social infrastructure in 2030), it is necessary to strategically promote R&D aimed at social implementation and overseas expansion, focusing on technological fields where Japan has strengths.

As providers of information and communications infrastructures become more diverse and equipment becomes more complex, it is necessary to consider how future information and communications infrastructures based on the user's perspective should be built, so that

users can enjoy the advantages of end-to-end high speed and low delay, and so that information and communications infrastructures are dependable.

In order to ensure economic security, the government must actively engage in both support and regulation, as a stakeholder. It is also important for us to reduce and eliminate cybersecurity and procurement risks. In order to improve autonomy by strengthening supply chains, it is necessary to develop methods to reliably procure devices and parts such as diversifying suppliers, while taking economic rationality into consideration.

**d Response to the development of the new social space of cyberspace**

The international community must commonly recognize that the metaverse is an online public space where freedom of expression and privacy are protected, and that its operation must be conducted democratically.

It is also necessary to promote the formation of international rules in cooperation between the public and private sectors and ministries and agencies, while deter-

mining and verifying the portability of rules and avatars applied within the metaverse.

Given the abundance of technology and intellectual property related to content such as avatars, Japan will need to actively engage in rulemaking in the global metaverse market.

**e Response to ensuring sound cyberspace environments**

Concerns are growing over state intervention, the concentration of data in big tech companies, the fragmentation of the Internet due to filter bubbles and echo chambers, and the distribution of false information and misinformation due to the “attention economy.”

In order to ensure freedom of expression, it is necessary to strengthen cooperation among stakeholders and the international community and promote constant efforts throughout society, including voluntary efforts

among a wide range of stakeholders and national measures based on explanations including evidence from operators, such as platform operators ensuring appropriate responses as well as transparency and accountability, existing media engaging in collaborative fact-checking efforts, and improving the ICT literacy of citizens. False information and misinformation tend to spread easily among those with low literacy, so it is necessary to take measures to improve literacy for all generations.



**Figure (related data) Overview of the final report on “Information and Communications Policy with a View to 2030”**

Source: Final report on “Information and Communications Policy with a View to 2030”

URL: (Data collection)

## Section 2 Trends in telecommunications business policies

### 1. Summary

#### (1) Initiatives so far

Over the more than 35 years since the liberalization of telecommunications business and the enforcement of the Telecommunications Business Act (Act No. 86 of 1984) in 1985, there have been a large number of new entries into the telecommunication market. Under the principle of competition, various communication technologies such as IP, using digital technology, and mobile broadband have been advanced and introduced, rates have dropped, and services have remarkably grown more diversified and advanced. The Ministry of Internal Affairs and Communications has continued to review various policies and systems in order to ensure that reliable telecommunications services are provided while maintaining the innovation and dynamism of such services.

For example, there have been many recent environmental changes in the Japanese telecommunications market, such as the spread of mobile phones and broad-

band, and the development of competition among groups mainly consisting of mobile telecom operators. In light of these environmental changes, MIC has developed systems to continue to ensure a fair competitive environment. MIC has taken measures to resolve issues such as higher rates for mobile phones (now a daily necessity) compared to other countries, and complicated and difficult pricing plans, in order to create a fair competitive environment in which citizens can use low-cost and diverse mobile phone services.

MIC has also developed rules to respond to the increasing number of problems related to the use of telecommunications services due to information gaps between consumers and business operators, inappropriate solicitation by business operators, the increasing complexity and sophistication of cyberattacks, and more serious global risks.

#### (2) Future challenges and directions

The telecommunications business provides telecommunications services that are essential for citizen's lives and socioeconomic activities. The importance of telecommunications services has continued to increase. As the social structure of Japan moves toward a rapid decline in population and a super-aging population, the creative role that ICT plays in rural areas, such as strengthening the regional industrial base and promoting rural migration, is expected to increase in the future. The role that ICT plays in the revitalization of economic activities such as creating new businesses and improving productivity, the realization of a safe and secure society, and the solving of social issues in various fields (such as healthcare, education, and administration) is also expected to increase.

It will therefore be extremely important for each individual and the social economy of Japan to secure the interests of users of telecommunications services and to

develop digital infrastructures as a foundation to support the promotion of innovation, using digital technology, and DX throughout Japanese society.

In addition to the telecommunications market, the social structure of Japan is expected to undergo further drastic changes, ultimately rendering existing social and economic models useless. There is a growing need to attempt to use advanced information and communications technologies to solve social issues and create value.

Telecommunications services have become indispensable for citizen's lives and socioeconomic activities, and it is necessary to be able to continue to provide services even in emergency situations such as natural disasters and communications outages.

For this purpose, it is necessary to create an environment where all entities in Japan can use safe, secure and reliable information and communications services.

### 2. Creation of a fair competitive environment

#### (1) Analysis and verification of the telecommunications market

##### a Verification of the telecommunications market

Since fiscal 2016, the Ministry of Internal Affairs and Communications has been engaged in integrated market verification efforts to analyze and verify market trends and confirm whether telecom operators are operating appropriately, and holds the “Telecommunications Market Verification Conference” in order to obtain advice from an objective and professional perspective. The conference is attended by academic experts and others. In light of changes to the telecommunications market environment, the “Review Committee for Ensuring Fair

Competition” (established under the “Telecommunications Market Verification Conference”) made recommendations in October 2021 on the need to strengthen market verification efforts. Based on these recommendations and others, market verification has been carried out continuously since fiscal 2021 based on the “Basic Policy on Market Verification in the Telecommunications Business Field,” which was formulated in December of the same year and describes a basic concept of market verification and the overall verification process.

#### b Creation of a fair competitive environment in the mobile market

The Ministry of Internal Affairs and Communications is working to create a fair competitive environment in the mobile market in order to realize a variety of low-cost services through promoting active competition among businesses. In 2019, the Telecommunications Business Act was revised to separate communication fees from device fees and to prohibit excessive lock-in. Since 2020, the “Working group on Verifying Rules of Competition” (established under the “Telecommunications Market Verification Conference”) has continued to verify the effects of measures taken in response to this revision and their impact on the mobile market. The working group is currently conducting a review under Article 6 (Review Clauses) of the Supplementary Provisions of the Revised Telecommunications Business Act of 2019, and will take necessary measures based on the results of the review.

In October 2020, the Ministry of Internal Affairs and Communications announced its “Action Plan for the Creation of a Fair Competitive Environment in the Mobile Market,” which outlines specific efforts to develop a fair

competitive environment in the mobile market. Various measures have also been taken based on the discussion of the “Working group on Verifying Rules of Competition” and this action plan, such as placing a general ban on SIM locks (August 2021) and establishing a system to allow for the early termination of existing contracts (January 2022). Progress has also been made in creating a fair competitive environment in the mobile market even for mobile carriers, such as eliminating penalties, launching carrier email carry-over services, and introducing eSIMs.

The Ministry of Internal Affairs and Communications is now striving to publicize information through consumer groups to promote understanding among consumers. In December 2020, the “Mobile Phone Portal Site” was launched on the Ministry of Internal Affairs and Communications website with neutral information to help consumers choose a plan that suits them. In April 2022, the site underwent a redesign and greatly expanded its content to further promote consumer understanding.



**Figure (related data) Mobile phone portal site**

URL: [https://www.soumu.go.jp/menu\\_seisaku/ictseisaku/keitai\\_portal/](https://www.soumu.go.jp/menu_seisaku/ictseisaku/keitai_portal/)

### (2) Creation of connection rules

#### a Review of method to calculate mobile connection fees

Since February 2021, mobile carriers have been offering low-cost pricing plans for mobile communications. Competition between MNOs and MVNOs in the mobile market is expected to further reduce prices and enhance and diversify services.

Based on the “Sixth Report” released by the “Study Group on Calculating Mobile Connection Fees” (Sep-

tember 2022), the Ministry of Internal Affairs and Communications has been engaged in efforts to ensure that mobile connection fees are appropriate, such as requiring companies to report equipment operation policies in their mobile connection fee notifications to MIC and confirming that companies are not arbitrarily operating equipment.

#### b Review of systems related to wholesale telecommunications service

Both the “Report 2021 on the Verification of Rules of Competition” and the “Fifth Report” of the “Study Group on Calculating Mobile Connection Fees” indicated that the reason why voice call rates (metered rate) of MNO had not fallen over many years is that negotiations between MNOs and MVNOs were not functioning effectively.

Based on the report of the study group (February 2022), the Act Partially Amending the Telecommunications Business Act was enacted in June of the same year. The new law stipulates that a wholesaler must provide wholesale telecommunications services and must pro-

vide information that contributes to the facilitation of negotiations at the request of the purchasing provider, with regard to wholesale telecommunications services provided using designated equipment. Based on the discussions of the study group, the Ministry of Internal Affairs and Communications revised the Ordinance for Enforcement of the Telecommunications Business Act, etc. in order to define the details of the system, such as the scope of services that must be provided and what information must be presented to purchasing providers. The Act came into effect in June 2023.

#### c Review of connection systems related to voice communication

The transition of the telephone network of Nippon Telegraph and Telephone East Corporation and Nippon Telegraph and Telephone West Corporation to an IP network is expected to be completed in 2024, and so MIC consulted with the Information and Communications Council in April 2020 on how connection systems should function at each stage of the transition to an IP network,

and received a partial report in September of the same year and a final report in September 2021.

Based on the final report, the Act Partially Amending the Telecommunications Business Act was enacted in June 2022 and came into effect in June 2023, with the goal of revising the scope for calculating the occupancy rate of subscriber lines installed by each telecom opera-

tor under the Type I Designated Telecommunications Equipment System, from the prefectural level to the business area of each carrier.

The Ministry of Internal Affairs and Communications also revised the Ordinance on Type I Designated Telecommunications Equipment Connection Fees (Ministry of Posts and Telecommunications Order No. 64 of 2000) in order to establish provisions on voice connection fees for subscriber phones in the process of switching to an IP network, and Telecommunications Business Act Re-

view Standards (Ministry of Internal Affairs and Communications Directive No. 75 of 2001) with regard to the right to set fees for calls from subscriber phones to mobile phones, and formulated a ruling policy on the right to set user fees.

The Ministry of Internal Affairs and Communications is now examining how voice fees should be handled after switching to an IP network, including the adoption of a “bill and keep” method where providers do not pay voice connection fees to each other.

### 3. Development and maintenance of digital infrastructures

#### (1) Promotion of optical fiber

While the use of digital technologies, including remote work, remote education, and remote medical care, holds great promise in solving regional problems, digital infrastructures using optical fiber have been slow to develop in geographically disadvantaged regions such as sparsely populated areas and remote islands, due to the heavy financial burden relative to the population.<sup>1</sup>

With this in mind, the Ministry of Internal Affairs and Communications has implemented the “Advanced Wireless Environment Improvement Promotion Project,” which provides subsidies for a portion of the business expenses of local governments and telecom operators in disadvantaged areas who develop optical fiber, which is a prerequisite for high-speed, large-capacity wireless communications such as 5G. This project also covers expenses required for local governments to maintain and manage optical fiber and other equipment in remote

island regions. Based on the “Digital Garden City Nation Infrastructure Development Plan” (formulated in March 2022 and revised in April 2023), the goal is to increase optical fiber coverage (household coverage) from 99.7% at the end of March 2022 to 99.9% by the end of March 2028.

In order to develop a communications environment that contributes to the “GIGA School Program,” MIC is now focusing its efforts on schools that do not have sufficient communications environments. By taking into account the communications status of schools, MIC will promote the development of communications environments using 5G during fiscal 2023 for schools that plan to install optical fiber in fiscal 2024 or later, and will promote the early and smooth transition of public equipment to private equipment based on the requests of local governments.

#### (2) Local distribution of data centers, submarine cables, etc.

Demand for data centers and submarine cables has been increasing worldwide due to the rapid increase in Internet traffic during the COVID-19 pandemic and also due to expanded use of cloud and AI due to advances in digital transformation. These digital infrastructures will become even more important in the future as they support social and economic activities. Analyzing the locations of data centers in Japan reveals that, although investment in the Osaka area has increased in recent years, about 60% of data centers are concentrated in the Tokyo area. This situation is expected to continue. As for submarine cables, the landing stations that terminate international submarine cables are concentrated in and around the Boso Peninsula, while domestic undersea cables remain undeveloped in the Sea of Japan (missing links). If the Tokyo and Osaka areas are damaged during a massive earthquake, communications services could be affected on a nationwide scale. In order to strengthen Japan's digital infrastructure, it is necessary to better distribute data centers and develop undersea cables in the Sea of Japan. Because Japan is located at the transit point between North America, Europe, and the Asia-Pacific region, it is necessary to further promote the laying of international undersea cables to Japan and strengthen Japan's role as a hub for internation-

al data distribution. Furthermore, in view of recent changes in the international situation including the increasing complexity of the security environment surrounding Japan, it is necessary to enhance safety measures for international submarine cables and landing stations.

As a supplementary budget project for fiscal 2021, the Ministry of Internal Affairs and Communications established a subsidy to support private business operators to develop data centers and submarine cables, and has begun to support the development of data centers located outside the Tokyo area. The “Digital Garden City Nation Infrastructure Development Plan” (formulated in March 2022 and revised in April 2023) also includes goals for data centers and submarine cables. (1) It calls for the development of third and fourth core bases for data centers that complement and could serve as alternates for Tokyo and Osaka over the short term and, in coordination with relevant ministries and agencies (such as the Ministry of Economy, Trade and Industry), consideration for how to further decentralize data centers and the necessary support for the development of bases and other facilities. (2) It also calls for the development of domestic submarine cables within the Sea of Japan (missing links) and complete submarine cables around

<sup>1</sup> Refer to Chapter 4, Section 2, “Trends in the telecommunications field”



Japan (Digital Garden City Super Highway), and for the development of submarine cables to strengthen the role of Japan as a hub for international data distribution, in conjunction with efforts to decentralize data centers. In order to strengthen safety measures for international submarine cables and landing stations, MIC is also pro-

moting efforts to implement multi-routing in case of disconnection of international submarine cables, protect international submarine cables and landing stations, and strengthen systems for laying and maintaining international submarine cables.

### (3) Ensuring provision of broadband service

Broadband service is crucial to provide services such as remote work, remote education, and remote medical care. Having deemed these services necessary by Ministerial Ordinance, the Ministry of Internal Affairs and Communications has positioned broadband as a new type of universal telecommunications service under the Telecommunications Business Act ((ii) universal telecommunications services). In order to ensure the appropriate, fair, and reliable provision of such services, business operators are obligated to provide notification of the terms and conditions of contracts, provide services, and maintain compliance with technical standards. In order to ensure the provision of such (ii) universal telecommunications services nationwide, the system has also been revised by establishing a new grant system (Universal Service System for Broadband Services) based on contributions paid by broadband service providers nationwide (Act Partially Amending the Telecommunications Business Act [Act No. 70 of 2022]).

In order to examine the specific details of the system as specified by government and ministry orders in June 2022, MIC consulted the Information and Communications Council on the ideal universal telecommunications service system for broadband services, and received a report in February 2023. In this report, it was deemed appropriate to define the scope of these (ii) universal telecommunications services as FTTH, HFC CATV internet service, and wireless fixed broadband equivalent to these services (dedicated).<sup>2</sup> As for wireless fixed broadband (shared),<sup>3</sup> it was deemed appropriate to continue to consider how to position such services,<sup>4</sup> and a summary was provided on how business operators should respond and how the subsidy system should function. Based on the report, the Ministry of Internal Affairs and Communications has released government and ministry orders, and the new Act and these orders came into effect in June 2023.

## 4. Ensuring the safety and reliability of telecommunications infrastructures

### (1) Establishment of systems related to technical standards for telecommunications equipment

In light of the increasing number of virtualization technologies and cloud services being introduced and used in communications networks, and due to the fact that communications service provision structures are becoming more diverse and complex, the IP Network Equipment Committee (Information and Communications Technology Subcommittee, Information and Communications Council) examined technical conditions for telecommunications equipment in response to the diversification and complexity of networks associated with the advancement of virtualization technologies from April 2022 to February 2023.

A partial report by the Information and Communications Council<sup>5</sup> based on the first report prepared in September 2022 deemed it appropriate to impose technical standards equivalent to those currently imposed on the

mobile phone equipment of MNOs for MVNOs, etc. that will be designated as voice transmission mobile phone numbers. Following a report by the Information and Communications and Posts Administrative Council,<sup>6</sup> the Ministerial Ordinance to Partially Revise the Ordinance for Enforcement of the Telecommunications Business Act, etc. came into effect in February 2023 to relax conditions for designating voice transmission mobile phone numbers.

The committee also examined technical conditions for telecommunications equipment in response to the advancement of technologies such as virtualization technologies along with technical conditions for situations in which serious accidents could occur, and summarized them as its second report in February 2023. Based on the partial report of the Information and Communications Council (based on this report),<sup>7</sup> the Ordinance for

<sup>2</sup> Provided using a dedicated wireless connection (regional BWA, local 5G, etc.) for fixed communications services.

<sup>3</sup> Provided using a wireless connection (mobile phone network) shared by fixed communications services and mobile communications services.

<sup>4</sup> Several issues were indicated, such as the lack of stability in the quality of communications when a single base station is used to cover unspecified users of mobile phones and a large number of terminals are connected, and issues related to requirements for self-installed equipment set forth in Article 2, Paragraph 5 of the Act on Nippon Telegraph and Telephone Corporation, etc. in order for Nippon Telegraph and Telephone East Corporation and Nippon Telegraph and Telephone West Corporation to provide wireless fixed broadband using wireless equipment provided by others (mobile carriers).

<sup>5</sup> Partial report from the Information and Communications Council on technical conditions for telecommunications equipment in response to the diversification and complexity of networks associated with the advancement of virtualization technologies, etc. (September 16, 2022): [https://www.soumu.go.jp/menu\\_news/s-news/01kiban05\\_02000253.html](https://www.soumu.go.jp/menu_news/s-news/01kiban05_02000253.html)

<sup>6</sup> Results of request for comments on the partial revision of the Ordinance for Enforcement of the Telecommunications Business Act, etc., and report from the Information and Communications and Posts Administrative Council (January 20, 2023): [https://www.soumu.go.jp/menu\\_news/s-news/01kiban06\\_02000100.html](https://www.soumu.go.jp/menu_news/s-news/01kiban06_02000100.html)

<sup>7</sup> Partial report from the Information and Communications Council on technical conditions for telecommunications equipment in response to the diversification and complexity of networks associated with the advancement of virtualization technologies, etc. (February 24, 2023): [https://www.soumu.go.jp/menu\\_news/s-news/01kiban05\\_02000283.html](https://www.soumu.go.jp/menu_news/s-news/01kiban05_02000283.html)

Enforcement of the Telecommunications Business Act, etc. revised based on technical conditions for situations in which serious accidents could occur came into effect in June 2023. MIC will promptly proceed with the devel-

## (2) Ensuring communications services in emergencies

### a Initiatives for continuously sharing information

In recent years, natural disasters such as earthquakes, typhoons, heavy rain, heavy snow, floods, landslide disasters, and volcanic eruptions have frequently occurred in Japan, and communications services have also been affected by power outages, communication equipment failures, and cable disconnections.

In October 2018, the Ministry of Internal Affairs and Communications established the “Liaison Group for Securing Communications Services during Disasters” as a

### b Initiatives of the “Ministry of Internal Affairs Disaster Telecom Support Team (MIC-TEAM)”

In June 2020, the Ministry of Internal Affairs and Communications launched the “Ministry of Internal Affairs Disaster Telecom Support Team (MIC-TEAM)” to provide disaster response support in order to ensure means of information and communications during disasters. When a large-scale disaster has occurred or is likely to occur, MIC-TEAM is dispatched to local governments in disaster-stricken areas to assess the status of the disaster in relation to information and communications services, make contact and coordinate with relevant government organizations and business operators, provide technical advice to local governments, and provide other forms of support such as loaning out vehicle-

### c Investigation into the mutual use of networks among mobile carriers

Mobile phone service is an essential lifeline for citizen's lives and economic activities. One important challenge is to establish environments in which mobile phone users can continue to use communications services through “intercarrier roaming,” which allows consumers to use the networks of other operators on a temporary basis, even during emergencies such as natural disasters and communications outages. In response, the Ministry of Internal Affairs and Communications began

## (3) Analysis and verification of telecommunications accidents

In order to prevent future telecommunications accidents from occurring, it is necessary to implement appropriate measures during and after accidents, in addition to measures taken in preparation for accidents. The Ministry of Internal Affairs and Communications began holding the “Telecommunications Accident Verification Conference” since 2015 to analyze and verify reports on serious accidents (mainly as defined in the Telecommunications Business Act) and quarterly reported accidents (as defined in Telecommunications Business Reporting Regulations), in order to effectively utilize various efforts to prevent recurrence by verifying accident reports. Members of the conference compiled the results of verifying telecommunications accidents that occurred in fiscal 2021, and published the “Verification Report on Telecommunications Accidents in Fiscal

opment of systems based on technical conditions for telecommunications equipment in response to the advancement of technologies such as virtualization technologies.

means for MIC and major telecom operators such as designated public agencies to reflect back on how successive disasters have been handled in the past, and to review systems and take more appropriate actions, so that communications services can be ensured during disasters. The group shares information and exchanges opinions on issues such as readiness coordination and cooperation, and rapid assessment and restoration of damage.

mounted power supplies. In fiscal 2022, the team was dispatched to local governments in disaster-stricken areas during Typhoon No. 14 in September and in heavy snow areas since December 22.

In order to respond to issues related to collaboration and cooperation in providing power or fuel and cleaning up fallen trees following Typhoon Faxai in 2019, coordinated training was conducted in fiscal 2022 with Tagajo City, Miyagi Prefecture, Chiba Prefecture, Hamamatsu City, Shizuoka Prefecture, and Ehime Prefecture on how related organizations such as telecom operators and power/fuel-related utilities should provide an initial response.

holding meetings of the “Study Group on Intercarrier Roaming in Emergency Situations” in September 2022. The study group prepared and published its first report on a basic policy for introducing intercarrier roaming that allows for full roaming as soon as possible for emergency calls, regular phone calls, data, and call-backs from agencies receiving emergency calls in December of the same year.

2021” in November 2022.

Telecommunications services are becoming an increasingly essential foundation for citizen's lives and socioeconomic activities, and the impact of telecom operator communications outages on society as a whole is growing. Under these circumstances, communications outages caused by telecom operator are frequent. Many issues were noted with how telecom operators provide information when communications outages occur, such as taking too long to notify consumers or not even providing notification at all. In order to appropriately protect the interests of consumers, it is necessary to must seriously reconsider how consumers are provided with information in the telecommunications field. Toward that end, the Telecommunications Accident Verification Conference Notification and Contact Organization Working

Group was established in October 2022, and a summary of the group's report was released in January 2023.<sup>8</sup> Based on this information, “Notification Guidelines for Telecommunications Service Outages” were established in March 2023 to provide information on how to notify users in the event of telecommunications service accidents and outages occurring.

There are likely many common issues behind frequently occurring communications outages, such as insufficient risk assessment and risk identification, human errors and insufficient employee training, and insufficient governance of maintenance and operation sys-

tems. In response, the Telecommunications Accident Verification Conference began examining structural issues with organizations and attitudes behind individual accidents, reviewing technical standards and other management rules based on verifying these structural issues, and considering how to enhance governance of maintenance and operation attitudes related to safety measures in December 2022. The conference then summarized its findings in “Report on Verifying Structural Issues Involved in Telecommunications Accidents” in March 2023. MIC will continue to consider further revisions to such systems.

## 5. Development of a safe and secure usage environments for telecommunications services

### (1) Ensuring governance in the telecommunications business field

The telecommunications business is essential for promoting innovation in various fields including the information and communications field. In order to provide innovative services and promote DX throughout society by introducing digital technologies, it is necessary to ensure that reliable telecommunications services that can be trusted by consumers are provided.

In order to ensure safe, secure, and reliable communications services and networks in the digital age, the Ministry of Internal Affairs and Communications began holding the “Telecommunications Business Governance Review Committee” in May 2021, in order to examine how telecom operators should ensure governance with regard to cybersecurity measures and data handling, and to consider future measures. Based on the recommendations of the review committee, the Act Partially Amending the Telecommunications Business Act was established in June 2022, which establishes new rules for information handling and requires operators to provide notification, in order to promote the proper handling of user information while ensuring consistency

with rules in other countries. Aimed mainly at telecom operators that acquire and manage large amounts of information, the law also establishes rules to ensure that telecommunications services can be provided smoothly through the use of measures against cyberattack and accident reporting systems implemented through cooperation between operators. The Ministry of Internal Affairs and Communications then held meetings of the “Working Group on the Proper Handling of Specified User Information” from June to September of the same year to review details of regulations concerning the handling of specified user information, and revised the Ordinance for Enforcement of the Telecommunications Business Act to specify (1) information handling rules, (2) information handling policies, (3) items to evaluate the status of handling specified user information, (4) requirements for specified user information general administrators, and (5) the content of reports required when specified user information is leaked. This act and the Ordinance for Enforcement of the Telecommunications Business Act came into effect in June 2023.

### (2) Establishment of consumer protection rules in the telecommunications business field

#### a Overview

As telecommunications services become more advanced and diverse, they bring added convenience and choice to many consumers. However, problems have also arisen due to issues such as information gaps between consumers and providers and inappropriate solicitation by providers. In order to prevent such problems from occurring and to allow consumers to enjoy

the benefits of increasingly advanced and diverse telecommunications services, the Ministry of Internal Affairs and Communications has developed and is enforcing appropriate consumer protection rules for telecommunications services, and continues to review them as necessary.

#### b Ensuring the effectiveness of consumer protection rules

##### (a) Complaints and inquiries, cooperation with related parties, and administrative guidance

The Ministry of Internal Affairs and Communications has established the “MIC Telecommunications Consumer Consultation Center” to receive information provided by consumers.<sup>9</sup> The Telecommunications Consumer

Support Liaison Group<sup>10</sup> also meets twice each year in regions all over Japan to share information on efforts and exchange opinions among related parties. Based on the information obtained through these efforts, MIC

<sup>8</sup> Summary of Telecommunications Accident Verification Conference Notification and Contact Organization Working Group [https://www.soumu.go.jp/main\\_content/000858975.pdf](https://www.soumu.go.jp/main_content/000858975.pdf)

<sup>9</sup> 18,331 complaints have been received by phone and online (fiscal 2021).

<sup>10</sup> A liaison group organized by the Ministry of Internal Affairs and Communications to exchange opinions on how to support consumers in telecommunications services, with members of consumer centers and telecom operator organizations in various regions.

continues to work to ensure the effectiveness of consumer protection rules for telecommunications services by providing administrative guidance and by cooperating with the Consumer Affairs Agency as necessary.

(b) Monitoring

The Ministry of Internal Affairs and Communications has established its “Basic Policy on Supervising Rules for Protecting Consumers in the Telecommunications Business” to monitor the operation status of consumer protection rules, and holds the “Regular Meeting for Monitoring Consumer Protection Rules”<sup>11</sup> twice a year to share and evaluate information among experts and related business organizations.

Participants in this meeting share and evaluate the results of analyzing overall trends as well as trends in each service type (such as MNO, MVNO, and FTTH), with regard to complaints and inquiries in the telecommunications business field. The results of analyzing individual topics,<sup>12</sup> the results of field investigations (anonymous investigations), the results of ad hoc investigations

c Review of consumer protection rules

The Ministry of Internal Affairs and Communications has continued to review and expand consumer protection rules in response to changes in the telecommunications market and problems encountered by consumers. Since June 2020, the “Consumer Protection Rule Review Committee” has met to thoroughly review relevant systems, and in September 2021 summarized its findings in “Report 2021 of the Consumer Protection Rule Review Committee.” Based on this report, the Ministry of Internal Affairs and Communications has taken the following steps to expand consumer protection rules.

[1] Revise Ordinance for Enforcement of the Telecommunications Business Act

In February 2022, the Ordinance for Enforcement of the Telecommunications Business Act was revised to institutionalize (1) an obligation to explain terms and conditions using explanatory documents during telemarketing calls, (2) an obligation to take measures to allow consumers to cancel services without delay, and (3) limits to the amount of money that can be requested for cancellation (effective July 1 of the same year).

[2] Revise guidelines

The “Guidelines on Telecommunications Business Act Consumer Protection Rules” clarified the fact that consignment contracts between mobile carriers and their distributors may be subject to business improvement orders if such contracts could encourage the violation of consumer protection rules (including specific cases). The guidelines also expanded the description of conduct that would be desirable from the perspec-

MIC also continues to promote voluntary efforts by relevant organizations to comply with consumer protection rules.

of individual cases, the results of analyzing complaints and inquiries received by business organizations,<sup>13</sup> and follow-ups on efforts by operators to make improvements are also shared and evaluated.

Based on assessments during this meeting, the Ministry of Internal Affairs and Communications has instructed telecom operators who had undergone field investigations on areas for improvement, and has requested business organizations and others to take industry-wide measures and share information with their members. Analysis results and assessments from this meeting are also being used to consider revising consumer protection rules and to promote voluntary efforts by business operators.

tive of consumer protection.

[3] Investigate how to improve complaint handling system

In October 2021, MIC established the “Complaint Handling System Review Task Force” to examine scope, functions, systems, and collaboration with other organizations, with regard to establishing systems that could effectively resolve issues with consumers that could not be resolved with individual business operators. MIC prepared a report in June 2022, and reached a decision to launch a new complaint handling system within the next year as a trial effort conducted by certain business organizations.<sup>14</sup> MIC also reached a decision to continue to examine the implementation status for any issues through such means as meetings of the “Consumer Protection Rule Review Committee.” MIC are currently considering launching the new complaint handling system by July this year.

Based on the “Recommendations on Initiatives Based on 'Report 2021 of Consumer Protection Rule Review Committee'” prepared in July 2022 by the “Consumer Protection Rule Review Committee,” MIC released “Requests for Implementation of Guidance to Ensure the Appropriateness of Distributor Business and Efforts to Strengthen the System for Handling Complaints” in August of the same year to related business operators and others. Based on the above recommendations, MIC revised the “Guidelines on Telecommunications Business Act Consumer Protection Rules” in September of the same year, and continue to engage in monitoring and other efforts to enhance consumer protection.

<sup>11</sup> Regular Meeting for Monitoring Consumer Protection Rules: [https://www.soumu.go.jp/main\\_sosiki/kenkyu/shouhisha\\_hogorule/index.html](https://www.soumu.go.jp/main_sosiki/kenkyu/shouhisha_hogorule/index.html)

<sup>12</sup> The 14th meeting, held in February 2023, dealt with (1) complaints about communication speeds, (2) complaints from the elderly, (3) complaints about FTTH telemarketing, and (4) complaints about in-person sales visits.

<sup>13</sup> Telecommunications Carriers Association and National Association of Mobile-phone Distributors

<sup>14</sup> Telecommunications Carriers Association and Japan Cable and Telecommunications Association

### (3) Communication privacy and the protection of user information

#### a Overview

Various people, goods, and organizations are now connected to the Internet through smartphones, IoT, and other devices, and this has resulted in the creation and integration of large amounts of digital data. All signs point to the realization of Society 5.0, where the results of data analysis using AI are fed back into the real world in order to solve various social issues.

Platform providers that provide various services for free are increasing their presence, and they increasingly tend to obtain and accumulate user information. In addition, as the importance of platform providers in people's

daily lives increases due to the provision of essential services by platform providers via smart phones, more sensitive information is being acquired and accumulated.

In order to ensure the proper balance between consumer convenience and secrecy of communications / the privacy protection, and to ensure that platforms function at full performance, platform providers must make their services more attractive and yet ensure that user information is handled appropriately, so that consumers can use their services with confidence.

#### b Establishment of rules and regulations on the external transmission of user information

The “Working Group on the Handling of User Information in Platform Service” was established by the “Platform Service Study Group” established by the Ministry of Internal Affairs and Communications. Its “Interim Summary” (September 2021), prepared based on the results of discussions by this group, deemed it appropriate to discuss the content and scope of regulations under the Telecommunications Business Act with reference to discussions of the EU ePrivacy Regulation (draft), and to proceed with examining the creation of a specific system with regard to the handling of user information, including cookies and location information. Based on this report, the Act Partially Amending the Telecommunications Business Act was passed in June 2022, which provides various stipulations including requiring telecom

operators to notify consumers and provide them with the opportunity to confirm telecommunications in which a command is given to send information to an external party when providing telecommunications services (“external transmission regulation” below). The Ministry of Internal Affairs and Communications then held meetings of the same working group from June to September of the same year to review the details of the external transmission regulation and revised the Ordinance for Enforcement of the Telecommunications Business Act. The working group also defined who is subject to the regulation, what information must be provided in notifications, and how notifications must be provided. This act and the Ordinance for Enforcement of the Telecommunications Business Act came into effect in June 2023.

### (4) Response to illegal and harmful information

#### a Overview

The distribution of illegal and harmful information on the Internet continues to be a serious problem. The Ministry of Internal Affairs and Communications, in cooperation with relevant parties, has continued to imple-

ment measures against various types of illegal and harmful information, such as slander, pirated content, and disinformation.

#### b Response to Internet slander

In light of the growing problem of slander on the Internet (and particularly on platform services such as social media), the Ministry of Internal Affairs and Communications, in cooperation with relevant organizations, is currently implementing the following initiatives based on the “Policy Package on Responding to Internet Slander” prepared and released in September 2020.

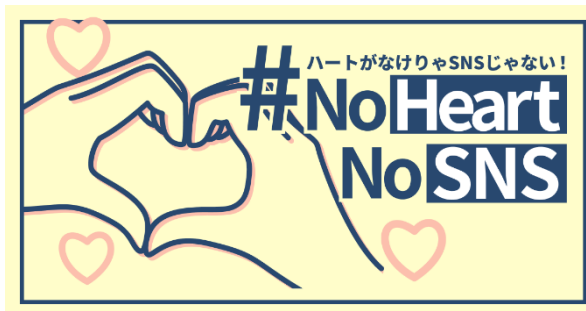
- [1] Conduct awareness-raising activities to improve the information ethics and ICT literacy of individuals
- [2] Provide Support for voluntary efforts by platform operators and improve transparency and accountability (implement continuous monitoring of platform operators)
- [3] Conduct initiatives to disclose sender information (ensure the smooth operation of the revised Provider Liability Limitation Act<sup>15</sup>)
- [4] Enhance consultation services (enhance the organization of the Illegal and Harmful Information

Consultation Center, strengthen cooperation among multiple consultation agencies, and spread awareness of the guidance plans of multiple consultation services)

In particular, as part of the efforts described in [1], the Ministry of Internal Affairs and Communications has established a special website under the slogan “#No-HeartNoSNS (no social media without heart!)” in collaboration with the Ministry of Justice, the Social Media Association of Japan, and the Safer Internet Association. MIC has also created a special website tied with the popular “Eagle Talon” characters to provide consultation services and other helpful information to those who are concerned with communication on social media, and have been conducting awareness-raising activities through various media including government PR (**Figure 5-2-5-1**).

<sup>15</sup> Act on the Limitation of Liability for Damages of Specified Telecommunications Service Providers and the Right to Demand Disclosure of Identification Information of the Senders (Act No. 27 of 2021)

Figure 5-2-5-1 “#NoHeartNoSNS (no social media without heart!)” related content



\*Left: “#NoHeartNoSNS (no social media without heart!)” logo

\*Right: “Eagle Talon #NoHeartNoSNS Operation” main visual



Based on this policy package, the “Platform Service Study Group” held interviews with platform operators and published its “Second Summary” in August 2022, which summarizes future directions for dealing with illegal and harmful information. In order to ensure transparency and accountability regarding measures such as the deletion of posts by platform operators, the report argues that it is necessary to promptly formulate a code of conduct regarding measures to ensure transparency and accountability, and that the government must undertake certain actions, such as requiring compliance and introducing a legal framework. The distribution of

slander and other illegal and harmful information continues to be a serious issue. The “Working Group on Measures against Slander and Other Illegal and Harmful Information” began meeting in December 2022 as a panel of experts to focus on this specific issue, with the goal of effectively deterring such information. The group has been discussing how to ensure transparency regarding the deletion of posts by platform operators, and what role platform operators should play in order to effectively deter the distribution of illegal and harmful information.

#### c Countermeasures to Internet piracy

In December 2020, the Ministry of Internal Affairs and Communications prepared “MIC Polices Related to Internet Piracy.” Based on these policies, MIC continue to promote awareness-raising activities to improve the information ethics and ICT literacy of individuals, access deterrence functions using security measure software, legal amendments concerning the sender information disclosure system, and international cooperation through discussions at international forums such as ICANN.

MIC has also been holding meetings of the “Review

Committee on Suppressing Access to Internet Piracy Sites” since November 2021, in which interviews are held with related businesses and other organizations. In September 2022, the committee confirmed the policies of the Ministry of Internal Affairs and Communications along with the progress of efforts by related businesses and other organizations. The committee also published its “Current Summary,” which examines measures focusing on the entire ecosystem supporting pirate sites in order to implement more effective measures.

#### d Measures against disinformation

Disinformation has become a major issue in recent years. In response, the Ministry of Internal Affairs and Communications continues to discuss disinformation on the Internet during meetings of the “Platform Service Study Group.” Through this study group, MIC has been monitoring the efforts of platform operators as well as their transparency. Based on the results of monitoring and the results of a survey conducted on overseas trends, MIC published a second summary in August 2022 that suggests future measures to ensure appropriate responses and transparency by platform operators, as well as efforts to promote improving ICT literacy.

In March 2023, the study group published “Initiatives Concerning Measures against Disinformation Ver. 1.0,” which summarizes voluntary responses by stakeholders. The Ministerial Declaration of the G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma held on April 29 and 30 of the same year stated that a collection of practices on combating disinformation, called Exist-

ing Practices against Disinformation (EPaD), would be prepared by concerned parties, including private companies and civic groups.

In addition, in order to promote the improvement of users' literacy, in June 2022, MIC developed and published an educational material on false and misleading information, “How to Face Up to the Internet - To Avoid Being Deceived by False and Misleading Information.” In addition, in November of the same year, MIC established the “Study Group on Literacy Improvement for ICT Use” to examine the ideal form of literacy required in the future digital society and measures to promote literacy.

## (5) Development of environments for young people to use the Internet

### a Overview

The Internet is becoming indispensable in the daily lives of citizens. In order for young people to use the Internet in a safe and secure manner, the Ministry of Internal Affairs and Communications is promoting the use of filtering in mobile phone devices and promoting awareness-raising activities. In addition, the “Working Group

### b Promotion of the use of filtering

In response to the widespread use of the Internet through smartphones, apps, and public wireless LANs, and due to the drastic decline in the usage of filters, the Act Partially Amending the Act on Establishment of Enhanced Environment for Youth's Safe and Secure Internet Use (Act No. 75 of 2017) was enacted in February

### c Promotion of awareness-raising activities

#### (a) Compilation and publication of Internet trouble case studies

Young people must have sufficient media information literacy in order for them to be able to use the Internet safely and securely. However, this is also true of their parents/guardians and teachers. The Ministry of Internal Affairs and Communications began publishing “Internet Trouble Case Studies” in fiscal 2009. Updated and released annually, this document summarizes methods

#### (b) Creation and publication of awareness-raising videos

In order to effectively reach young people and their parents/guardians, the Ministry of Internal Affairs and Communications has created videos using popular characters for use in conducting awareness-raising activities, in cooperation with related business operators. For example, educational videos on filtering using the popular

on Improving Juvenile ICT Literacy”<sup>16</sup> was held to discuss measures to improve juvenile ICT literacy and filtering services as a means to protect young people, based on the roles of mobile carriers, OS operators, parents/guardians, and other relevant parties.<sup>17</sup>

2018. This act obligates mobile carriers and their distributors to set (enable) filters when selling mobile phone devices. In response, the Ministry of Internal Affairs and Communications is now promoting measures so that mobile carriers and their distributors will enable filters.

for avoiding trouble on the Internet as an aid for parents/guardians and teachers.

The 2023 edition includes trouble case studies on copyright and Internet slander, and also includes information on smartphone filtering, time management, and age-appropriate Internet usage environments.

cartoon “My Hero Academia” are now being posted on the websites of relevant ministries and agencies, showing up in mobile phone shops and mass merchandisers nationwide, and being used in educational sites for young people (**Figure 5-2-5-2**).

<sup>16</sup> Reorganized from the “Task Force on Creating a Safe and Secure Internet Environment for Young People” in December 2022.

<sup>17</sup> Refer to Chapter 5, Section 6, “Promotion of ICT utilization” for information on measures to improve juvenile ICT literacy

Figure 5-2-5-2 Filtering and anti-piracy videos for young people



## (c) Implementation of on-site lectures at schools

Since fiscal 2006, The Ministry of Internal Affairs and Communications, in cooperation with the Ministry of Education, Culture, Sports, Science and Technology, the Multimedia Promotion Center, and telecom operators, has been running “e-Net Caravan,” a series of free on-site lectures for students, parents/guardians, and teach-

ers at schools, in order to raise awareness about the safe use of the Internet by young people.

Remote classes have been offered in addition to the traditional group format since the fall of 2020, in light of the spread of COVID-19.

## (d) Establishment of a period for implementation of concentrated efforts

Since 2014, the Ministry of Internal Affairs and Communications has been conducting the “Spring Safety Net and Back-to-School Campaign” in cooperation with relevant ministries and agencies, business operators, and organizations, with efforts focused on graduation and new enrollment periods when many young people get their first smartphones. The campaign focuses on ef-

forts such as awareness-raising activities for young people, parents/guardians, and school personnel to ensure safe and secure use of smartphones and social media.

In 2023, efforts focused on promoting parental control and conducting awareness-raising activities to help young people use the Internet more appropriately.

## d Efforts assuming the use of the Internet

Society as a whole is going digital technology at an increasingly rapid rate. This is the result of younger children using the Internet, the COVID-19 pandemic, and the installation of devices in schools under the GIGA School Program. In light of these environmental changes, in July 2021, the “Task Force on Creating a Safe and Secure Internet Environment for Young People” prepared “New Issues and Measures for the Development of Safe and Secure Internet Usage Environments for

Young People”<sup>18</sup> as a policy for future efforts.

Based on this, the Ministry of Internal Affairs and Communications, in cooperation with the public and private sectors, has been promoting initiatives that assume that young people will use the Internet, such as efforts to prevent problems caused by the dissemination of information by young people, in addition to previous initiatives focusing on preventing young people from accessing illegal and harmful information.

<sup>18</sup> Task Force on Creating a Safe and Secure Internet Environment for Young People, “New Issues and Measures for the Development of Safe and Secure Internet Usage Environments for Young People”: [https://www.soumu.go.jp/menu\\_news/s-news/01kiban08\\_03000356.html](https://www.soumu.go.jp/menu_news/s-news/01kiban08_03000356.html)



## 6. Mediation and arbitration by the Telecommunications Dispute Settlement Commission

### (1) Functions of the Telecommunications Dispute Settlement Commission

The Telecommunications Dispute Settlement Commission is a specialized organization established to promptly and fairly handle increasingly diverse disputes in the telecommunications field, where technological innovation and the competitive environment are rapidly advancing. 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: (1) mediation and arbitration, (2) deliberation and reporting on inquiries from the Minister for Internal Affairs and Communications, and (3) recommendations to the Minister for

Internal Affairs and Communications.

The commission secretariat has established a consultation service for communications and broadcasting business operators and others, which can be accessed by dedicated phone or email. The secretariat responds to inquiries and regarding disputes between telecom operators, and has established a website dedicated to the committee. In order help resolve disputes smoothly, the committee has published the “Telecommunications Dispute Settlement Manual” and various pamphlets that provide a collection of dispute cases and explanations of procedures [1], [2], and [3] above.



**Figure (related data): Overview of the functions of the Telecommunications Dispute Settlement Commission**  
URL:[https://www.soumu.go.jp/main\\_sosiki/hunso/outline/about.html](https://www.soumu.go.jp/main_sosiki/hunso/outline/about.html)

#### a Mediation and arbitration

Mediation is a procedure whereby, in the event of a dispute between telecom operators or broadcasters, the commission appoints a “mediator” from among its members and special members, and the mediator encourages the parties to come to terms with each other in order to achieve a prompt and fair resolution of the dispute. If necessary, the mediator also presents a mediation proposal. The procedure is not compulsory and requires the approval of both parties to proceed. However, if agreement is reached between both parties following

the mediation procedure, a settlement will have been reached under the Civil Code.

Arbitration is generally conducted after the commission designates three members from among the members and special members as “arbitrators” and then an agreement is reached following the decision of the arbitrators (arbitral tribunal). In this case, the arbitral decision would have the same effect as a final and binding judgment between the parties, as applied *mutatis mutandis* by the Arbitration Act.

#### b Deliberation and reporting on inquiries from the Minister for Internal Affairs and Communications

Based on the provisions of the Telecommunications Business Act or Broadcast Act, a party may file a petition for a negotiation order or an application for a ruling with the Minister for Internal Affairs and Communications in the event that negotiations between telecom operators or broadcasters fails.

The Minister for Internal Affairs and Communications is required to consult with the commission when issuing these negotiation orders and rulings. The commission is consulted by the Minister for Internal Affairs and Communications, and deliberates and reports on these matters.

#### c Recommendations to the Minister for Internal Affairs and Communications

The commission may make recommendations to the Minister for Internal Affairs and Communications regarding improvements in rules of competition that have been identified through mediation, arbitration, and de-

liberation/reporting on inquiries. The Minister for Internal Affairs and Communications publicizes the content of recommendations received from the commission.

### (2) Commission activities

In fiscal 2022, three mediation cases over disputes concerning the provision of wholesale telecommunications services were handled. There were also 11 inquiries handled using the consultation service.

From when the commission was established in Novem-

ber 2001 to the end of March 2023, 72 mediation cases and three arbitration cases were handled, while 11 inquiries to the Minister for Internal Affairs and Communications and three recommendations to the Minister for Internal Affairs and Communications were submitted.



**Figure (related data): Mediation handling**  
URL:[https://www.soumu.go.jp/main\\_sosiki/hunso/case/number.html](https://www.soumu.go.jp/main_sosiki/hunso/case/number.html)

## Section 3 Radio policy trends

### 1. Summary

#### (1) Initiatives so far

Radio waves are a finite and scarce resource widely used to provide services essential to the lives of citizens, such as mobile phones and police and fire services. For this reason, it is necessary to ensure fair and efficient use of radio waves. Specifically, because use of the same frequency in the same area causes interference, radio waves should not be used randomly and require a system to ensure proper use. In addition, because how radio waves propagate and the transmittable quantity of information vary depending on the spectrum, it is necessary to use them for the purposes appropriate for each spectrum. Furthermore, due to their nature to propagate across borders, use of radio waves requires international rules and coordination including treaties. The old Radiotelegraphy Act that stated “radiotelegraphy and

wireless telephones shall be administered by the Government” was replaced by the Radio Act, the purpose of which is “to promote the public welfare by ensuring the fair and efficient utilization of radio waves”

(Article 1) in 1950. Since its enactment, Japan has promoted the private sector use of radio waves that are common property of the public. Today, radio waves have become indispensable for people’s daily lives. MIC has allocated frequencies under international cooperation and licensed radio stations, and has been making efforts that include: radio wave supervision for good radio use in an environment that is free of interference/jamming; R&D to expand radio resources; and technical examination work for effective radio use.

#### (2) Future challenges and directions

Radio waves are an essential infrastructure in the era of digital transformation, in which Japan aims to solve issues and enjoy further economic growth by incorporating advanced technologies (such as IoT, big data, AI, and digital technologies necessary for a “new normal”) into all industries and sectors of life.

Industries that use radio waves are expected to continue to develop in this era of digital transformation, and demand for radio use will expand exponentially. However, because radio waves are scarce resources shared by all, it is necessary to promote more equitable and efficient use of radio waves in the future.

In addition, the traffic of land mobile stations such as mobile phones continues to increase. In order to com-

fortably maintain the radio wave usage environment for mobile phones and the like, in addition to the more effective use of the frequency currently used, securing the circumferential wave number such as the sharing of the frequency used for other applications and the development of unused frequencies such as terahertz waves has become a major issue. It is also important to maintain a favorable radio wave usage environment while responding to changes in the circumstances surrounding radio wave usage. Therefore, it is necessary to promote radio surveillance and radio equipment purchase tests in response to new radio wave usage and changes in the distribution of radio equipment.

### 2. Promotion of effective use of radio waves in the era of digital transformation

#### (1) Investigation into promoting the effective use of radio waves in the era of digital transformation

Since November 2020, the Ministry of Internal Affairs and Communications has been holding meetings of the “Radio Policy Roundtable in the Age of Digital Transformation: (“roundtable” in this Section)” to discuss the future of radio wave use, issues related to radio wave policy in the era of digital transformation, new target setting for effective radio wave use, and measures to realize them. A report was then prepared in August 2021. The report sets bandwidth targets for four radio systems that will require more bandwidth in the future (mobile phone network systems such as 5G and Beyond 5G, satellite communications and HAPS systems, IoT and wireless LAN systems, and next-generation mobility systems), beginning at the end of fiscal 2020. The goal is to add

approximately 16 GHz by the end of fiscal 2025 and then approximately another 102 GHz by the 2030s. The report also recommends several policies for making effective use of radio waves in the era of digital transformation: (1) introduce and popularize wireless systems required for the era of digital transformation, (2) verify and allocate the effective use of frequencies, (3) make effective use of public frequencies, (4) monitor and supervise radio waves in the era of digital transformation, and (5) review the radio wave usage fee system. In 2022, two follow-up roundtable were held to report on the progress of each initiative based on the recommendations made in the report.

#### (2) Measures to promote the effective use of radio waves

##### a Partial revision of the Radio Act

Based on the recommendations in the report released by the roundtable, the Act to Partially Amend

the Radio Act and the Broadcasting Act was passed in June 2022 in order to promote the fair and efficient

use of radio waves. The act includes strengthening the functions of the Radio Regulatory Council, establishing a system to reallocate frequencies for mobile phones and other devices, and reviewing the radio wave usage fee system, and was enacted in October of the same year (with some provisions excluded). The major amendments to the Radio Act are as follows.

- Strengthening the functions of the Radio Regulatory Council

Until now, the Minister for Internal Affairs and Communications has evaluated the effective use of radio waves (“effective use evaluations”) based on the results of the radio wave usage surveys. Now, the Radio Regulatory Council, which consists of members with extensive experience and knowledge, will conduct these evaluations in order to ensure that evaluations are conducted more appropriately in response to advanced technology.

- Establishing a system to reallocate frequencies for mobile phones and other devices

Frequencies used by base stations for telecommu-

#### **b Investigation into method for transitioning smoothly for reallocation**

Based on the recommendations in the report released by the roundtable, the “Task Force on Smooth Transitioning of Mobile Phone Frequencies for Reallocation” began meeting in February 2022 with the aim of further examining issues involved in reallocating frequencies, and prepared a report in December of the same year. There have already been reallocation requests for the so-called platinum band, and the report takes this into consideration in proposing a concept for the transition period as well as how much the transition should cost

#### **c Initiatives to make effective use of public frequencies**

Considering the fact that the recommendations of the report released by the roundtable confirmed the direction of efforts to take toward making effective use of frequencies (either to discard, transition, share frequencies, or using digital technologies) with regard to radio stations used for the public good and operated by the state (relevant ministries and agencies) and that progress would need to be monitoring on a yearly basis, the Public Frequencies Working Group followed up with

### **(3) Investigation into 5G business design and new allocation methods**

In order to investigate Japan's new allocation method for mobile phone frequencies, the “Review Committee for New Mobile Phone Frequency Allocation Method” began meeting in October 2021, and released the “Summary of the Review Committee for New Mobile Phone Frequency Allocation Method” in November 2022. In this summary, it was deemed appropriate to continue to consider allowing “conditional auctions” for high-frequency bands such as millimeter wave, in order to lead to innovation and the creation of new services.

Based on this summary, the “5G Business Design Working Group” working under the roundtable has been meeting since January 2023 to investigate measures to expand 5G business utilizing high-frequency

communications business (for devices such as mobile phones) can now be reallocated when the results of an effective use evaluation conducted by the Radio Regulatory Council do not meet certain criteria, or when the Minister for Internal Affairs and Communications deems it necessary to conduct a reallocation examination based on a request for competition. A decision was also made to assign responsibility to authorized developers when installing special base stations in locations other than locations noted in authorized plans, and for information related to ensuring the fair use of radio waves to be added to development guidelines.

- Reviewing the radio wave usage fee system

Radio wave usage fees will be revised for the next three years (fiscal 2022 to fiscal 2024) by taking into account the total cost of radio wave work benefiting the public good along with the expected state of radio stations. It will also be possible to provide subsidies for research and development leading up to implementing Beyond 5G with regard to how radio wave usage fees are utilized.

and who should pay for it, in the event that a competitive application is filed and development guidelines are determined. In order to improve systems related to matters indicated in this report, the Ordinance for Enforcement of the Radio Act was partially revised in March 2023 with regard to matters to be taken into consideration in determining whether guidelines must be established and measures to be taken when the standard transition period is exceeded.

relevant ministries and agencies (including conducting interviews) from March to June 2022 and confirmed that efforts by relevant ministries and agencies had overall made appropriate progress.

Following the revision of the Radio Act in June of the same year, the Radio Regulatory Council reached a decision to continue to conduct surveys to confirm the progress of systems of relevant ministries and agencies, and to conduct effective use evaluations.

bands such as millimeter wave (which will play a central role in future allocation to 5G), as well as the design of a “conditional auction” system as a new allocation method contributing to this goal. In February of the same year, the working group organized its “Allocation Method Investigation Task Force” with the aim of investigating selection conditions (comprehensive evaluation method and conditional auctions) for the 5G frequency allocation method as well as specific system design for conditional auctions. It is now engaged in discussions to release a summary in the summer of the same year.

### 3. Spread and development of 5G and B5G

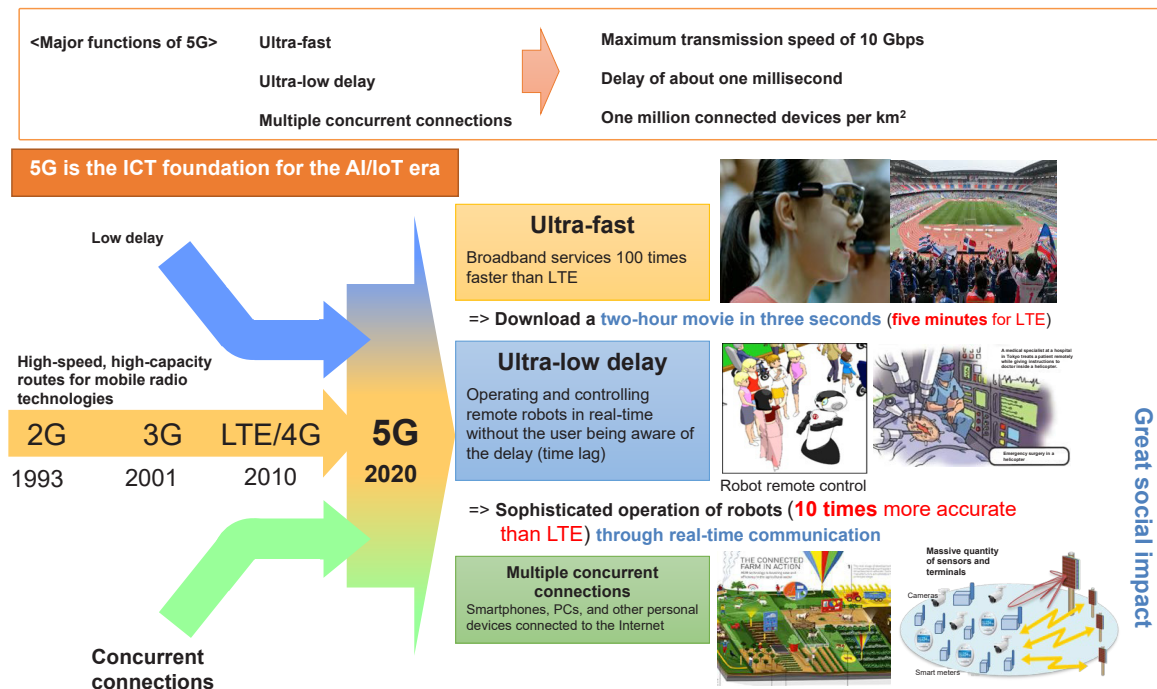
#### (1) Spread and development of 5G based on the Digital Garden City Nation Infrastructure Development Plan

##### a Formulation of the “Master Plan for Regional Development of ICT Infrastructures”

In addition to even higher speeds than 4G, 5G offers a range of features including ultra-low latency to allow robots to operate smoothly even in remote areas, and multiple simultaneous connections to connect multiple devices to a network simultaneously (Figure 5-3-3-1). For this reason, 5G holds great promise as an essential infra-

structure for realizing an IoT society in which all things are connected to the Internet. In fact, specific initiatives utilizing 5G are already being promoted in various regions and fields, such as autonomous driving of tractors, inspecting products using AI-based image analysis, and controlling construction machinery remotely.

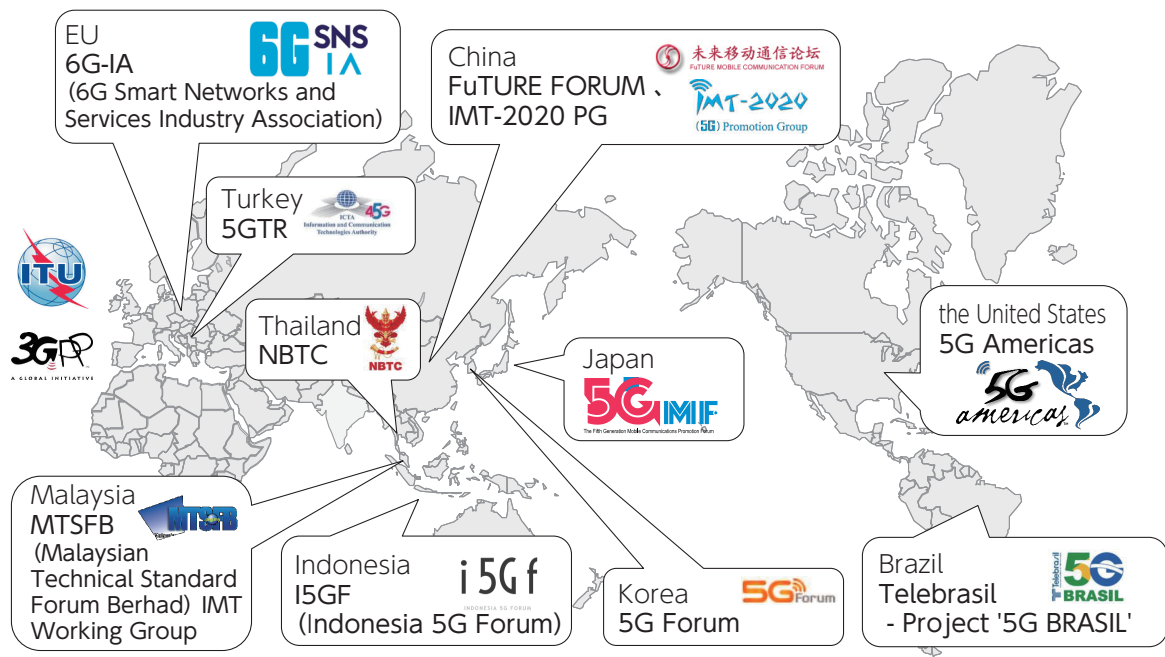
Figure 5-3-3-1 5G features



Recognizing that 5G will serve as a global infrastructure for economy and society, the Ministry of Internal Affairs and Communications is actively contributing to the efforts of the International Telecommunication Union (ITU) to standardize 5G, and is striving to strengthen international cooperation with Western and Asian countries (Figure 5-3-3-2). In order to make integrated and effective use of measures to support the de-

velopment of ICT infrastructures (including 5G) and measures to promote the use of 5G, and to deploy other ICT infrastructures throughout Japan as soon as possible, in June 2019 MIC formulated a master plan for regional development of ICT infrastructures leading up to fiscal 2023, then revised it in July and then again in December 2020.

Figure 5-3-3-2 Organizations promoting 5G in each country/region



#### b Formulation of “Digital Garden City Nation Infrastructure Development Plan”

In light of Prime Minister Kishida's announcement in December 2021 that 5G coverage would be increased to 90% by fiscal 2023 in order to realize the Digital Garden City Nation Concept, the Ministry of Internal Affairs and Communications requested mobile carriers at the end of the same month to continue to develop 5G base stations and to prepare and submit plans on the number of 5G base stations and 5G coverage by fiscal 2025. Based on these plans, MIC formulated and announced the “Digital Garden City Nation Infrastructure Development Plan” on March 29, 2022, as a follow-up to the “Master Plan for Regional Development of ICT Infrastructures” (the development plan was revised on April 25, 2023 in consideration of changes in the social situation since then).

Serving as a policy for the development of 5G, this infrastructure development plan describes a two-phase strategy aimed at achieving the world's most advanced 5G environment. The first phase calls for the nationwide development of 5G infrastructures (4G and 5G master stations), while the second phase calls for the regional development of slave stations and the expansion of area coverage nationwide (Figure 5-3-3-3). During the first phase, the aim is to bring 4G to all residential areas and deploy master stations nationwide to serve as the basis for deploying 5G in nearly all areas of demand. During the second phase, the aim is to have 95% of the population covered by 5G nationwide by the end of fiscal 2023 (up from 30% as of the end of fiscal 2020), and 5G base

stations in all municipalities. By the end of fiscal 2025, the aim is to have 97% of the population covered nationwide and 90% or more in each prefecture. The aim is to reach 4G and 5G road (highways and national roads) coverage of 99% (100% for highways) by the end of fiscal 2030, in order to improve non-residential areas. Some concrete measures to achieve this goal include allocating new frequencies for 5G such as the 2.3 GHz band, revising the Radio Act to establish responsibility for installing base stations, supporting the installation of 5G base stations in disadvantaged areas through subsidies under the “Mobile Phone Area Development Project,” providing support through tax measures, and promoting infrastructure sharing (Figure 5-3-3-4).

In order to allow wireless and IoT solutions that meet local needs to be implemented throughout society in a manner that brings residents convenience, MIC is promoting the development of regional digital infrastructures that flexibly combine various wireless systems including local 5G, and the practical application of advanced solutions that utilize these digital infrastructures. For example, MIC will promote the development of digital infrastructures in cooperation with relevant ministries, agencies, and local governments, in conjunction with projects involving autonomous driving and drones that are soon expected to be implemented throughout society.

Figure 5-3-3-3 5G development

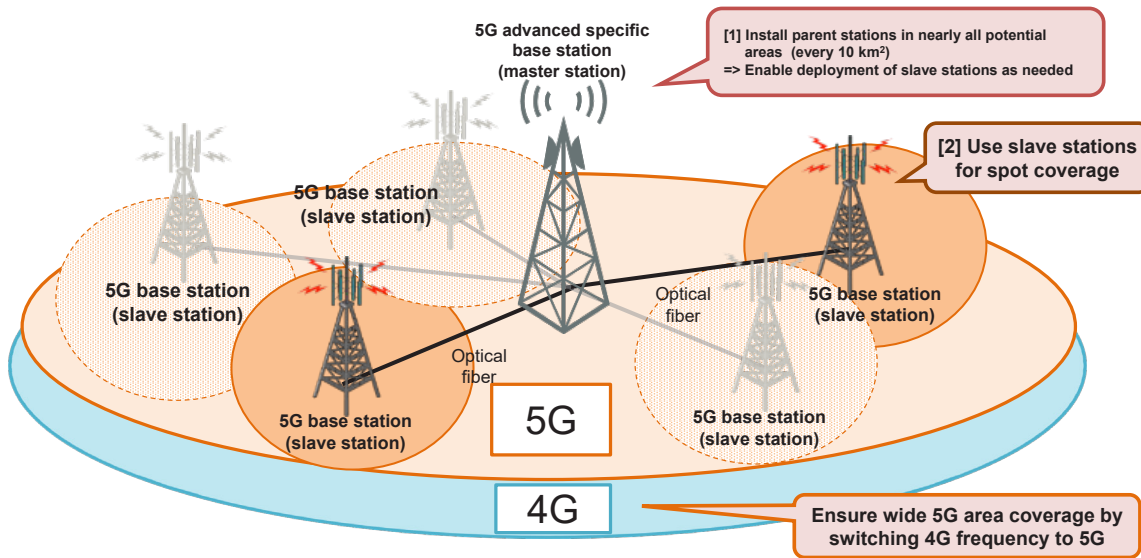


Figure 5-3-3-4 Development of Digital Garden City Nation infrastructure (roadmap)

	FY2023	FY2024	FY2025	FY2026	FY2027	Fiscal 2030
<b>Comprehensive initiatives</b>	Regional Council consisting of carriers, local governments, people involved in social implementation and other players is held to promote optical fiber/base station development based on the local needs.					
<b>(1) Fixed broadband (optical Fiber, etc.)</b>	(99.72% at the end of FY2021) Household coverage: 99.85%	99.90%*				Maintain optical fiber network
	Support maintenance through subsidies, use subsidy system to support maintenance and management expenses	Aim to further improve communication environment in accordance with communications conditions				
	Develop communications environment for "GIGA School Program"					
	Promote transition of equipment from public to private	*Aim also to develop all necessary regions				
<b>(2) Wireless IoT infrastructure (5G, etc.)</b>	Make 4G available in all residential areas	Maintain 5G infrastructure				
	Complete development of 5G master stations in all areas with needs (infrastructure deployment rate: 98%)	Nationwide/individual prefectures: 99%*				
	Population coverage: 95% nationwide. Development of 5G base stations in all municipalities	97% nationwide	Over around 90% in each prefecture	600,000*		
	Number of base stations: 280,000	300,000	Road coverage (highways and national roads): 99%*, 100% for highways			
	Develop a regional digital infrastructure that flexibly combines various wireless systems including local 5G, and promote the practical application of advanced solutions that utilize this infrastructure					
	+6 GHz (3 GHz => 9 GHz width) for mobile phone frequencies compared to fiscal 2021	Necessary measures based on results of review				
	Review development of system for 5G relay base stations, etc.	Necessary measures based on results of review				
	Support development through subsidies (promote infrastructure sharing) and tax systems	Necessary measures based on results of review				
	Review system policy based on results of local 5G development demonstration	Study on maritime usage				
	Necessary measures for local 5G flexibility	Use subsidies to promote development of areas in non-residential areas and measures to block radio waves in railway and road tunnels				
Review implementation schedule for intercarrier roaming in emergencies, and take necessary measures based on results of review						
Promote development of local digital infrastructure and social implementation of advanced solutions						
Review expanding the use of mobile phones and wireless LANs in the air						
Promote social implementation of Level 4 autonomous driving in limited areas						
Complete sequential processes toward						
Necessary measures based on results of review						
<b>(3) Data centers, undersea cables, etc.</b>	Promote decentralization of data centers (MIC, METI)					
	Develop third and fourth core sites to complement Tokyo and Osaka and provide alternates (MIC, METI) *Support maintenance through subsidies					
	Review support required for further decentralization and site development, while focusing on greening and cooperation with MEC (MIC, METI)					
	Install cables in Sea of Japan *Support maintenance through subsidies					
Start operation (fiscal 2026)						
Promote installation of undersea cables to strengthen Japan's role as a hub for international data distribution, promote multi-routing of international undersea cables to strengthen safety measures, protect international undersea cables and landing stations, and promote efforts to strengthen international undersea cable installation and maintenance systems						
<b>(4) Non-terrestrial networks (NTN)</b>	Prepare to verify and demonstrate HAPS at Expo 2025 held in Osaka					
	Continue to deploy and enhance HAPS throughout country					
Review securing satellite communications frequencies, developing systems, and building Japan's own satellite communications constellation						
<b>(5) Beyond 5G (6G)</b>	Use Beyond 5G R&D Promotion Project to support and establish related technologies for R&D for social implementation and overseas implementation, focusing on priority technology areas					
	Promote international standardization and development of an environment for international consensus and rulemaking					
Disseminate results of Expo 2025 held in Osaka, and implement in networks						
Start B5G operation						

**(2) Beyond 5G**

The next generation 5G information and communications infrastructure, "Beyond 5G (6G)," is expected to serve as the foundation for all industrial and social activities in the 2030s. In June 2020, the Ministry of Inter-

nal Affairs and Communications compiled the "Beyond 5G Promotion Strategy - Roadmap to 6G" report, and is currently promoting this strategy in cooperation with relevant ministries and agencies.<sup>1</sup>

<sup>1</sup> Refer to Chapter 5, Section 7, "ICT Technology Policy Trends" for more information on efforts related to Beyond 5G.

## 4. Promotion of advanced radio use systems

### (1) Intelligent transportation systems

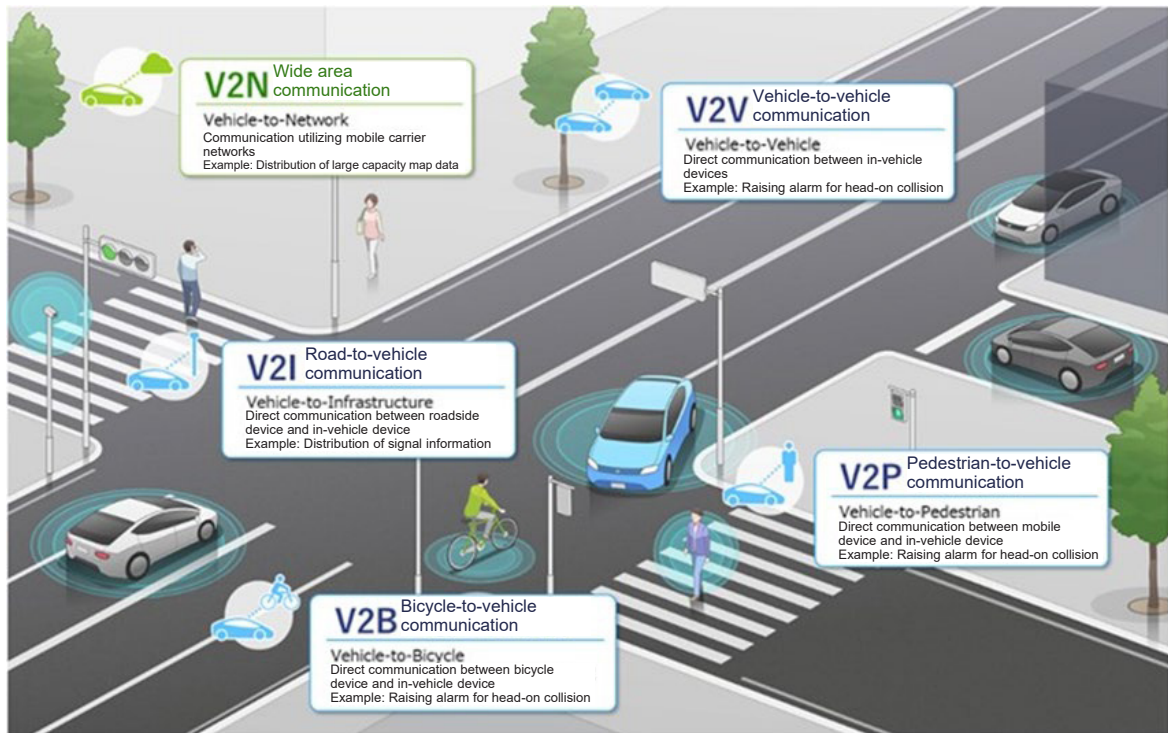
Intelligent transport systems (ITS) use information and communications technologies to connect people, roads, and cars, and contribute to the safe and comfortable transportation of people and goods by reducing traffic accidents and congestion.

The Ministry of Internal Affairs and Communications is currently allocating frequencies and establishing technical standards for use in vehicle information and communications systems (VICS), electronic toll collection systems (ETC), in-vehicle radar systems, and 700 MHz intelligent transportation systems, and is also promoting

the use of these systems.

Verification and implementation of autonomous driving is currently underway worldwide, though mainly in Europe and the U.S. In addition to in-vehicle sensors such as cameras and radar, vehicle to everything (V2X) communication (which exchanges information with surrounding vehicles and roadside infrastructures), is expected to play an important role in achieving advanced autonomous driving, such as merging/diverging support (**Figure 5-3-4-1**).

**Figure 5-3-4-1 V2X communication**



Although Japan was the first in the world to develop a practical 700 MHz intelligent transportation system in the form of a V2X communication system in 2015, efforts to verify and implement a V2X communication system utilizing the 5.9 GHz band are now being promoted worldwide. In response, the “Frequency Restructuring Action Plan” (released in November 2022) called for efforts to proceed with investigating the allocation of an additional 5.9 GHz band.

In light of these developments, the Ministry of Internal Affairs and Communications began holding meetings of the “Study Group on Next-Generation ITS Communications for Autonomous Driving” in February 2023, and has been working with relevant ministries and agencies, business operators, and academic experts to inves-

tigate how next-generation ITS communications must work for autonomous driving, as well as the types of communications needed to support it. The study group is now preparing to release an interim summary in the summer of 2023.

In order to contribute to the international standardization and overseas development of Japanese ITS technology, MIC is working to submit contributions to the draft reports and recommendations of the ITU Radiocommunication Sector (ITU-R), disseminate information at international conferences such as the ITS World Congress, and spread the development of Japanese technology throughout Asia and the Middle East, with a particular focus on India.

## (2) Public Safety LTE

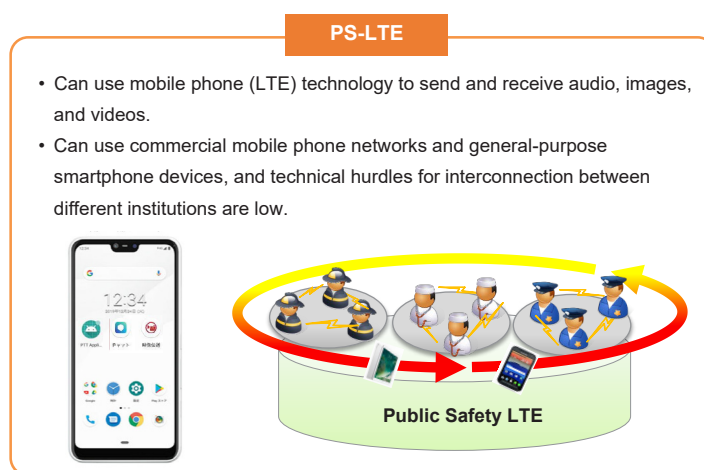
Major public agencies in Japan have individually developed and operated wireless systems specific to their respective operations, so it is not easy for these systems to communicate with each other beyond the framework of the individual agency. These systems are also mainly based on voice due to restrictions on the frequencies that can be allocated and the maintenance costs.

In countries such as the U.S. and the United Kingdom, public safety organizations such as fire and police departments are now utilizing a communications technology used for mobile phones called Long Term Evolution (LTE) to introduce jointly-used mobile communications networks that enable high-speed data communications for applications such as audio and image transmission. “Public Safety LTE (PS-LTE)” is a type

of public safety network that utilizes LTE. These networks are expected to contribute to smoother rescue operations by ensuring communication between public safety organizations in the event of a terrorist attack or major disaster. The technology is also said to reduce device costs due to using globally standardized technology.

For this reason, the Ministry of Internal Affairs and Communications has been working toward implementing PS-LTE in Japan (Figure 5-3-4-2) since fiscal 2019. In cooperation with relevant organizations, MIC will continue to examine the functions required for implementing PS-LTE in Japan and consider how to implement the technology in society, in order to implement PS-LTE as soon as possible.

Figure 5-3-4-2 Implementation of Public Safety LTE



## (3) Non-terrestrial networks

Non-terrestrial networks (NTN) such as HAPS and satellite communications are mobile communications networks that are not limited to the earth, but connect everything from sea, air, and space in multiple layers. They are useful for ensuring efficient coverage over remote islands, seas, and mountainous areas, and for building redundancy into terrestrial networks including submarine cables to prepare for emergencies such as natural disasters. The Ministry of Internal Affairs and Communications is currently engaged in efforts to promote the introduction of services in Japan beginning in fiscal 2025, based on the “Digital Garden City Nation

Infrastructure Development Plan” (which was formulated in March 2022 and then revised in April 2023).

For HAPS, MIC will promote the formulation of international rules (such as expanding the number of available frequencies) and develop domestic systems, and also plan to expand overseas operations through verification and demonstration efforts at Expo 2025 held in Osaka. As for satellite communications, systems required to install Ku-band non-geostationary satellite communications systems have already been developed, MIC will continue to ensure sufficient frequencies and promote the installation of required systems.

## (4) Spatial transmission wireless power transmission systems

Spatial transmission wireless power transmission systems transmit power over a distance of several meters by transmitting and receiving radio waves, without any wires required. They are expected to be used to power supply to sensor devices in factories. These systems supply low power without any need to connect charging cables or replace batteries. In addition to being more convenient, this brings more flexibility when installing sensor devices, and is expected to help realize Society 5.0 through the use of IoT.

The Ministry of Internal Affairs and Communications has been conducting studies on the sharing of frequencies with other wireless systems, radio wave safety, technical conditions, and the establishment of systems to make operation and coordination easier, with the goal of bringing these systems into practical use. Based on these studies, a system was developed in May 2022 for indoor use as an on-premises radio station using three frequency bands (920 MHz, 2.4 GHz, and 5.7 GHz), that meets certain requirements.



## 5. Promotion of overseas development of radio systems

Technologies and systems such as radio wave monitoring systems are playing an increasingly important role in ensuring the safe and secure use of radio waves. The importance of these technologies and systems is now recognized in Southeast Asia and other regions where the use of radio waves is rapidly expanding. Japan will need to contribute to the international community by developing radio systems with superior technology for use overseas, and will need to develop Japanese wireless infrastructures and services into a promising business that is competitive globally, leading to further growth of the domestic economy.

With this in mind, MIC is promoting strategic efforts in cooperation with the public and private sectors in order to expand the use of advanced Japanese radio systems globally and particularly throughout Asia. More specifically, in order to ensure that technologies with high-frequency utilization efficiency that match frequencies used in Japan are established as international standards due to their international superiority, MIC has implemented the "International Coordinated Use of Frequencies Promotion Project" to promote the international use of such technologies. MIC is also conducting surveys on technology trends in Japan and overseas, conducting verification experiments overseas, dispatch-

ing public-private missions, and making use of personnel exchanges at the technology user level. In light of the growing global demand for safe, secure, and reliable ICT infrastructures, the Ministry of Internal Affairs and Communications plans to intensively expand Japanese 5G network solutions overseas through Open RAN and vRAN over the next three years. MIC continues to promote open 5G standards through such means as proposing 5G models that take actual needs into consideration, based on the results of using 5G domestically (including local 5G)

In order to promote open base station specifications through Open RAN in Japan and overseas, the Ministry of Internal Affairs and Communications continued to conduct technology tests until fiscal 2022 to investigate interconnectivity and technical standards of base stations composed of base station equipment (RU, DU, and CU) from different vendors. Finally, "Japan OTIC," a base for testing and certification in accordance with O-RAN Alliance standards, was established at Yokosuka Telecom Research Park in December 2022 by several domestic telecom operators, in order to promote the Open RAN ecosystem in Japan with a view to overseas deployment.

## 6. Development of radio wave usage environments

### (1) Promotion of bioelectromagnetic environment measures

The Ministry of Internal Affairs and Communications is promoting the development of environments in which radio waves can be used safely and securely.

In order to prevent radio waves from causing undesirable effects on the human body, the "Radio Protection Guidelines"<sup>2</sup> was established. Part of these have been established as safety standards concerning the strength of radio waves under the Radio Act. These are guaranteed to be equivalent to international guidelines, and reflect the results of long-standing investigations<sup>3</sup> into radio safety. Previous studies have not confirmed the causal relationship between radio waves at levels below these safety standards and their effects on health. The Ministry of Internal Affairs and Communications continues to educate the public about the safety of radio waves through phone inquiries, information sessions, and leaflets.<sup>4</sup>

In order to prevent radio waves emitted from devices from affecting medical devices, MIC conducted a research study on the effects of radio waves on medical

devices<sup>5</sup> each year. In fiscal 2022, MIC measured the effect of radio waves (3.7 GHz, 4.5 GHz, and 28 GHz) from 5G mobile phone devices on medical devices used in the home environment, nursing homes, and medical institutions. The results of the study so far have been published as "Guidelines for Preventing Radio Waves from Affecting Implantable Medical Devices"<sup>6</sup>. The use of radio waves in medical institutions continues to expand, so MIC also hold information sessions on precautions for various technologies (including medical telemeters, mobile phones, and wireless LANs), and on how to deal with radio waves. These are distributed on demand to inform medical workers and others about the safe and secure use of radio waves. As a related initiative, MIC began implementing a project to block radio waves in medical facilities in fiscal 2017 through the "Subsidy for Wireless System Usage and Support Project," and have been developing environments where mobile phones can be used safely and securely in medical facilities (**Figure 5-3-6-1**).

<sup>2</sup> Radio wave protection guidelines: <https://www.tele.soumu.go.jp/j/sys/ele/medical/protect/>

<sup>3</sup> Radio wave safety research at the Ministry of Internal Affairs and Communications: <https://www.tele.soumu.go.jp/j/sys/ele/seitai/index.htm>

<sup>4</sup> Radio wave safety efforts: <https://www.tele.soumu.go.jp/j/sys/ele/index.htm>

<sup>5</sup> Research study on the effects of radio waves on medical devices: <https://www.tele.soumu.go.jp/j/sys/ele/seitai/chis/index.htm>

<sup>6</sup> Guidelines for preventing radio waves from devices from affecting implantable medical devices, etc.: <https://www.tele.soumu.go.jp/resource/j/ele/medical/guide.pdf>

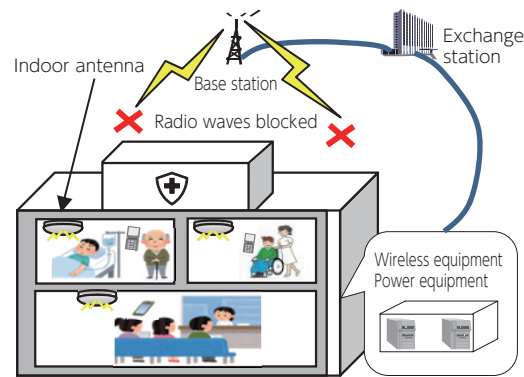
**Figure 5-3-6-1 Project to block radio waves in medical facilities**

[Burden breakdown]

Government 1/3	Medical institution 1/6	General incorporated association, etc. 1/2
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\*Does not apply to the portion of the burden other than that of the government, depending on the management status of the medical institution or organization.

Example (medical facility)



## (2) Promotion of measures against electromagnetic interference

With the spread of various electrical and electronic devices, it is necessary to take measures to protect wireless usage from unwanted radio waves emitted from various devices and facilities. For this reason, the “Radio Use Environment Committee”<sup>7</sup> established by the Information and Communications Technology Subcommittee of the Information and Communications Council investigates and reviews measures against electromagnetic interference, and contributes to deliberations on international standards by the Comité International Spécial des Perturbations Radioélectriques (CISPR). In response to a report by the Information and Communications Council, the Ministry of Internal Affairs and Communications has been working to eliminate wireless equipment interference caused by unnecessary radio waves and to prevent interference with electrical and electronic devices, by promoting standardization in Japan.

As an example of an international activity related to CISPR, Japan is now actively investigating technologies to prevent radio waves leaking from wireless power

transmission systems for electric vehicles from jamming existing radio stations, as investigations into international standards for wireless power transmission systems used in electric vehicles (EVs), multimedia devices, and home appliances are now in full swing.

As an example of a domestic activity related to CISPR, MIC is investigating national standardization with regard to revising various CISPR standards, and have received several partial reports from the Information and Communications Council in February 2022 (“Wireless Frequency Interference Wave and Immunity Measurement System Technical Conditions: Auxiliary Equipment - Conducted Emission Measurement,” “Wireless Frequency Interference Wave and Immunity Measurement System Technical Conditions: Conducted Emission Measurement,” and “Wireless Frequency Interference Wave and Immunity Measurement System Technical Conditions: Radiated Emission Measurement”).

## (3) Prevention of radio jamming and interruption

In order to eliminate jamming and interference and maintain a favorable radio wave usage environment as new radio wave usage including fifth generation mobile phones (5G) expands, the Ministry of Internal Affairs and Communications continues to monitor radio waves to eliminate jamming and interference, and is strengthening measures against the distribution of wireless and equipment that could cause these issues.<sup>8</sup>

More specifically, public awareness-raising activities are being conducted to prevent general consumers from violating the Radio Act by purchasing or using wireless equipment that is not compliant with technical standards (in other words, establishing an illegal radio station), and

to prevent jamming and interference of other radio stations. Since fiscal 2013, MIC has been purchasing wireless equipment that is widely available on the market (such as through the Internet), measuring the strength of their radio waves to determine whether they conform to the standards set forth in the Radio Act, conducting annual “wireless equipment purchase tests,” and publicizing the results<sup>9</sup> for the benefit of general consumers.

Manufacturers, distributors, or importers of wireless equipment determined to be noncompliant as a result of testing are required to ensure that they deal only with wireless equipment that complies with technical standards and to refrain from selling noncompliant equip-

<sup>7</sup> Radio Use Environment Committee: [https://www.soumu.go.jp/main\\_sosiki/joho\\_tsusin/policyreports/joho\\_tsusin/denpa\\_kankyou/index.html](https://www.soumu.go.jp/main_sosiki/joho_tsusin/policyreports/joho_tsusin/denpa_kankyou/index.html)

<sup>8</sup> Overview of MIC The Radio Use Web Site: <https://www.tele.soumu.go.jp/j/adm/monitoring/index.htm>

<sup>9</sup> Results of wireless equipment purchase tests: <https://www.tele.soumu.go.jp/j/adm/monitoring/illegal/result/>

ment. In fiscal 2020, MIC formulated the “Guidelines to Prevent the Distribution of Wireless Devices Noncompliant with Technical Standards,” and are now promoting efforts to prevent the distribution of noncompliant

equipment by clarifying efforts required of wireless equipment manufacturers and other companies, as well as voluntary efforts made by e-commerce companies.

## Section 4 Trends in Broadcasting Policy

### 1. Summary

#### (1) Initiatives so far

Broadcasting is a basis of democracy. It has fulfilled the role of social capital to share disaster information, community information, and other basic social information.

Television broadcasting switched completely from analog to digital at the end of March 2012. Since then, broadcasting services have been upgraded with HD quality and data broadcasting. In order to promote 4K/8K broadcast services with higher definition and picture quality even compared with HD, MIC, in cooperation with broadcasters, home appliance manufacturers, and others, implemented necessary projects following a roadmap revised in July 2015, so that many people across the country could enjoy the 2021 Tokyo Olympic and Paralympic games through lively and powerful 4K/8K pictures.

The overseas expansion of content is expected to have a large ripple effect, such as an increase in the number of foreign visitors to Japan and an increase in exports of agricultural, forestry, fishery, and regional products, as Japan's appeal spreads overseas through content. MIC has promoted efforts to expand broadcast content over-

#### (2) Future challenges and directions

With the spread of broadband, the growth of Internet video streaming services, and the diversification of viewing devices, the environment surrounding broadcasting has changed drastically, with how viewers view content changing and increasingly shifting away from television. As viewers increasingly obtain information not only from broadcasting but also from the Internet, advertising costs for terrestrial television broadcasts may continue to decline in the long term, requiring structural changes to be made. Meanwhile, issues such as fake news are also emerging in Internet spaces. It is important to ensure information health, and broadcasting plays an important role in disseminating reliable infor-

seas in cooperation with relevant ministries, agencies, and organizations.

Furthermore, with focus on radio broadcasting, the usefulness of which was recognized when earthquakes occurred, MIC has promoted initiatives that contribute to the resilience of broadcasting networks, which includes countermeasures against poor reception of radio broadcasting and protection of transmitting equipment from disasters so that broadcasting can continue to appropriately provide people with disaster information and other information. In order to equalize information access opportunities through broadcasting, MIC has promoted the spread of broadcasting for the visually challenged and those with hearing impairments by formulating “Guidelines for Information Accessibility in Broadcasting” and other measures.

Both a “receiver” and “sender” are important for broadcasting programs, so MIC has been working to improve literacy in broadcast media, especially for elementary, junior high, and high school students, and has been developing, disseminating, and lending educational materials.

mation, guaranteeing freedom of knowledge, sharing basic social information, and promoting a mutual understanding of diverse values. In fact, expectations for its role are increasing in this digital age.

In response to these changes, it is necessary to tackle issues including strengthening the foundation of broadcasting businesses, promoting the distribution of broadcast content, and strengthening the resilience of broadcasting networks and their disaster resistance, while at the same time considering how broadcasting and broadcasting systems should function from a medium-to-long term perspective.

### 2. Consideration of how the broadcasting system should function in the digital age

In order to examine the future of broadcasting and how the broadcasting system should function as times change over the medium-to-long term in order to increase management options instead of being trapped in the existing framework, MIC held the “Study Group on the Ideal Broadcasting System in the Digital Age” (“Broadcast System Study Group”) in November 2021, and published its “Summary of the Future of Broadcasting and the Ideal Broadcasting System in the Digital

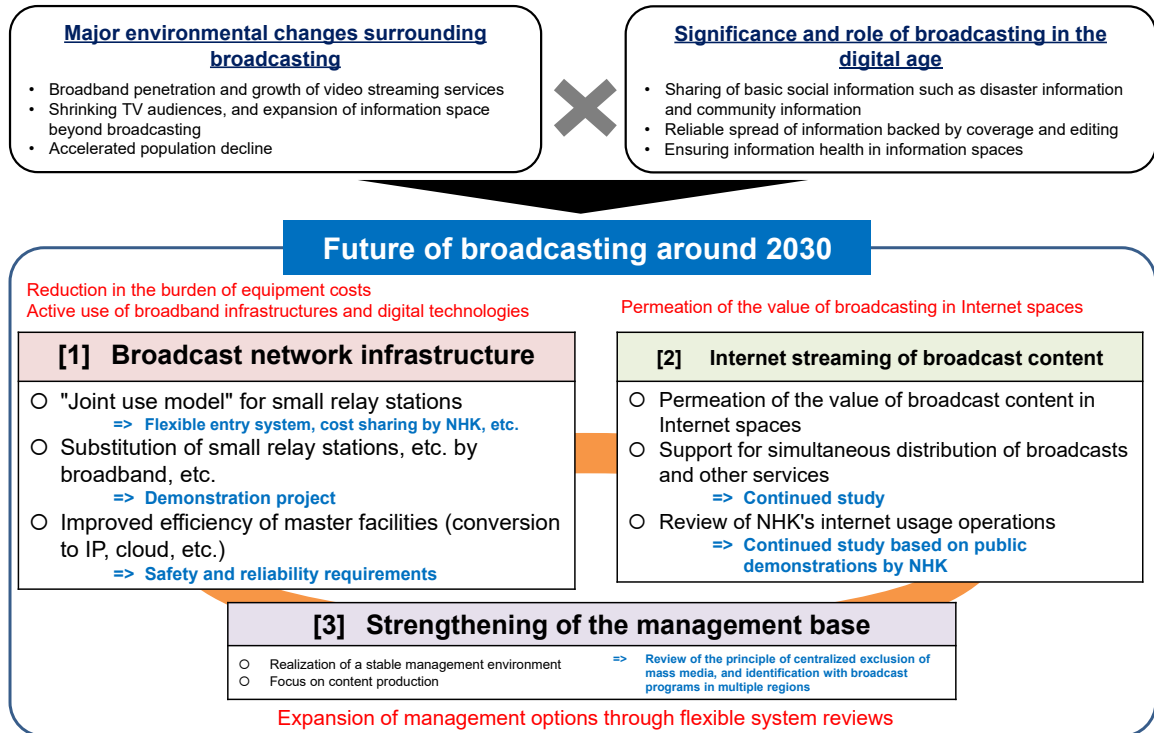
Age” in August 2022 <sup>1</sup>Figure 5-4-2-1). This report proposes three main issues: (1) the future of the broadcast network infrastructure, (2) how to distribute broadcast content on the Internet, and (3) strengthening the management foundation of broadcasters. Based on the recommendations of this report, the Act Partially Amending the Broadcast Act and Radio Act was enacted in May 2023 (Act No. 40 of 2023) to establish a system for domestic basic broadcasters in multiple broadcasting re-

<sup>1</sup> “Summary of the Future of Broadcasting and the Ideal Broadcasting System in the Digital Age” (August 5, 2022): [https://www.soumu.go.jp/menu\\_news/s-news/01ryutsu07\\_02000236.html](https://www.soumu.go.jp/menu_news/s-news/01ryutsu07_02000236.html)

gions to simultaneously broadcast the same program under certain conditions and to take measures such as enabling multiple specified terrestrial basic broadcasters to jointly use relay station equipment in a single broadcasting region. MIC will make preparations for its

smooth implementation, and will continue to study ways to replace small-scale relay stations with broadband and other services and to promote broadcast content policies and distribution.

**Figure 5-4-2-1 Overview of report by the “Study Group on the Ideal Broadcasting System in the Digital Age” (published on August 5, 2022)**



### 3. Future vision of public broadcasting

Based on the report of the Broadcast System Study Group, the “Public Broadcasting Working Group” has met since September 2022 to discuss how NHK should distribute content on the Internet. Specific discussions are now underway on several topics, including (1) the role of public broadcasting in the Internet era, (2) how public broadcasting should utilize the Internet, (3) how

to cooperate with private broadcasters on using the Internet, and (4) how to finance Internet utilization and the subscription fee system. Based on discussions at the working group, MIC will consider how to implement public broadcasting in response to the demands of the times.

### 4. Strengthening of the foundation of broadcasting businesses

#### (1) Initiatives regarding AM radio broadcasting

Much of the AM transmission equipment used by private AM radio broadcasters is more than 50 years old, and deterioration has become a serious issue. Meanwhile, private AM radio broadcasters have been burdened with costs related to both AM and FM equipment due to the launch of FM complementary broadcasting, which was introduced for the purpose of eliminating poor reception of AM radio broadcasting. Due to decreasing business revenue, paying to update this AM radio broadcast equipment has become an issue for management.

In light of these severe business conditions, when private AM radio broadcasters consider changing from AM to FM broadcasting (FM conversion) or abolishing AM

broadcasting relay stations without going through FM conversion, MIC will establish a special measure to allow AM stations to be suspended for a period of six months or longer during the simultaneous relicensing of broadcasters in November 2023. In March 2023, MIC published its “Basic Policy on Special Measures Pertaining to Suspension of Operation of AM Stations,” which describes information such as the details, requirements, and procedures related to these special measures, and now plans to examine the impact of the suspension of AM stations on residents and local governments based on the application of special measures.

## (2) Strengthening of efforts to spread new 4K8K satellite broadcasting

The “Report by the Working Group on the Future Image of Satellite Broadcasting” (Figure 5-4-4-1) released in October 2021 covers several issues to tackle in the future, including (1) improving the reception environment to spread new 4K8K satellite broadcasting and enhance 4K content, (2) utilizing vacant spectrums of BS dextrorotation and unused spectrums of BS levorotation, and (3) reducing the infrastructure usage fee and flexible platform operation in response to changes in the business environment.

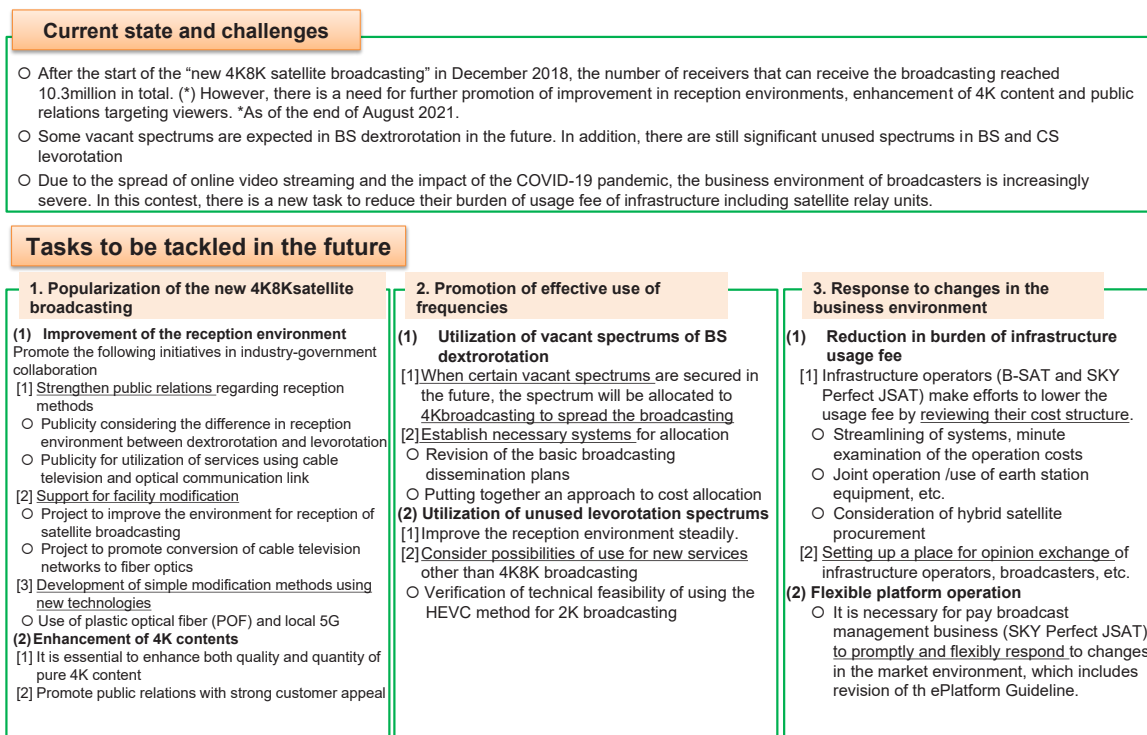
Based on this recommendation, MIC published its “Basic Concept of Allocating Vacant Bandwidth of BS Dextrorotation to 4K Broadcasting Based on the Report of the Working Group on the Future Image of Satellite Broadcasting” in August 2022. It summarizes concepts such as the following:

- If a certain amount of vacant bandwidth can be ensured for BS dextrorotation, it would be appropriate to allocate the bandwidth to 4K broadcasting in order to popularize 4K broadcasting

- It is appropriate to position 4K and other ultra-high definition television broadcasting as transmission lines, similar to dextrorotation and levorotation
- Bearing in mind the possibility of operators voluntarily advancing the sophistication of the video coding system for 2K broadcasting, an environment that allows 2K and 4K broadcasting to coexist in the same transponder could be developed following necessary verification

Based on this basic concept, MIC revised its basic broadcasting dissemination plan in November 2022, and then in March of the same year launched an open call for satellite broadcasters to broadcast in 4K through BS dextrorotation (by the end of May), with the aim of being certified by around the summer of 2023. In cooperation with groups such as broadcasters, manufacturers, and relevant organizations, MIC will continue to work toward further enhancing and expanding 4K broadcasting.

Figure 5-4-4-1 Summary of the report by the Working Group on the Future Image of Satellite Broadcasting



## 5. Promotion of the production and distribution of broadcast content

### (1) Promotion of the production and distribution of broadcast content

#### a Initiatives to effectively distribute broadcast content and other programs on the Internet

The report of the Broadcast System Study Group mentioned that it is important to reduce the equipment burden on local stations and other broadcasters and to create an environment in which they can focus on content production.

In order to create such an environment, it is necessary to continue to promote the distribution of broadcast content on television and the Internet so that it can be viewed more widely, in addition to promoting the production of content by broadcasters. In particular, local broadcasters are expected to play a major role in the dissemination of community information.

As the environment surrounding broadcasting changes, such as the expansion of Internet video streaming

services and the diversification of how content is viewed, Japan's broadcast content must be widely distributed in Japan and overseas by promoting the use of various platforms on the Internet including broadcasting, in order for broadcasting to continue to play its role as a social infrastructure.

With this in mind, the “Working Group on Promoting the Production and Distribution of Broadcast Content” has been meeting since December 2022 under the Broadcast System Study Group. The working group has been studying measures to promote the production and distribution of broadcast content in the Internet era with the cooperation of related business operators and others.

#### b Utilization of viewing data in the broadcasting field and how privacy should be protected

By collecting and analyzing the viewing history and other information about broadcast programs from television receivers connected to the Internet, for example, programs can be produced that closely match the detailed viewing needs of viewers in each region and disaster information can be provided. However, there is a problem in that it is technically possible to derive sensitive personal information including political beliefs and medical history of individual viewers.

Considering the public nature of broadcasting, MIC has established rules specific to the broadcasting field, which should be observed by every person handling personal information of broadcast recipients and others in the “Guidelines on Personal Information Protection of

Broadcast Recipients etc.” in addition to the minimum rules under the Act on the Protection of Personal Information. The “Study Group on the Utilization of Viewing Data in the Broadcasting Field and the Ideal State of Privacy Protection” has also been meeting since April 2021. The study group revised these guidelines in 2022 and 2023 based on the revised Act on the Protection of Personal Information, and has been discussing appropriate rules for handling the distribution history of broadcast content on the Internet, in addition to appropriate rules on handling viewing data collected in the process of broadcasting, in order to develop rules that balance data utilization and privacy protection.

#### c Facilitating the processing of rights pertaining to simultaneous distribution of live broadcast programs

In response to changes in the viewer environment due to the spread of smart devices, broadcasters are advancing online simultaneous distribution of broadcast programs on the Internet (refers to simultaneous distribution, repeat broadcasts and time-limited repeat broadcasts; the same applies hereinafter) and similar initiatives. These initiatives expand opportunities to view high quality content and are important for improving viewers' convenience, promoting the content industry, and securing international competitiveness. On the other hand, a large amount of various copyrighted works are used in broadcast programs, and there are problems in processing rights, such as the possibility of “masking” due to the inability to process copyrights during simultaneous distribution. In promoting simultaneous distribution, it was necessary to create an environment where

copyrighted works could be used more quickly and easily.

In order to facilitate the handling of rights related to simultaneous distribution, MIC worked together with ACA (responsible for the Copyright Act [Act No. 48 of 1970]) to hear the opinions of concerned parties and studied the direction of the system amendment. As a result, the Act Partially Amending the Copyright Act (Act No. 52 of 2021) was enacted at the 2021 ordinary session of the diet and measures were taken toward this end. Following the revision, simultaneous distribution of all five commercial broadcasters was realized in April 2022. With simultaneous distribution now in full swing, the government is closely monitoring trends with regard to how rights are handled, and is considering further facilitation.

#### d Promotion of regulation on production and trade of broadcast content

In order to improve the production environment and enhance motivation of producers in the broadcast content field, MIC held the “Study Group on Verification and Review on Promotion of Production and Trade of Broadcast Content” consisting of experts and other members. Based on the discussions of the group, MIC

formulated the “Guidelines for Regulation on Production and Trade of Broadcast Content Developed” (seventh edition) and is urging broadcasters and program production companies to regulate production and trade of broadcast content.

Specific measures include conducting regular follow-

up surveys regarding the guidelines to assess the state of production and trade of broadcast content, assessing the actual situation of compliance with the guidelines through interviewing of broadcasters and program production companies, providing guidance on problems based on Article 4 of the Act on the Promotion of Sub-

## (2) Overseas expansion of broadcast content

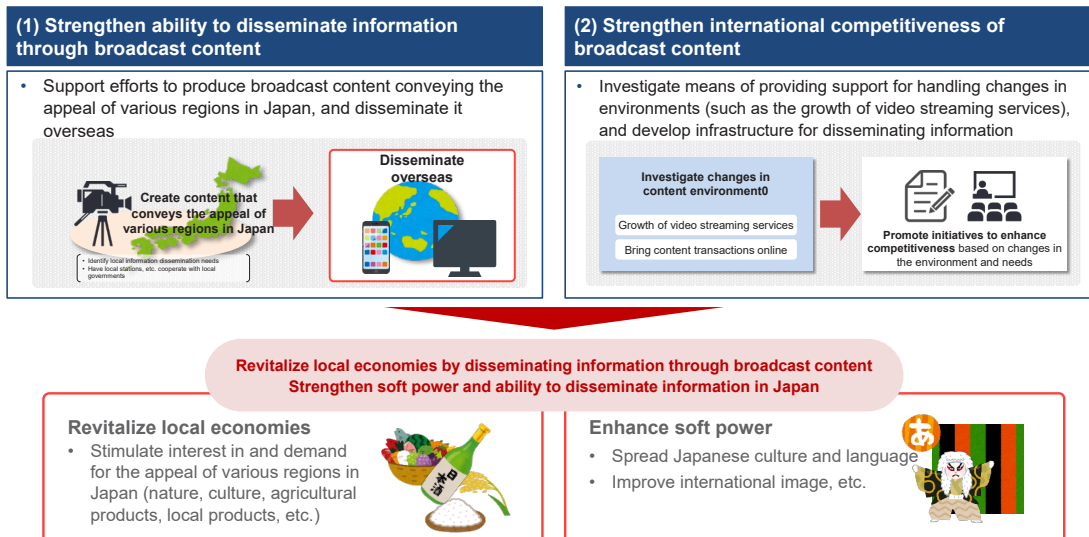
Cross-border distribution of content is advancing due to the expansion of video streaming services. There is also more overseas content being distributed in Japan. In order for Japan's content industry to develop, it is necessary to capture the growth of expanding markets by producing high-quality content from a global perspective and actively expanding overseas.

The overseas development of content is also extremely important from a diplomatic perspective, as it will convey the appeal of Japan to foreign countries and heighten interest in Japan's nature and culture. This is expected to have economic effects such as increasing the number of foreign visitors to Japan and expanding sales channels for agricultural, forestry, fishery, and regional products. It will also contribute to improving impression of Japan and strengthen its soft power.

In cooperation with the "Broadcast Program Export Association of Japan" (BEAJ), which promotes the overseas expansion of broadcast content, and relevant minis-

tries, agencies, and organizations, MIC continues to support efforts by Japanese broadcasters in cooperation with local governments to produce broadcast content that demonstrates the appeal of Japan's regions and disseminate it through overseas broadcasters. The public and private sectors also cooperated at international content trade fairs such as MIPCOM (Cannes, France) and TIFFCOM (Tokyo) in October 2022 and at ATF (Singapore) in December of the same year, in order to conduct PR activities and hold seminars to promote Japanese content overseas. In fiscal 2023, MIC began to develop an online platform to disseminate information on Japanese broadcast content overseas in cooperation with broadcasters and production companies that are actively engaged in overseas expansion. Including these initiatives, MIC will continue to promote the overseas expansion of content toward the goal of reaching a 1.5-fold increase in overseas sales (compared with fiscal 2020) by fiscal 2025 (Figure 5-4-5-1).

Figure 5-4-5-1 Promotion of the overseas expansion of broadcast content





## 6. Promotion of broadcasts for the visually challenged and those with hearing impairments

In February 2018, MIC formulated the “Guidelines on Information Accessibility in the Broadcasting Sector,” which set targets for the spread of closed-caption broadcasting, explanation broadcasting, and sign language broadcasting, in order to enable visual and hearing impairments and others to obtain information smoothly through TV broadcasting, and has encouraged broadcasters to make voluntary efforts. The “Study Group on the Enhancement of Broadcasting for Those with Visual and Hearing Impairments” has also been meeting since November 2022. Consisting of experts, organizations for persons with disabilities, and broadcasters, the study group has been reviewing these guidelines and discussing measures to enhance broadcasting for the visually challenged and those with hearing impairments, based

on recent results with subtitled broadcasts, technological trends, and other factors.

MIC also subsidizes production costs for subtitled broadcasts, explanatory broadcasts, and sign language broadcasts, based on the Act on Advancement of Facilitation Program for Disabled Persons' Use of Telecommunications and Broadcasting Services, with a View to Enhance Convenience of Disabled Persons (Act No. 54 of 1993). Due to the fact that subtitling live programs requires a large amount of manpower and costs, as well as human resources with special skills, MIC began to subsidize the maintenance costs of devices for subtitling live programs in fiscal 2020, including systems that utilize cutting-edge ICT.

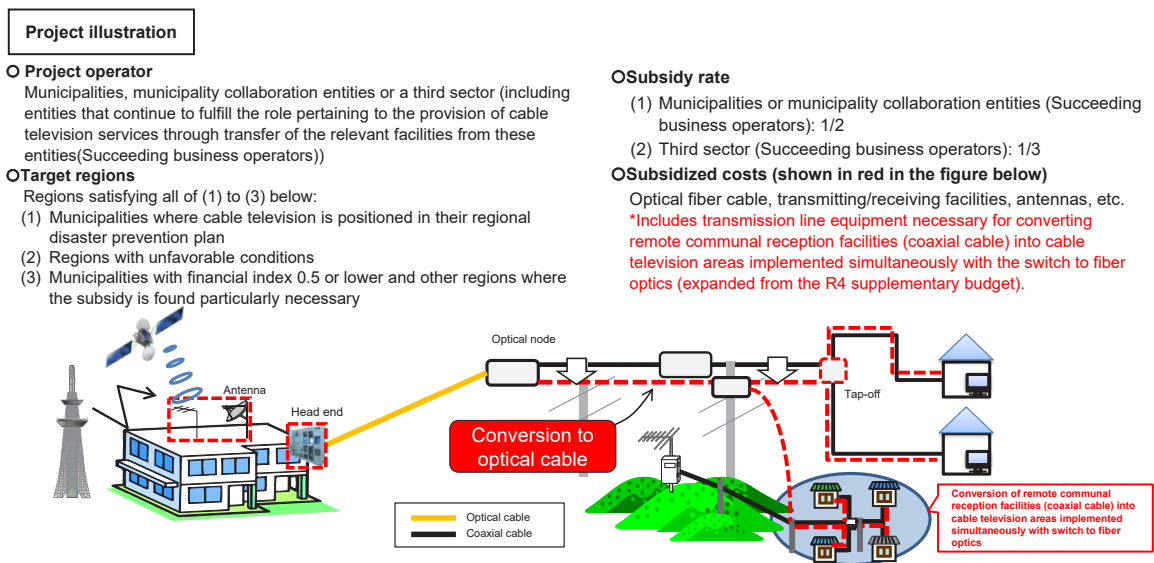
## 7. Improvement to the resilience of broadcast networks and enhancement of disaster resistance

### (1) Conversion of cable networks to fiber optic

Cable networks are the information and communications infrastructure of communities. In order to enhance disaster resistance through their conversion to fiber optic, MIC is implementing the “Project to enhance the disaster resistance through conversion of cable televisions to fiber optics toward establishment of 'New Normal',” which provides a partial subsidy for the costs necessary to convert cable networks to fiber optic in communities

by using the second fiscal 2022 supplementary budget and the fiscal 2023 initial budget (Figure 5-4-7-1). Newly introduced from the second supplementary budget in fiscal 2022, the purpose of this program is to provide integrated support for cable TV operators to convert existing service areas to optical, while also converting non-optical communal reception facilities to cable TV areas.

Figure 5-4-7-1 “Project to enhance the disaster resistance through conversion of cable televisions to fiber optics toward establishment of 'New Normal'”



**(2) Support for initiatives by broadcasters and others**

In order to support initiatives by broadcasters, local governments, and others to improve the resilience of broadcast networks, MIC is now running “projects to support broadcast network development (the project to develop basic terrestrial broadcasting networks and the project to develop regional cable television networks)”

(Figure 5-4-7-2), the “project to support resolution of poor reception of commercial radio broadcasting,” and the “project to support improvement of disaster resistance of basic terrestrial broadcasting, etc.” using the fiscal 2023 initial budget.

**Figure 5-4-7-2 Projects to support broadcast network development**

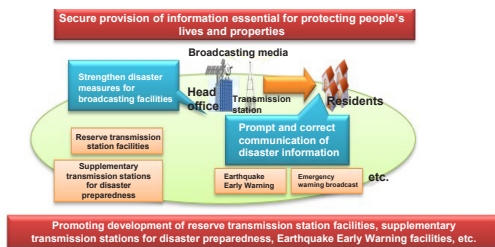
- In order to reliably provide disaster information, evacuation information, and other information essential for protecting the lives and property of citizens, the projects to support broadcast network development provide partial subsidies for the following maintenance costs, in order to bring resilience to the broadcast networks that serve as important means of transmitting information locally in the event of a disaster.
  - [1] Emergency earthquake early warning equipment, such as spare transmitting station equipment and supplementary disaster response transmitting stations involved in new radio and television development
  - [2] Redundant routes for cable television trunk lines

**Subsidy rate**

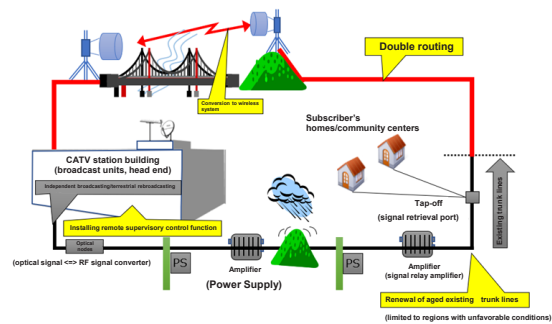
- Local governments (\*): 1/2
  - Third sector(\*), commercial broadcasters, (item [1]): 1/3
- \*Item [2] also includes entities that continue to fulfill the role pertaining to the provision of cable television services through transfer of the relevant facilities from these entities (succeeding business operators).

**Project name/image**

**[1] Project to develop basic terrestrial broadcasting networks**



**[2] Project to develop regional cable television networks**



## Section 5 Trends in Cybersecurity Policy

### 1. Summary

#### (1) Initiatives so far

Under intensifying threats to cybersecurity on a worldwide scale, the Basic Act on Cybersecurity (Act No. 104 of 2014) stipulating basic principles of Japanese cybersecurity policy was enacted in 2014. Based on the act, the Cybersecurity Strategic Headquarters was established under the Cabinet in 2015 to lead the cybersecurity measures of the government. Since then, a “Cybersecurity Strategy” has been formulated every three years to set goals and policies of measures considering changes in economic society and the increase in threats against cybersecurity. In September 2021, a new “Cybersecurity Strategy<sup>1</sup>” was decided by the Cabinet. The government has continued to promote cybersecurity policies based on this.

The “Action Plan on Information Security of Critical Infrastructure<sup>2</sup>” (decided by the Cybersecurity Strategic Headquarters in June 2022) established a basic framework for the protection of critical infrastructure and designates the information and communications field (telecommunications, broadcasting, and cable television) as one of the 14 critical infrastructure fields, suspension or unavailability of which would heavily affect people's lives and socioeconomic activities. As a government

#### (2) Future challenges and directions

As the movement of people has been restricted to prevent the spread of COVID-19 and the use of remote work has progressed, the switching of all socioeconomic activities to digital (the promotion of digital transformation [DX] of society as a whole) is now recognized as an even more important policy issue.

In recent years, cyberspace has become a battleground between countries, reflecting the harsh security environment and geopolitical tensions. There have been many cyberattacks targeting government agencies and critical infrastructures. Amid widespread and rapid progress in the conversion of the economy and society to digital, an increase in cyberattacks including the disruption of information and communications networks and the leakage of information could cause serious damage to people's lives and to Japan's economic and social activities. In December 2022, Japan's National Security

agency responsible for critical infrastructure, MIC must continue to promote efforts to ensure the safety and reliability of information and communications networks.

MIC has held meetings of the “Cyber Security Task Force” consisting of security experts since 2017. The task force has successively compiled a list of challenges and measures to be tackled by MIC with consideration to various changes in the situation, including the Tokyo Olympic and Paralympic games and the COVID-19 pandemic. In August 2022, it formulated “Comprehensive ICT Cybersecurity Measures 2022<sup>3</sup>,” which includes measures to ensure the safety and reliability of information and communications networks and improve the ability to handle cyberattacks autonomously. In order to respond to situations where many cyberattacks target IoT devices, the “Subcommittee on Cybersecurity Measures in Information and Communications Networks” has been held under the task force since January 2023 to consider comprehensive measures required from both the terminal side (IoT devices) and the network side, based on the current status of efforts and issues. Based on this, various measures are now being taken to promote cybersecurity measures in the ICT field.

Strategy was revised to include the introduction of “active cyber defenses” to improve response capabilities in the cybersecurity field, marking a turning point in Japan's cybersecurity policy.

As cyberspace increasingly becomes a public space, information and communications technology (ICT) infrastructure and services including IoT and 5G provide the basis for digital transformation. In order to promote digital reform and transformation across society, it is a critical prerequisite to ensure cybersecurity so that each citizen can use ICT safely.

Therefore, it is necessary to ensure the safety and reliability of information and communications networks, improve the ability to handle cyberattacks autonomously, promote international cooperation, and promote public awareness, as described below.

<sup>1</sup> Cybersecurity Strategy: <https://www.nisc.go.jp/active/kihon/pdf/cs-senryaku2021.pdf>

<sup>2</sup> Action Plan on Information Security of Critical Infrastructure: [https://www.nisc.go.jp/pdf/policy/infra/cip\\_policy\\_2022.pdf](https://www.nisc.go.jp/pdf/policy/infra/cip_policy_2022.pdf)

<sup>3</sup> Comprehensive ICT Cybersecurity Measures 2022: [https://www.soumu.go.jp/main\\_content/000829941.pdf](https://www.soumu.go.jp/main_content/000829941.pdf)

## 2. Efforts to ensure safety and reliability of information and communications networks

### (1) Initiatives related to IoT security

As IoT advances and various things supporting social and economic activities are connected to the Internet, IoT devices are often exposed to the threat of cyberattacks because they are difficult to manage, the performance of the devices is limited, and appropriate security measures cannot be taken. This calls for stronger countermeasures. In addition to cyberattacks that actually exploit IoT devices, communications related to cyberattacks observed by the NICTER cyberattack observation network operated by NICT in 2022 showed that IoT devices (especially DVR/NVR) were still the most frequently targeted.

Under these circumstances and in order to strengthen cybersecurity measures for IoT devices, the Act on the National Institute of Information and Communications Technology<sup>4</sup> was partially amended in 2018. Based on the amendment, MIC and NICT in collaboration with Internet service providers (ISPs) have been implementing the “National Operation Towards IoT Clean Environment (NOTICE)” initiative since February 2019. Under the current initiative, (1) NICT identifies IoT devices on the internet, which can be abused for cyberattacks by

entering a password that can be easily derived such as “password” or “123456,” (2) NICT sends information about the identified devices to the relevant ISP, and (3) the notified ISP identifies the users of the devices and alerts them.

Concurrently with NOTICE, MIC, NICT, ICT-ISAC and ISPs have been cooperating since June 2019 to implement a project where ISPs alert the users of IoT devices already infected with malware. In this project, devices performing communications caused by malware infection are detected by NICT based on the information obtained through NICTER above, and the ISPs identify the users of the devices.

In light of the fact that NOTICE efforts will end in March 2024, the Subcommittee on Cybersecurity Measures in Information and Communications Networks is now organizing the current status and issues with NOTICE and is examining the direction of NOTICE in the future. This includes enhancing observation capabilities and promoting effective countermeasures against the threat of cyberattacks that exploit IoT devices.



**Figure (related data) Overview of NOTICE and NICTER alerts**

URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00360](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00360)  
(Data collection)

### (2) Initiatives related to active security measures by telecom carriers

With the progress of 5G, it is expected that the use of IoT devices will further expand in various industries. In order to improve the effectiveness of security measures for IoT devices, it is necessary to improve the environment to allow for more flexible responses on the network side where traffic is passing in addition to existing measures on the terminal side.<sup>5</sup>

Cyberattacks and other threats are becoming increasingly large, detailed, and complicated. In response, MIC has been taking measures so that telecom carriers can efficiently and actively deal with these threats, since fiscal 2022. In fiscal 2023, MIC will continue such efforts as (1) demonstrating C&C cyber detection technology, (2) demonstrating detection technologies and sharing methods for phishing sites and other malicious websites, and (3) demonstrating ways of introducing network security measures. MIC will also promote the sharing and use of detection information to improve the accuracy of C&C servers working with telecom carriers

based on the discussions of the Subcommittee on Cybersecurity Measures in Information and Communications Networks, including visualizing IoT botnets.

The “Certified Association against Cyber Attacks on Telecommunications Facilities<sup>6</sup>” is a third party organization that shares information between ISPs and conducts research studies of sender information during DDoS and other cyberattacks, among other duties. In the past, information sharing and analysis at the association was limited to cases where the senders are identified after attacks. In order to allow information sharing and analysis for signs of activity prior to attacks (port scanning), the Act Partially Amending the Telecommunications Business Act was enacted in June 2022 as an effort to promote collaboration among telecom operators handling DDoS and other cyberattacks.<sup>7</sup>

<sup>4</sup> Act on the National Institute of Information and Communications Technology (Act No. 162 of 1999)

<sup>5</sup> “Comprehensive ICT Cybersecurity Measures 2021” (formulated in 2021) states that “it is necessary to consider measures to realize advanced and flexible responses in information and communications networks managed by ISPs on the internet” through “implementing active measures by telecom operators against cyberattacks.” ([https://www.soumu.go.jp/menu\\_news/s-news/02cyber01\\_04000001\\_00192.html](https://www.soumu.go.jp/menu_news/s-news/02cyber01_04000001_00192.html))

<sup>6</sup> Based on Article 116-2 (1) of the Telecommunications Business Act, ICT-ISAC was certified as a Certified Association against Cyber Attacks on Telecommunications Facilities in January 2019.

<sup>7</sup> The Act Partially Amending the Telecommunications Business Act (Act No. 70 of 2022) came into effect on June 16, 2023.

### (3) Initiatives related to supply chain risk policies

From fiscal 2019 to fiscal 2021, MIC conducted research and examination on ensuring the security of 5G networks. MIC organized a list of security issues and their countermeasures that operators should keep in mind by conducting technical verifications that take the entire 5G network into account (including virtualization infrastructures and management systems), and released some of the results in "5G Security Guidelines (First Edition)"<sup>8</sup> in April 2022. These guidelines were adopted as a new work item in ITU-T SG17 in September 2022, and MIC is currently promoting efforts toward international standardization in cooperation with specialized agencies.

In the communications field, the configuration of systems is becoming more complex as the functions required for systems become more sophisticated and diverse, and various commercial software products and open source software (OSS)<sup>9</sup> solutions are now being used as software components. These changes in software supply chains have resulted in cyberattacks that

insert malicious code in software components or target vulnerabilities in software components. However, if the configuration of software components in a system is not understood, it becomes difficult to respond quickly to attacks.

In response, MIC has been conducting demonstration projects to introduce SBOM<sup>10</sup> in the communications field since fiscal 2023, in order to contribute to the enhancement of cybersecurity by gaining a clear understanding of software supply chains using SBOM.

Although smartphones are now widely used, there are only limited methods for checking the actual conditions of smartphone applications when there is a concern that they may be transmitting user information against the user's wishes. Since fiscal 2023, MIC has been conducting a demonstration project to gain a clear understanding of the actual conditions of application behavior through having third parties conduct technical analysis of applications.

### (4) Initiatives related to trust services

Real space and cyberspace are highly integrated in Society 5.0, so exchanges conducted in physical spaces must also be able to be smoothly conducted in cyber space. In order to accomplish this, it is necessary to build infrastructures to safely and reliably distribute data. Trust services (Figure 5-5-2-1) are becoming increasingly important as systems to prevent data falsification and sender impersonation.

At the whole government level, the "Sub-working Group for Trust-Assured Digital Transformation" was established in November 2021 under the "Data Strategy

Promotion Working Group" based on the Digital Society Promotion Council Order (Cabinet Order No. 193 of 2021), in order to study needs and the necessary assurance level of various procedures and transactions in the public and private sectors. The sub-working group published the "Report of the Sub-working Group for Trust-Assured Digital Transformation"<sup>11</sup> in July 2022.

Based on the final report<sup>12</sup> of the "Working Group on Trust Services" released in February 2020, MIC has been studying the development of necessary systems and guidelines for time-stamps and e-seals.

#### a Development of a national time-stamp authorization system

The "Study Group on the Time-Stamp Authorization System" established in March 2020 further reviewed time-stamps, and in April 2021 MIC established Rules Concerning Authorization of Time-Stamp Operations (MIC Notice No. 146 of 2021). The Japanese government (Minister for Internal Affairs and Communications) then established an authorization system. Due to the revision of the tax system in fiscal 2022, time-stamps based on the national authorization system will be ad-

opted instead of time-stamps based on a private authorization system (Japan Data Communications Association), with regard to the digital data retention system for tax-related documents.<sup>13</sup> In February 2023, the Japanese government certified the time authorization service for the first time. MIC will continue to operate the state authorization system appropriately and reliably, while taking necessary measures to further expand the use of time-stamps.

#### b Formulation of "guidelines on e-seals"

The "Study Meeting on a System for Ensuring the Reliability of Data Issued by Organizations" established in April 2020 studied how ideal e-seals should be implemented in Japan. In June 2021, MIC released a report of

the review committee and formulated "Guidelines on e-seals"<sup>14</sup> compiling technical/ operational standards required from reliable e-seal services and business operators in Japan.

<sup>8</sup> 5G Security Guidelines (First Edition): [https://www.soumu.go.jp/main\\_content/000812253.pdf](https://www.soumu.go.jp/main_content/000812253.pdf)

<sup>9</sup> Software whose source code is freely available for anyone to use, improve, or redistribute.

<sup>10</sup> Software Bill of Materials.

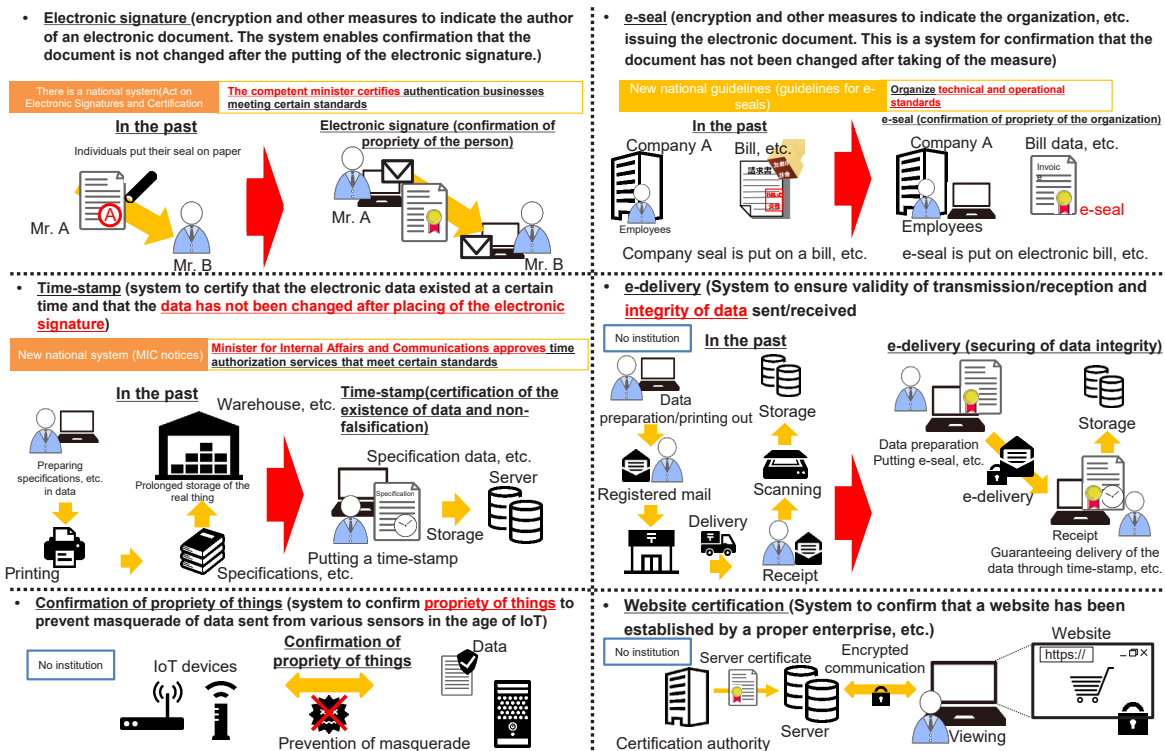
<sup>11</sup> Report of the Sub-working Group for Trust-Assured Digital Transformation (<https://www.digital.go.jp/councils/trust-dx-sub-wg/>)

<sup>12</sup> Final Report of the Working Group on Trust Services [https://www.soumu.go.jp/main\\_content/000668595.pdf](https://www.soumu.go.jp/main_content/000668595.pdf)

<sup>13</sup> A transitional measure was taken from April 1, 2022 to July 29, 2023 to allow the use of time-stamps pertaining to operations authorized by Japan Data Communications Association as before.

<sup>14</sup> Guidelines on e-seals ([https://www.soumu.go.jp/main\\_content/000756907.pdf](https://www.soumu.go.jp/main_content/000756907.pdf))

Figure 5-5-2-1 Trust services



## (5) Initiatives related to ensuring the safety of cloud services

### a Assessment of cloud service safety for government information systems

Under “Principle of the Cloud-by-Default,” the government had the “Study Group on Safety Evaluation of Cloud Services” meeting to study the issue of safety assessment of cloud services. As a result, (1) the basic framework for a system, (2) the approach to cloud usage in government agencies, and (3) the jurisdiction and operation of the system have been determined as per the “Basic Framework for the Security Evaluation System of Cloud Services in the Government Information System” (established by the Cybersecurity Strategic Headquarters, January 30, 2020).

In response to the basic framework, the Information System Security Management and Assessment Program (ISMAP) was launched in June 2020 based on various rules and regulations decided by the ISMAP Management Committee, which consists of experts and government agencies with jurisdiction over the system (Na-

### b Formulation of guidelines on cloud security

In order to promote the safe and secure use of cloud services, MIC formulates “Guidelines on Information Security Measures in Cloud Service Provision” summarizing information on security measures to be taken by cloud service providers. In September 2021, MIC released a revised edition (the 3rd edition) based on the actual state of cloud service provision and use. There have been recent cases where cloud service users failing to use services appropriately

tional Center of Incident Readiness and Strategy for Cybersecurity, Digital Agency, MIC, and METI). Cloud services that have been confirmed to have implemented security measures based on the standards set by this system began being registered in March 2021. As of May 11, 2023, a total of 44 services have been published on the ISMAP Cloud Service List.<sup>15</sup>

In November 2022, ISMAP for Low-Impact Use (ISMAP-LIU) was launched as a mechanism for SaaS solutions that deal mainly with confidentiality class 2 information and that are used for processing operations and information that pose a small security risk. ISMAP-LIU is designed to be looser than the current ISMAP for overall auditing of SaaS services that have very limited use or functionality, or that deal only with relatively unimportant information. It will work together with ISMAP to further expand cloud-by-default.

have resulted in the risk of information leaks. To address this issue, a broad range of entities including providers and users studied means for promoting the appropriate use of cloud services, and then formulated and released “Guidelines for Appropriate Settings for Cloud Service Usage and Provision” in October 2022.

<sup>15</sup> ISMAP Cloud Service List: [https://www.ismap.go.jp/csm?id=cloud\\_service\\_list](https://www.ismap.go.jp/csm?id=cloud_service_list)

### 3. Improvement of ability to handle cyberattacks autonomously

#### (1) Initiatives for the development of security personnel

While cyberattacks are becoming increasingly sophisticated and complicated, Japan is short of cybersecurity personnel both in quality and quantity. The development of human resources is an urgent issue. To address this

issue, MIC is working with the NICT “National Cyber Training Center” on several initiatives (CYDER, CIDLE, and SecHack365) to actively promote the development of cybersecurity personnel.

##### a Practical cyber defense exercises for persons in charge of information systems (CYDER)

CYDER is a set of practical cyber defense exercises for persons in charge of information systems at various organizations including state organs, local governments, independent administrative agencies, and critical infrastructure operators. Teams of trainees participate in the exercises and experience actual machine operation for a series of actions from detection of incidents caused by cyberattacks, response, reporting, and restoration in a large-scale virtual LAN environment simulating the network environment of their organization (Figure 5-5-3-1).

ners, intermediates, and semi-advanced students, a new online introductory course where students can learn the basics of incident response. In addition, the “Onsite CYDER” program was implemented, in which NICT travels to local governments to resolve issues with insufficient training due to geographical and temporal factors, and the “CYDER Satellite” program was implemented to improve the efficiency of instructors and staff by holding simultaneous meetings at multiple venues (Figure 5-5-3-2).

In fiscal 2022, in addition to the conventional group exercise courses and online standard courses for begin-

In total, more than 17,000 people have participated in CYDER group exercises since fiscal 2017.

Figure 5-5-3-1 Practical cyber defense exercises (CYDER: CYber Defense Exercise with Recurrence)

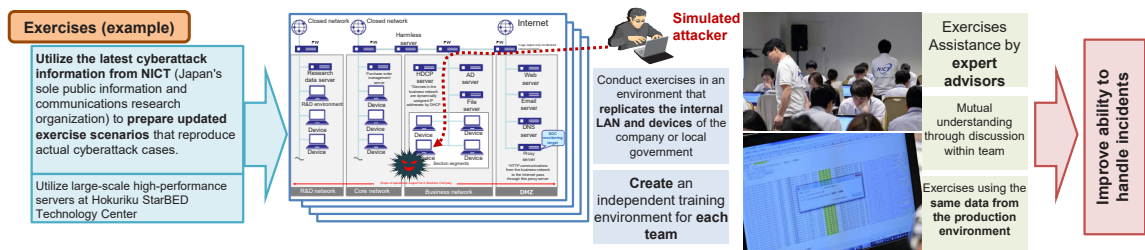


Figure 5-5-3-2 CYDER in fiscal 2022

Course	Type of exercise	Level	Intended audience (topics covered)	Intended organizations	Location	Frequency	Period
A	Group exercises	Beginner	Individuals just beginning to work with systems (Procedure for responding to incidents)	All organizations	All prefectures, etc. *On-site and satellite lessons are also being tried	72 times	From July, to Feb. of the following year
B-1		Intermediate	System administrators and operators (Autonomous incident response and security management)	Local governments	11 regions nationwide	20 times	From Oct., to Jan. of the following year
B-2				Organizations other than local governments	Tokyo, Osaka, Nagoya, Tsukuba	13 times	Jan. to Feb. of the following year
C		Semi-advanced	Security specialists (Advanced security technology)	All organizations	Tokyo	3 times	From Oct., to Feb. of the following year
Online Standard	Online exercises	Equivalent to beginner	Individuals just beginning to work with systems (Procedure for responding to incidents)	All organizations	(Participant workplaces, etc.)	As needed	5/24 to 7/19
Online Introduction		Introduction					1/17 to 2/24 of the following year

##### b Expo cyber defense training course (CIDLE)

CIDLE is a cyber defense training course for persons in charge of information systems of the Japan Association for the 2025 World Exposition, with the goal of ensuring a perfect security system for the 2025 World Ex-

position in Osaka. Leveraging what was learned during the Tokyo 2020 Olympic and Paralympic Games, a lecture and exercise program is scheduled to be offered during fiscal 2023.

### c Training program for young security personnel (SecHack365)

A program for cultivating young security innovators, SecHack365 is for ICT personnel age 25 or younger and living in Japan to become cutting-edge security personnel (security innovators) who can create new security technologies. Front-line researchers and engineers

teach research and development of security technologies by using NICT's actual cyberattack-related data continuously and at full scale for one year. 40 enrollees completed the course in fiscal 2022, for a total of 252 since fiscal 2017.

### (2) Establishment of an integrated cybersecurity knowledge/human resource development platform (CYNEX)

Domestic security business models are mostly based on the introduction and operation of overseas security products, and so cybersecurity measures in Japan heavily depend on overseas products and information, which leads to insufficient collection and analysis of cyberattack information and other data in Japan. In addition, through use of overseas security products, domestic data flows to overseas businesses, security-related information of Japan is analyzed overseas, and domestic businesses purchase threat information based on the analytical results from foreign businesses.

As a result, domestic security businesses cannot accumulate core knowhow and knowledge, and it is difficult for them to contribute to global information sharing or to train engineers who can work internationally. User companies also have a shortage of personnel who can appropriately handle security products and information. In order to enhance Japan's independent skills to cope

with cyberattacks, which include training of cybersecurity personnel, it is necessary to build an ecosystem that accelerates domestic generation of cybersecurity information and human resource development in Japan.

In collaboration with NICT, which conducts top-level research and development on cybersecurity in Japan, MIC began trial operation of the "integrated cybersecurity knowledge/human resource development platform" (commonly known as CYNEX) in fiscal 2022. CYNEX is an advanced platform that serves as a huge nexus for industry, academia, and government on cybersecurity, with the technology and knowledge cultivated by NICT at its core. In fiscal 2023, full-scale operation of information analysis, product verification, and human resource development projects is scheduled to start, while cooperation with universities and private companies is expanded.



**Figure (related data) Integrated cybersecurity knowledge/human resource development platform (CYNEX)**

URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00379](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00379)

(Data collection)

Beginning in fiscal 2023, the introduction of domestic security software is planned for some ministries as one part of CYXROSS, a demonstration project for the collection and analysis of cybersecurity information using gov-

ernment device information. The strengthening of security measures in Japan is also planned by aggregating and analyzing obtained malware information in NICT's CYNEX.



**Figure (related data): Demonstration project for the collection and analysis of cybersecurity information using government device information (CYXROSS)**

URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00380](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00380)

(Data collection)

This cutting-edge platform enables collection and analysis of a broad range of cybersecurity information in Japan, and further promotes development of domestic security products taking advantage of such information, while at the same time training highly skilled security

personnel and supporting human resource development in private and educational institutions. Through this project, MIC aims to further reinforce cybersecurity measures in Japan.



## 4. Promotion of international cooperation

Cyberspace spreads globally, and so collaboration with other countries is essential for establishing cybersecurity. MIC actively engages in discussions, disseminating and collecting information at various international conferences, and cyber consultations with the aim of contributing to building international consensus on cybersecurity.

Efforts to assist developing countries in building capacity in the field of cybersecurity are also important in order to reduce cybersecurity risks worldwide. MIC has been promoting human resource development projects

in the ASEAN region through the ASEAN-Japan Cybersecurity Capacity Building Centre (AJCCBC), and has been engaged in efforts to contribute to the improvement of cybersecurity capabilities, particularly in the ASEAN region.<sup>16</sup>

In order to promote information sharing on international cybersecurity among private entities including telecom operators, MIC holds workshops with the participation of ISPs of ASEAN countries as well as Japan-US and Japan-EU opinion exchange sessions at the Information Sharing and Analysis Center (ISAC).

## 5. Promotion of awareness raising

### (1) Initiatives related to remote work security

Security was noted as the biggest challenge in a questionnaire survey<sup>17</sup> of enterprises introducing remote work. In order to dispel anxiety about security so that enterprises can implement remote work with security, MIC has been formulating and sharing “Telework Security Guidelines” since 2004.

The COVID-19 pandemic triggered drastic changes in the environment surrounding remote work and there are also changes in security trends, which include progress in use of the cloud and sophistication of cyberattacks. In response, MIC made a total guidelines revision of the security measures to be implemented, specific

trouble cases, and other matters in May 2021.

At the same time, it is assumed that there may not be a dedicated person in charge of security or that the person in charge does not understand the specialized systems at small-to-medium-sized enterprises and other organizations. With this in mind, MIC formulated the “Telework Security Guide for SMEs (Checklists)” focusing on ensuring a minimum level of security. In May 2022, MIC revised the design and wording with universal design in mind to improve readability, and also prepared a new “Employee Handbook” as an appendix full of information that employees can actually use.

### (2) Promotion of formulation of security communities rooted in the area (regional SECURITY)

In order to ensure the safety and reliability of information and communications services and networks in Japan, it is necessary to ensure cybersecurity not only at business operators providing national or metropolitan-area services but also at business operators providing information communication services in local areas. However, local enterprises and local governments are facing various challenges, including information gaps on cybersecurity compared with enterprises running business in the Tokyo metropolitan area or nationwide, difficulties taking sufficient security measures indepen-

dently due to lack of management resources, and failures to recognize the need for security measures.

MIC established “regional SECURITY” communities that have built mutual help relationships regarding security among involved parties in 11 regions (mostly districts of regional bureaus of telecommunications) by fiscal 2022. In fiscal 2023, MIC will continue to support large-scale cross-regional events and the expansion of efforts to promote awareness among a wide range of people.<sup>18</sup>



**Figure (related data) Regional security communities**

URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00381](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00381)

(Data collection)

<sup>16</sup> Refer to Chapter 5, Section 8 “Promotion of International Strategies for ICT” for more information on the efforts of the ASEAN-Japan Cybersecurity Capacity Building Centre.

<sup>17</sup> Survey on actual conditions of remote work security: [https://www.soumu.go.jp/main\\_sosiki/cybersecurity/telework/](https://www.soumu.go.jp/main_sosiki/cybersecurity/telework/)

<sup>18</sup> Details on the latest events can be found at the following URL  
[https://www.soumu.go.jp/main\\_sosiki/cybersecurity/localecurity/index.html](https://www.soumu.go.jp/main_sosiki/cybersecurity/localecurity/index.html)

### (3) Appropriate promotion of sharing and disclosure of information related to cyberattacks

As the threat of cyber attacks increases, it is beneficial for both the affected organization and society as a whole to share and disclose information related to cyberattacks with cybersecurity related organizations, in order to clarify the full extent of attacks and strengthen countermeasures. However, there are many cases where the affected organization is cautious about sharing and disclosing information due to concerns about its reputation.

In April 2022, the “Study Group on Sharing and Disclosing Information on Cyberattacks” was formed under the management committee of the “Cybersecurity Coun-

### (4) Initiatives related to wireless LAN security

In addition to in homes and at workplaces, wireless LAN is now widely used while on the go through public wireless LAN services. However, without appropriate security measures, there is a danger of cyberattacks and information theft through wireless LAN devices. To address this issue, MIC has formulated separate guidelines on wireless LAN security measures for users and providers, and released revised versions of these documents adapted to new technologies and the latest security trends in May 2020.

The “Simplified Manual for Wi-Fi Users” is aimed at wireless LAN users, and presents three security measures to keep in mind: (1) carefully check access point to connect, (2) check whether the right URL is being used for HTTPS communication, and (3) check the settings of devices installed in the home. An explanation is provid-

ed for each of these points. The study group discussed guidance on sharing and disclosing information on cyberattacks that would serve as a practical reference for organizations affected by cyberattacks. Following public comments, a document was compiled and published by the study group in March 2023.<sup>19</sup>

Relevant ministries and agencies will continue to work together to disseminate and raise awareness of this information, and will continue to consider whether to revise this information based on feedback from organizations affected by cyberattacks.

ed for each of these points.

The “Guide on Security Measures for Wi-Fi Providers” is aimed at wireless LAN providers, and was compiled to help a broad range of people including restaurants and retail stores providing wireless LAN service to check what security risks are involved and what security measures to take.

In order to raise awareness about security measures for wireless LAN, a free online course is held every fiscal year in conjunction with Cyber Security Month (Feb. 1 to March 18) to provide information on the latest security measures for wireless LAN.<sup>20</sup> During fiscal 2022, an online course called “Learn About Wi-Fi Security Measures” was held from March 1, 2023 to March 26 of the same year.

<sup>19</sup> Guidance on sharing and disclosing information on cyberattacks that would serve as a practical reference for organizations affected by cyberattacks (formulated on March 8, 2023): [https://www.soumu.go.jp/menu\\_news/s-news/01cyber01\\_02000001\\_00160.html](https://www.soumu.go.jp/menu_news/s-news/01cyber01_02000001_00160.html)

<sup>20</sup> Online course on security measures for wireless LAN (Wi-Fi): [https://www.soumu.go.jp/main\\_sosiki/cybersecurity/wi-fi/index.html](https://www.soumu.go.jp/main_sosiki/cybersecurity/wi-fi/index.html)

## Section 6 Promotion of ICT Usage

### 1. Summary

#### (1) Initiatives so far

Since the establishment of the Information Technology Strategic Headquarters and the enactment of the Basic Act on the Formation of an Advanced Information and Telecommunications Network Society (Act No. 144 of 2000)<sup>1</sup> in 2000, Japan has promoted the use of ICT under various national strategies including the e-Japan Strategy. Based on these strategies, MIC has promoted

#### (2) Future challenges and directions

As various social/economic issues such as the decline of the working-age population and the contraction of local economies become more serious, there is an increasing need to use ICT to solve these issues. For example, the use of remote work is expected to realize work styles that are independent of location and time, and the use of new communication technologies such as local 5G is expected to improve productivity. In particular, following the outbreak of COVID-19 in 2020, the use of ICT in enabling non-contact and non-face-to-face lifestyles has once again become important, and it is necessary to take this opportunity to further promote the use of ICT throughout society.

Although the use of AI and the metaverse by companies and others is expected to help improve the convenience of daily life and revitalize Japan's economy, it is necessary to gain a clear understanding of the impact of these on society and the problems that may arise, and

the use of ICT in various fields such as medical care and regional revitalization in order to deal with Japan's social/economic challenges including the declining birthrate and aging society and associated labor shortages, increases in medical and nursing care expenses, and intensified natural disasters.

realize the implementation of a safe and secure society.

The use of ICT throughout society has progressed. However, as discussed in Chapter 4, Section 11, there is some variation in the usage rate of the Internet due to factors such as age. In order to realize a shift to digital that leaves no one behind, it is necessary to narrow the digital divide by eliminating anxiety and resistance to digital technologies among the public including the elderly, and by advancing initiatives to improve people's ability to use digital technologies.

The use of various Internet services such as social media and video streaming services is increasing among users of a wide age range, and it will be important for all generations to acquire literacy to properly utilize ICT, such as critically viewing information and disseminating information with consideration for others, as information distributed on the Internet also includes illegal harmful information, disinformation, and misinformation.

### 2. Promotion of ICT usage to contribute toward solving social/economic issues

#### (1) Promotion of local 5G

##### a Overview of local 5G

Unlike nationwide 5G services provided by mobile carriers, local 5G is a 5G system that can be flexibly constructed by various entities including local enterprises and local governments in their building or premise

based on the unique needs of the community or industry. The use of local 5G in various fields, forms, and environments is expected to play an important role in handling various challenges and creating new value.

##### b Development demonstrations for realizing local 5G services to solve issues

As an effort to spread local 5G, MIC began to tackle “development demonstrations for realizing local 5G services to solve issues” in fiscal 2020, in order to implement technical studies on radio wave propagation under a variety of use environments assuming actual use situations, and to create solutions using local 5G. In fiscal 2020, 19 demonstrations were conducted, followed by 26 demonstrations in fiscal 2021 and 20 demonstrations in fiscal 2022.<sup>2</sup>

In order to promote the introduction of local 5G in various situations such as factories, farmland, transportation, medical treatment, construction sites, and disaster sites, the “Public-Private Liaison Conference to Spread Local 5G” was established in January 2021. Consisting of relevant organizations and others, the purpose of the conference is to disseminate information for the spread of local 5G.

##### c Promotion of development through the tax system

In order to promote the introduction of safe and reliable 5G and solve various social issues in local communi-

ties by using 5G, while at the same time strengthening the international competitiveness of Japan's economy, a

<sup>1</sup> This act was abolished by the Basic Act on the Formation of a Digital Society (Act No. 35 of 2021).

<sup>2</sup> Go! 5G <https://go5g.go.jp/>

tax system to promote the introduction of 5G was established in fiscal 2020. The fiscal 2022 tax reform extended special measures to allow tax credits or special write-offs for corporate and income taxes until the end of fiscal

## (2) Promotion of remote work

### a Overview of remote work

Remote work is a flexible way of working that uses ICT to make effective use of time and place. It is effective for realizing a variety of working styles that suit each person's life stage and lifestyle, including those raising children, the elderly, and persons with disabilities, and for ensuring business continuity in the event of disasters or infectious diseases. People can work where they wish to live while maintaining income, so this work style can bring about various benefits throughout society such as creating a flow of people from urban areas to rural areas. Since 2020 and the spread of COVID-19, remote work has been widely used as a means of reducing the number of workers at worksites, especially in urban areas. However, as notions on preventing the spread of COVID-19 have spread, the implementation rate of remote work has dropped along with the number of infections. According to a survey of companies conducted by Tokyo Shoko Research, Ltd., the rate rose from 25.3% to 55.9% during the first emergency declaration, and then fell to 31.0%. The rate rose again to 38.4% during the second declaration, but has remained around 30%<sup>3</sup> since 2022.

With this in mind, MIC established the “Task Force for the Investigation of Remote Work Post-COVID-19” in April 2021 to receive opinions from experts on further expanding and establishing remote work, and investigating how remote work should function in Japan in the future. A proposal issued in August of the same year ar-

### b Support for the spread of remote work

With the aim of supporting the introduction of remote work in SMEs and rural areas where the remote work implementation rate remains low, MIC in collaboration with local chambers of commerce and industry and social security labor attorney associations has established remote work support networks across Japan, and is now conducting public relations activities in collaboration with regional bureaus of telecommunications and others. MIC is also working to spread better remote work practices by providing free individual consultation by experts (remote work managers) for enterprises and other organizations considering introducing or improving remote work practices. Since fiscal 2022, support has been provided integrated with labor-related remote

2024 along with special measures for property taxes until the end of fiscal 2023, after reviewing the plan to promote the development of base stations in rural areas in order to realize the “Digital Garden City Nation Concept.”

gued that “Japanese-style remote work,” such as enhancing communication through the use of ICT tools while maintaining good Japanese employment practices and business styles, should be the future of Japan.

In order to build momentum for remote work, the Remote Work Month Executive Committee (Cabinet Secretariat Bureau of Personnel Affairs, Cabinet Office for Promoting Regional Revitalization, Digital Agency, MIC, MHLW, METI, MLIT, Japan Tourism Agency, Japan Telework Association, and Japan Telework Society) advocates that November of each year be designated as “Remote Work Month” (an intensive period for remote work), conducts surveys of efforts to measure the effects of implementing remote work (such as contribution to work style reform and operational efficiency), and holds events and seminars runs by relevant ministries and agencies. In order to increase incentives for companies and others to introduce remote work through the selection and publication of advanced cases, and to accumulate reference cases for companies considering introducing remote work, MIC has been conducting the “Top Hundred Telework Pioneers” program since 2015 to award companies that have been recognized for their satisfactory use of remote work. The “MIC Minister Award” is also given to companies that have made particularly excellent efforts from the viewpoint of management results, ICT utilization, and contribution to local revitalization.

work consultation provided by MHLW as “one-stop telework support projects.”

In order to address information security concerns often cited as challenges for introducing remote work, MIC formulated “Telework Security Guidelines” and “Telework Security Guide for SMEs (Checklists)” for reference by enterprises and other organizations when implementing remote work. The revised version released in fiscal 2022 features updated checklists and the addition of the “Employee Handbook.”

In order to promote the spread and establishment of remote work in local areas, MIC began conducting demonstrations in fiscal 2022 to build a model that uses remote work to solve cross-field policy issues facing local areas.



**Figure (related data) Ensuring remote work security**

URL:[https://www.soumu.go.jp/main\\_sosiki/cybersecurity/telework/index.html](https://www.soumu.go.jp/main_sosiki/cybersecurity/telework/index.html)

<sup>3</sup> The 22nd “Survey on COVID-19 (Tokyo Shoko Research, Ltd.)”: [https://lp.tsr-net.co.jp/rs/483-BVX-552/images/20220622\\_TSRsurvey\\_CoronaVirus.pdf](https://lp.tsr-net.co.jp/rs/483-BVX-552/images/20220622_TSRsurvey_CoronaVirus.pdf)

### (3) Promotion of smart city vision

Since fiscal 2017, MIC has been promoting the concept of smart cities in order to solve various problems faced by cities through the use of digital technology and data, leading to regional revitalization. The “Smart City Promotion Project for Solving Local Issues” is being implemented in cooperation with relevant ministries and agencies to support local governments and others working to implement smart cities using “Urban OS,” a data

### (4) Promotion of ICT use in the education field

In order to further promote the use of ICT in education, MIC in cooperation with MEXT implemented the “Smart School Platform Demonstration Project” using data from the “school affairs system” used by teachers and the “lesson/learning system” used also by students to examine safe, effective, and efficient methods of linking data between systems from fiscal 2017 to 2019. In fiscal 2020, MIC released “Smart School Platform Tech-

### (5) Promotion of ICT use in the medical field

Japan is becoming a super-aging society and is facing challenges such as increasing medical and nursing care costs and uneven distribution of medical resources. For this reason, MIC has been promoting the spread of remote medical care and the use of PHR<sup>5</sup> data in order to improve and streamline medical and health services by building and upgrading infrastructures for utilizing medical, nursing, and health data.

The Japan Agency for Medical Research and Development (AMED) launched a research project in fiscal 2022 to develop and demonstrate an 8K endoscope system and continues to prepare communications environments and network conditions necessary for realizing remote surgery, with the goal of developing remote medical care, which is expected to serve as a powerful means of

### (6) Development of disaster prevention information systems

Japan is one of the world's top nations in terms of natural disasters and has sustained severe social/economic damage each time it was hit by a large-scale natural disaster. As large-scale natural disasters including Nankai

#### a Development of disaster resistant communications networks for firefighting and disaster prevention

Collecting and sharing information pertaining to damage situations requires a communications network that can guarantee communication in times of disaster. Communications networks connecting the state, the Fire and Disaster Management Agency (FDMA), local governments, residents, and others have been constructed for this purpose. The networks consist of (1) the Cabinet Office's Anti-Disaster Radio Communication System collecting and conveying information within the government, (2) fire defense disaster prevention radio networks

linkage platform which serves as the foundation for smart city services. In fiscal 2022, the project provided support to 12 organizations.

Efforts were also made to promote the spread of smart cities by creating and releasing videos and interview articles that introduce examples of smart city initiatives in the region, as well as case studies of smart city services.<sup>4</sup>

“Technical Specifications” on its website and engaged in efforts to popularize and promote this information. During fiscal 2021 to 2022, MIC has been studying technical specifications (reference models) required to realize a “digital education platform” to serve as the basis of information sharing between digital learning systems owned by business operators outside of schools.

resolving the uneven distribution of doctors throughout the country. Since fiscal 2023, it has also been conducting research and development to establish a data distribution platform necessary for obtaining PHR data requested by physicians from various PHR services, in order to enhance medical care and improve the accuracy of medical examinations.

The “Safety Management Guidelines for Information Systems and Service Providers Handling Medical Information” (MIC and METI) and related documents will be revised in fiscal 2023 in light of the increasing complexity and diversity of information systems and services handling medical information, the damage caused by new threats such as ransomware attacks, and experiences during actual use.

Trough earthquakes are anticipated in the future, it is necessary to reduce human and physical damage from disasters by efficiently using ICT.

connecting FDMA and prefectures, (3) prefectural disaster management radio communications systems connecting prefecture and municipalities, (4) municipal disaster management radio communications systems connecting the municipality and residents, and (5) satellite communications networks connecting the state and local governments as well as local governments to local governments. Regarding satellite communications networks, MIC is promoting measures to introduce high-performance and inexpensive next-generation systems.

<sup>4</sup> Case study videos and interview articles <https://www.mlit.go.jp/scpf/efforts/index.html>  
Smart city service case studies [https://www.soumu.go.jp/main\\_content/000808085.pdf](https://www.soumu.go.jp/main_content/000808085.pdf)

<sup>5</sup> Abbreviation for Personal Health Record and generally refers to lifelong personal health/medical information (e.g., health examination results, vaccination/medication history, inspection results, vital signs checked by the person). It is expected that individuals will use it as a digital record to promote their own health.

#### b Deployment of mobile communications devices for disaster management

In order to guarantee communications in afflicted areas when communication by mobile phone or other means is unavailable, MIC lends mobile communications devices for disaster management to local governments and others. As of February 2023, 417 satellite mobile phones, 179 MCA radios, and 1065 convenience radios have been deployed in regional bureaus of tele-

#### c Securing means of emergency communication during disasters

In preparation for situations where it is difficult to use telecommunications services through a public telecommunications network during a disaster, attaché case type ICT units developed by MIC have been deployed in regional bureaus of telecommunications nationwide since fiscal 2016. A system has been established to help se-

#### d Stable operation of Nationwide Instantaneous Alert System (J-Alert)

FDMA has established the “Nationwide Instantaneous Alert System (J-Alert)” to instantaneously transmit information on situations requiring immediate response (including ballistic missile information, early earthquake warnings, and tsunami warnings) from the government to residents through such means as emergency alert emails to mobile phones and municipal di-

#### e Promotion of the use of L-Alert

MIC is promoting the use of L-Alert, which is a common platform for unified transmission of disaster information including evacuation orders issued by local governments to diverse media including a large number of broadcast stations and Internet business operators. It has spread across the country throughout all 47 prefectures and now plays an important part in the disaster information infrastructure.

communications and other entities across the country. Use of these devices is expected to complement communications of information essential for a range of activities from collecting and circulating disaster information during the initial response, to conducted prompt and smooth emergency restoration activities.

cure necessary means of communication by lending the units at the request of local governments and other disaster prevention organizations. A total of 25 units have been lent out to regional bureaus of telecommunications as of April 2023.

saster management radio communications systems. In order to quickly and reliably transmit emergency information by J-Alert, municipalities are urged to thoroughly check the operation of J-Alert devices so that they do not cause problems, and the multiplexing of the J-Alert information transmission means being promoted.

To further promote the spread and use of L-Alert, MIC engaged in demonstrations to map disaster information provided through L-Alert to help visitors and other people who are not familiar with the region to understand information such as evacuation areas easily. MIC has also provided training on L-Alert for local government officers and other users.

## 3. Promotion of data distribution/use and new businesses

### (1) Social implementation of personal data trust banks

In order to promote the appropriate use of personal data including personal information, MIC and METI launched a study group to investigate a scheme for certifying information trust functions, and compiled the “Guidelines on Accreditation of Information Trust Function Version 1.0” on the voluntary certification of personal data trust banks by private organizations and others in June 2018. The guidelines focus on the use of data originating from individual users and consist of (1) accreditation criteria, (2) what to include in model agreements, and (3) the accreditation scheme. Based on the guidelines, an accreditation organization called the Information Technology Federation of Japan administered the first “personal data trust bank” accreditation in June 2018. Four companies have been accredited as “personal data trust banks” as of February 2023.

### (2) Promotion of cashless payment

The “Follow-up on Growth Strategy” (Cabinet Decision in June 2019) was formulated to promote cashless payment toward the goal of doubling the percentage of

The guidelines have been continuously reviewed since then. Most recently, the handling of personal information requiring special attention in the health and medical fields by personal data trust banks has been under review by the “Personal Information Requiring Special Attention Working Group” established under the study group since November 2022, and the “Guidelines on Accreditation of Information Trust Function Version 3.0” are scheduled to be published around the summer of 2023. Since fiscal 2023, MIC has been studying how personal data trust banks should function in smart cities to promote cooperation and utilization of various regional data including personal data retained by local governments, in order to promote regional DX including the creation of new local services and the realization of administrative efficiency.

cashless payment to about 40% by June 2025.

A type of cashless payment called code payment can be difficult to use for shops introducing multiple servic-

es. To address this issue, “Payments Japan” was established with MIC and METI as observers as an organization to promote cashless payment by concerned bodies and business operators, and formulated “Guideline for Unified Technical Specification of Code Payment” in March 2019. Codes based on this guideline are referred to as “JPQR.” Since then, JPQR has been promoted with a focus on restaurants, retail stores, barber shops, beau-

### (3) Acceleration of adoption of secure and reliable cloud services

With the spread of cloud services including ASP, SaaS, PaaS, and IaaS and users have more service options, it has become necessary to create an environment for users to obtain sufficient information for comparison, assessment, and selection of cloud services. With this in mind, MIC began formulating and publishing a total of eight guidelines referred to as “Information Disclosure Guidelines for Safety and Reliability of Cloud Services” in 2011 (partially revised in 2022), and has continued to add to and revise these guidelines as cloud services become increasingly diverse, such as adding “Information Disclosure Guidelines for Safety and Reli-

### (4) Discovery and development of ICT startups

Japan set 2022 as the “first year for the creation of startups,” and the government formulated a “Five-Year Plan for the Development of Startups” on November 24, 2022 with the goal of increasing investment in startups by 10 times in five years and is now working to create an ecosystem that produces and nurtures startups.

In order to nurture the next generation of industries through the creation and utilization of cutting-edge ICT, MIC plans to begin implementing the “Start-up Creation and Emerging R&D Support Program” in fiscal 2023,

### (5) Promotion of the spread of AI

AI is expected to be linked and networked with other AI, information systems, and other resources over the Internet (AI networking), thereby dramatically increasing both benefits and risks as it spreads widely across space.

“The Conference toward AI Network Society” launched by MIC in October 2016 studied social, economic, ethical, and legal issues for the promotion of AI networking. The conference compiled and released “Draft AI R&D Guidelines for International Discussion<sup>6</sup>” summarizing the matters to be noted in AI development in July 2017 and “AI Utilization Guidelines<sup>7</sup>” summarizing the matters to be noted in AI utilization in August 2019. Since then, a report has been published every year since 2020<sup>8</sup> summarizing ambitious initiatives in AI by companies and other organizations. Under the “Social Principles of Human-Centric AI” (determined by the In-

ty salons, taxis, and other industries highly compatible with JPQR, as well as local government service desks that handle fees for issuing various documents including resident cards. By the end of fiscal 2022, about 14,000 shops in total have introduced JPQR. In fiscal 2023, the payment of local taxes using a unified local tax QR code will start, with the standard for this QR code also being a unified standard of JPQR.

ability of Cloud Services Using AI (ASP/SaaS Edition)” in 2022. Based on this, the ASP-SaaS-AI-IoT Cloud Industry Association (ASPIC) has established and now operates a system whereby a third party certifies whether cloud operators are taking measures in line with the above guidelines, with more than 300 services having been certified so far.

In order to further popularize cloud services, efforts are being made to disseminate and publicize good practices for cloud services in cooperation with industry associations.

which will provide comprehensive support from research and development to commercialization under the shared roles of the public and private sectors.

MIC and NICT also hold “Entrepreneurs' Koshien” and “Entrepreneurs' EXPO” to award and support excellent business plans by students and start-up companies aiming to start their own businesses, with the aim of solving local issues and revitalizing the economy by creating ICT start-ups originating in the region.

egrated Innovation Strategy Promotion Council on March 29, 2019), MIC will continue to work to promote the social implementation of safe, secure, and reliable AI.

MIC has also actively participated in international discussions on AI at G7, OECD, and other international conferences. In particular, the Global Partnership on AI (GPAI), an international initiative established in June 2020 to promote the development and use of responsible AI based on human-centered ideas, held its third annual meeting (GPAI Summit 2022) from November 21 to November 22 in 2022 at Hotel Chinzanso Tokyo. During GPAI Summit 2022, it was also decided that Japan will serve as the Chair for one year beginning in November 2022. Japan will continue to disseminate information through initiatives related to GPAI and actively contribute to international discussions.

### (6) Identification of issues related to the utilization of the metaverse and other resources

Recent increases in the speed of communication and improvements in the rendering performance of comput-

ers have seen the spread of the “metaverse,” a virtual digital space that can be accessed by users through net-

<sup>6</sup> Draft AI R&D Guidelines for International Discussion [https://www.soumu.go.jp/main\\_content/000499625.pdf](https://www.soumu.go.jp/main_content/000499625.pdf)

<sup>7</sup> AI Utilization Guidelines [https://www.soumu.go.jp/main\\_content/000809595.pdf](https://www.soumu.go.jp/main_content/000809595.pdf)

<sup>8</sup> “Report 2020” [https://www.soumu.go.jp/menu\\_news/s-news/01iicp01\\_02000091.html](https://www.soumu.go.jp/menu_news/s-news/01iicp01_02000091.html)

works such as the Internet in order to communicate. Various regions around the country have been reproduced on the metaverse, and even economic activities have been carried out, attracting much attention. Since the metaverse is free from various constraints such as distance, time, and range of activities in cyberspace, it has great potential for social transformation for the future development of Japan, and the market is expected to expand in the future.

With the understanding that it is necessary to promote innovation related to the metaverse and to take measures to ensure that cyberspace is safe and secure while taking care not to become an excessive constraint on its spread, MIC has been holding meetings of the "Study Group on the Utilization of Metaverse in the Web3 Era"<sup>9</sup> since August 2022, in order to identify and

understand what issues related to cyberspace might exist, rather than examining them only after they become problems, with an eye toward the future spread of the metaverse.

With regard to the utilization of virtual spaces such as the metaverse, the study group has been working to resolve issues related to information and communications administration with various use cases in mind in order to gain a clear understanding of users and digital infrastructure environments, with the goal of improving user convenience, providing appropriate and easy access, and creating innovation. In February 2023, the study group released an interim report<sup>10</sup> that summarizes discussions to date. The study group has continued to study the issue since then and the report will be compiled around the summer of the same year.

## 4. Creation of environments where everyone can enjoy the convenience of ICT

In order to make use of digital technologies in a way that leaves no one behind by bridging the digital divide caused by disabilities or age, MIC is actively promoting

### (1) Support for R&D on information accessibility

In order to bridge the digital divide caused by disabilities or age, MIC provides partial subsidies to promote information accessibility in the communication and broadcasting fields. Specifically, the "R&D on Technologies to Bridge the Digital Divide" program provides necessary funds to enterprises conducting R&D on technologies regarding communications and broadcasting services for people with disabilities and the elderly. The subsidy was granted to three entities in fiscal 2022.

Furthermore, based on the Act on Advancement of

### (2) Provision of phone relay service as a public infrastructure

Phone relay services are services where sign language interpreters mediate in communications between persons with hearing impairment (persons having difficulty communicating due to a disability of hearing, language functions, phonetic functions) and persons without hearing impairment by.

In order to ensure the proper provision of phone relay services, the Act on Facilitation of the Use of Telephones for the Persons with Hearing Impairments, etc. (Act No. 53 of 2020) came into effect in December 2020. The ser-

### (3) Improvement to accessibility of public agency websites

In order to facilitate the use of public agency websites by everyone including the elderly and persons with disabilities, MIC formulated "Guidelines for Operation of Public Websites for Everyone (2016 Edition)" in April 2016 to support improving the accessibility of websites of national and local governments and other public orga-

### (4) Support for the use of digital technologies by the elderly and others

In order to bridge the digital divide and create an en-

vironment in which everyone can benefit from digital

Facilitation Program for Disabled Persons' Use of Telecommunications and Broadcasting Services, with a View to Enhance Convenience of Disabled Persons (Act No. 54 of 1993), MIC through NICT provides partial subsidies to promote the provision and development of information accessibility communications and broadcasting to enterprises providing or developing communications or broadcasting services for disabled persons. The subsidy was provided to three entities in fiscal 2022.

vice began operating as a public infrastructure in July 2021 by the Nippon Foundation Telecommunication Relay Service, which is designated as a phone relay service organization. In order to further promote the spread of phone relay services, MIC is working with relevant ministries and agencies to publicize these services, and is cooperating in efforts to conduct phone relay service seminars and registration meetings held nationwide by phone relay service providers. As of the end of fiscal 2022, 12,307 users have been registered.

nizations. In fiscal 2022, MIC conducted a questionnaire survey on the current status of website accessibility at public organizations, conducted a survey on JIS compliance of public organization websites, and held seminars for public organizations at three locations nationwide.

<sup>9</sup> Establishment of the "Study Group on the Utilization of Metaverse Towards Web3 Era" (press release) [https://www.soumu.go.jp/menu\\_news/s-news/01iicp01\\_02000109.html](https://www.soumu.go.jp/menu_news/s-news/01iicp01_02000109.html)

<sup>10</sup> [https://www.soumu.go.jp/main\\_content/000858216.pdf](https://www.soumu.go.jp/main_content/000858216.pdf)



technologies as society as a whole goes increasingly digital, MIC has been engaged in the “Project on Digital Utilization Support for Users” since fiscal 2021. This project provides assistance in the form of training sessions for the elderly and others who are concerned

about using digital technologies, including advice and consultation on online administrative procedures using smartphones. In fiscal 2022, seminars were held mainly at mobile phone shops in 4,804 locations nationwide.

## 5. Promotion of improving literacy for ICT utilization

### (1) Implementation of tests to evaluate the Internet literacy of young people

In fiscal 2011, MIC developed the “Internet Literacy Assessment indicator for Students (ILAS)<sup>11</sup>” to evaluate the online literacy of young people. It is designed specifically to measure the ability to respond to dangers and threats on the Internet, and tests seven risks including risks related to illegal information, inappropriate use, and privacy. A test to measure the Internet literacy of young people has been conducted each year since fiscal 2012, targeting first-year high schools students and oth-

er young people of equivalent age. In fiscal 2022, a total of 15,333 students from 100 schools were tested, and the overall correct answer rate was 71.1%. The correct answer rate for improper use risks (such as walking while using smartphones and violations of manners) was higher than that for other risks at 79.7%, while the correct answer rate for improper transaction risks (such as problems due to phishing or online transactions) was lower than that for other risks at 60.3%.

### (2) Promotion of the spread of community ICT clubs

MIC has been conducting a demonstration project using “community ICT clubs” to provide local children with opportunities to learn applied ICT skills such as programming, and also to contribute to the development of local human resources by setting local issues as topics of study and discussion. Information on activities implemented in various parts of the country throughout fiscal 2018 and 2019 can be found on the project website.

In FY 2022, MIC conducted surveys on how local learning should be conducted in online environments and held online and community exchange meetings for the purpose of sharing information and exchanging opinions among community ICT clubs, with the aim of promoting the spread of these clubs by creating model examples of local online learning.

### (3) Awareness raising to improve literacy for ICT use

In order to raise awareness about the safe use of the Internet by children, MIC runs the “e-Net Caravan,” a series of free onsite lectures held at schools for individuals such as students, parents/guardians, and teachers. MIC also prepares and publishes “Internet Trouble Case Studies,” a document that provides information on preventing trouble on the Internet.

The “Let’s Go Online! Staying Safe and Secure on the

Internet<sup>12</sup>” website was launched in 2021 to raise awareness about safe and secure Internet use. This website is tailored to each generation and contains content for preschoolers and their parents/guardians, young people, parents/guardians and teachers, and the elderly. It also features seasonal topics such as “social media slander,” “measures against Internet piracy,” and “false information and misinformation” to improve literacy.<sup>13</sup>

### (4) Promotion of improving literacy based on the concept of “digital citizenship”

In order to respond to changes in the environment surrounding ICT, such as increasing opportunities to use ICT for a wide range of generations and the emergence of the distribution of false information and misinformation on the Internet, MIC began holding meetings of the “Review Committee on Improving ICT Literacy<sup>14</sup>” in November 2022 and the “Working Group on Improving Juvenile ICT Literacy” in December 2022. The groups have since been studying ways to promote literacy and measures to improve the level of literacy required

of the digital society of the future, based on the concept of “digital citizenship” (engaging autonomously with digital society on one’s own initiative). Based on the discussions of the review committee and working group, a roadmap for identifying the pillars supporting measures that must be taken will be formulated, indicators for measuring proficiency of literacy will be established, and efforts toward developing content to improve literacy will be promoted around the summer of 2023.

<sup>11</sup> [https://www.soumu.go.jp/use\\_the\\_internet\\_wisely/special/ilas/](https://www.soumu.go.jp/use_the_internet_wisely/special/ilas/)

<sup>12</sup> Let’s Go Online! Staying Safe and Secure on the Internet [https://www.soumu.go.jp/use\\_the\\_internet\\_wisely/](https://www.soumu.go.jp/use_the_internet_wisely/)

<sup>13</sup> Refer to Chapter 5, Section 2

<sup>14</sup> Establishment of the “Review Committee on Improving ICT Literacy” (press release) [https://www.soumu.go.jp/menu\\_news/s-news/01ryutsu02\\_02000348.html](https://www.soumu.go.jp/menu_news/s-news/01ryutsu02_02000348.html)

## Section 7 ICT Technology Policy Trends

### 1. Summary

#### (1) Initiatives so far

MIC is promoting technology policy in the information and communications field, focusing on initiatives aimed at Beyond 5G (6G), which is expected to serve as the foundation for all industries and social activities as the next generation of basic information and communications infrastructure to be utilized across national borders.

Specifically, MIC formulated the “Beyond 5G Promotion Strategy” in June 2020, and has been conducting research and development to establish the elemental technologies necessary for the realization of Beyond 5G (6G). Recognizing the importance of strengthening international competitiveness and ensuring economic security for Beyond 5G (6G), the Information and Communications Council has since then been deliberating while sharing the efforts and knowledge of relevant organizations and key stakeholders in Japan, and has been making progress in such initiatives as compiling an in-

#### (2) Future challenges and directions

With regard to Beyond 5G (6G), Japan's ICT industry has not always been able to achieve significant business and business results even though it has established internationally excellent technologies. In addition, from the perspective of ensuring Japan's economic security, demonstrating competitiveness in global markets is an issue that must be addressed. Therefore, efforts must be made to ensure R&D results are utilized globally

from a global perspective (so-called “global first”).

As for R&D in cutting-edge fields such as quantum, AI, and space, early social implementation in society is facing various issues such as establishing ultra-reliable quantum communication technology, realizing simultaneous interpretation in anticipation of the Expo 2025 held in Osaka, and developing advanced space network technology.

terim report on the “Information and Communications Technology Strategy for Beyond 5G” in June 2022. In the “Sixth Science, Technology and Innovation Basic Plan” approved by the Cabinet in March 2021, relevant ministries and agencies are cooperating to promote research and development in advanced fields such as quantum, AI, and space, with the aim of realizing a sustainable and resilient society that ensures the safety and security of citizens. The National Institute of Information and Communications Technology (NICT) is also promoting basic and fundamental research and development in five priority fields (advanced electromagnetic technology, innovative networks, cybersecurity, universal communication, and frontier science) during the period covering the fifth medium-to-long term plan period (April 2021 to March 2026).

from a global perspective (so-called “global first”).

As for R&D in cutting-edge fields such as quantum, AI, and space, early social implementation in society is facing various issues such as establishing ultra-reliable quantum communication technology, realizing simultaneous interpretation in anticipation of the Expo 2025 held in Osaka, and developing advanced space network technology.

## 2. Beyond 5G(6G)

### (1) Domestic and international trends surrounding Beyond 5G (6G)

Major overseas companies now account for a high proportion of the international market share of 5G base stations, and the international competitiveness of Japanese companies is relatively low.

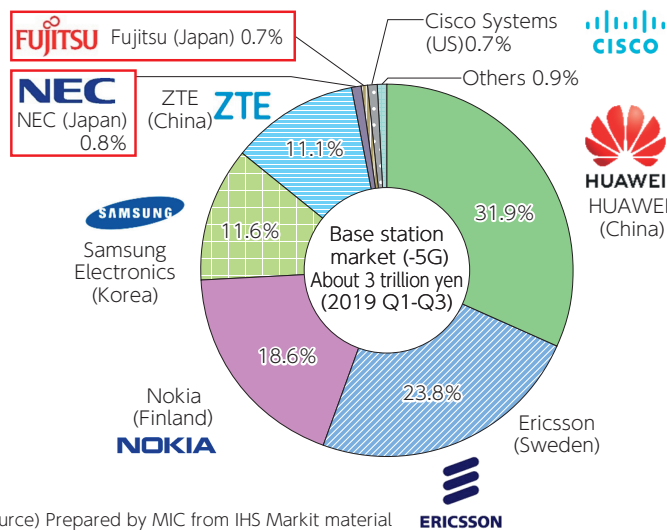
On the other hand, Japanese companies account for

about 30% of the global market share and have competitive potential in the market for electronic components that are also integrated into base stations and smartphones (Figure 5-7-2-1).

Figure 5-7-2-1 International competitiveness in the communications infrastructure market

### Market share of 5G base stations (in amount)

Five companies from China, Europe and Korea have 97% of the global share of portable base stations (in the 1st to 3rd quarters of 2019). **Share of Japanese companies is around 1.5%.**



However, Japanese enterprises **have around 30% global share of electronic components** that are incorporated in smartphone, etc. **They may have potential competitiveness toward Beyond 5G.**  
(Source) JEITA Statistical Handbook 2022-2023

(Source) Prepared by MIC from IHS Markit material

Large-scale government research and development investments and research and development plans have been announced in countries outside of Japan, and global development competition is intensifying in order to secure technological superiority in Beyond 5G (6G).

For example, in the U.S., the “CHIPS and Science Act of 2022,” enacted in August 2022, stipulates that a budget of 20 billion dollars (approximately three trillion yen) will be allocated over the next five years for the development

of advanced technologies including Beyond 5G (6G), AI, and quantum computers. In Europe, the EU plans to spend 900 million euros (approximately 120 billion yen) over seven years from 2021 to 2027 for research and development projects related to Beyond 5G (6G). Countries are making progress in various initiatives, and are expected to actively promote research and development of Beyond 5G (6G) in the future (Figure 5-7-2-2).

Figure 5-7-2-2 Beyond 5G (6G) R&D by the governments of other countries

The United States	●The “CHIPS and Science Act of 2022,” which provides \$52.7 billion (about 7 trillion yen) in support for the production and research and development of semiconductors and <b>\$20 billion (about 3 trillion yen) in support for the development of AI, quantum computers, and advanced technologies such as next-generation communication standards (6G)</b> , was enacted (August 2022)
Europe	<b>EU, Germany and Finland governments invest 1.85 billion Euro (about 240 billion yen) in total in 6G R&amp;D</b> (as of March 2022)
EU	●EU decided 900 million Euro investment in 6G R&D in the next R&D program Horizon Europe (2021-2027) (March 2021) ●SNS JU secured 2 billion euros (about 260 billion yen) in total from the public and private sectors, including the above 900 million euros (March 2022)
Germany	●Decided to invest 700 million Euro in total in 6G technology R&D (2021 to 2025) (April 2021).
Finland	●Started 6Genesis Flagship Program and budgeted 250 million Euro (about 33 billion yen) in eight years from 2019 to 2026 (May 2018)
Russia	●The Skolkovo Foundation announced a project to develop Russian 6G communications devices at the Skolkovo Institute of Science and Technology (Skoltech) and the Radio Research and Development Institute (NIIR), with an investment of <b>30 billion rubles (approximately 64.4 billion yen) from 2023 to 2025</b> (July 2022)
China	●Released a <b>digital economy plan to enhance 6G R&amp;D as part of the 14 th five-year plan</b> (January 2022)
Korea	●Ministry of Science and ICT (MSIT) <b>announced a 6G R&amp;D action plan</b> , including <b>220 billion won (about 21 billion yen) investment by 2025</b> (June 2021).

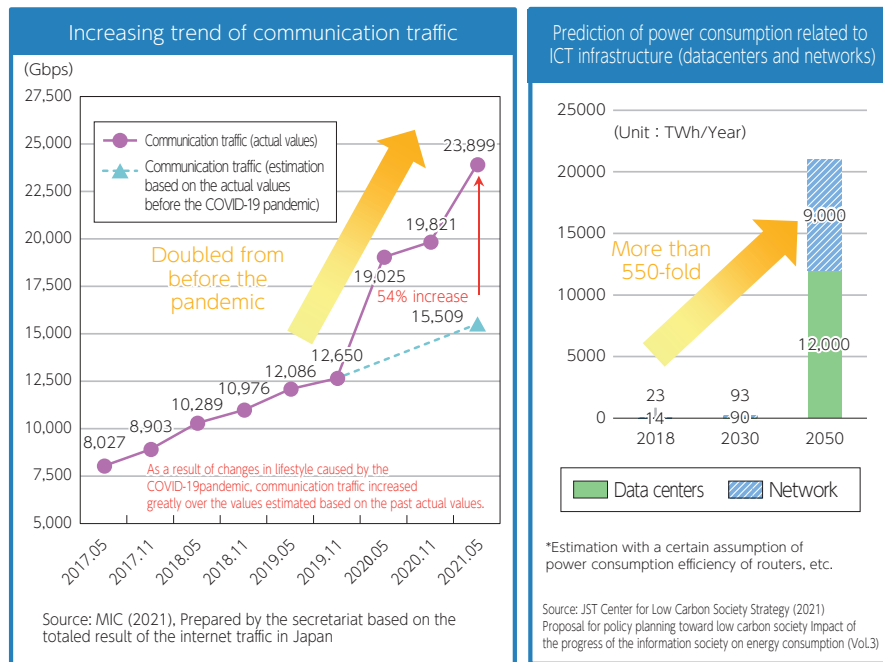
\* The exchange rate at the time of publication was used for yen conversion.

Communications traffic in Japan is on the rise due to the progress of DX and other factors. There are concerns that the power consumption of information and communications networks will increase significantly unless technological innovations are made (Figure 5-7-2-3).

With this in mind, Japan has declared its international commitment to achieve carbon neutrality by 2050 as the need for initiatives to reduce power consumption in the

information and communications field increases. For example, the government as a whole has set a policy of realizing a green and digital society and achieving carbon neutrality in the ICT industry by 2040. Therefore, in developing technologies and constructing networks for the next generation of information and communications infrastructures, it is inevitable to take drastic measures for greening, a global issue.

**Figure 5-7-2-3 Trends of communications traffic and energy consumption in the ICT field**



## (2) Policy trends across government

The Kishida Cabinet has stated that it will accelerate bold investments in ICT and other digital fields by positioning the realization of “new capitalism” and the “Digital Garden City Nation Concept” as policy pillars.

Specifically, studies and implementation have been carried out in cooperation with relevant ministries and agencies at policy meetings such as the “Council for the Realization of New Capitalism” and the “Council for the Realization of the Digital Garden City Nation Concept,” while the “Grand Design and Implementation Plan for New Capitalism 2023 Revised Edition” (approved by the Cabinet in June 2023) and the “Comprehensive Strategy for the Digital Garden City Nation Concept” (approved by the Cabinet in December 2022) have also been formulated. It has been suggested that these will aggressively promote technology strategy and research and development for Beyond 5G (6G).

As a means of promoting the “Digital Garden City Nation Concept,” MIC announced in March 2022 the “Digital Garden City Nation Infrastructure Development

Plan,” which calls for the development of infrastructure such as optical fiber, 5G, data centers, and undersea cables, as well as accelerated efforts in research and development in order to begin operating next-generation Beyond 5G (6G) infrastructures as soon as possible. The revised “Digital Garden City Nation Infrastructure Development Plan (Revised Edition)” was released in April 2023, and the research and development of Beyond 5G (6G) aimed at social and overseas implementation will be aggressively promoted through efforts such as the Beyond 5G (6G) R&D Promotion Project.

The government's overall science, technology, and innovation policy also states that it will promote initiatives such as the fusion of cyberspace and physical space; the maintenance and development of next-generation infrastructures and technologies for Beyond 5G (6G), space systems, quantum technologies, and semiconductors; and research and development toward achieving carbon neutrality as a national strategy.

## (3) Review and formulation of new information and communications technology strategies

Since the formulation of the “Beyond 5G Promotion Strategy” in June 2020, international development competition has intensified, and social issues such as strengthening international competitiveness, ensuring economic security, and the environment and energy

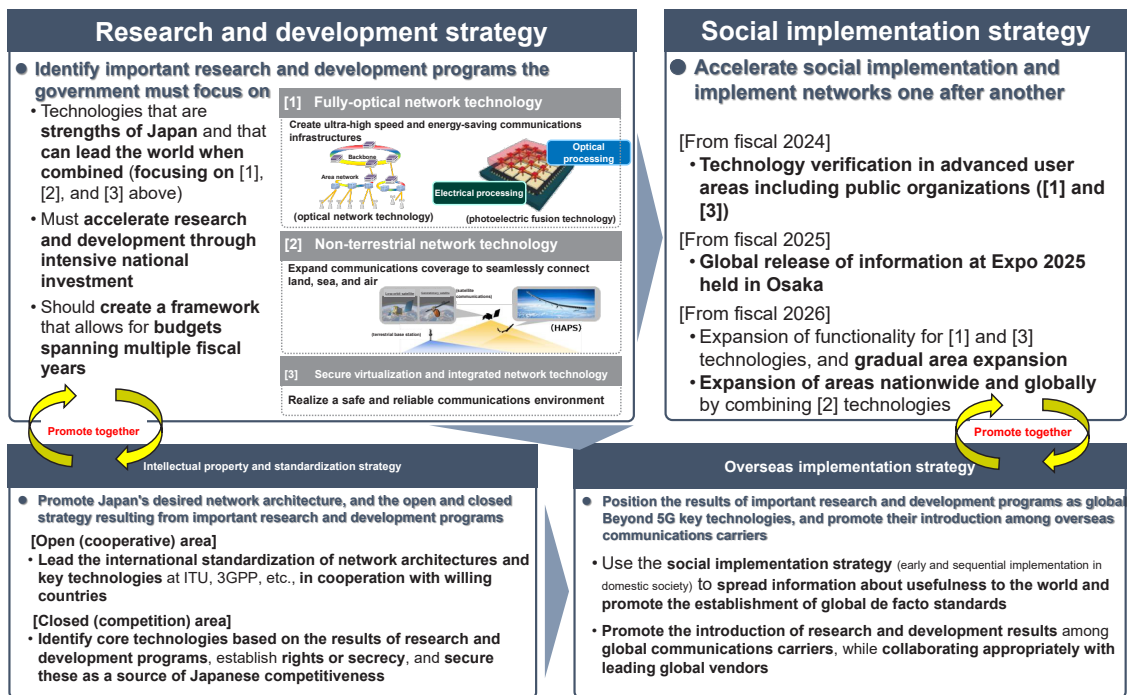
fields have become apparent. For Beyond 5G (6G), there is a growing need for industry, academia, and government to work together in a strategic manner by implementing strategies for research and development, IP, and international standardization that Japan should pursue.

For this reason, MIC consulted with the Information and Communications Council on September 30, 2021 on the “Information and Communications Technology Strategy for Beyond 5G.” The Technology Strategy Committee of the Information and Communications Technology Subcommittee deliberated on R&D, intellectual property, standardization, and other technology strategies while sharing information on the activities of industry, academia, and government (such as the “Beyond 5G Promotion Consortium”) and the efforts and knowledge of various stakeholders (including major companies, universities, and national research and development agencies). An interim report was compiled on June 30, 2022.

The report significantly updates the research and development strategy for the “Beyond 5G Promotion Strategy.” The strategy calls for Japan to take the lead in advanced technology development in order to become a

game changer in the global communications infrastructure market, and to make strategic efforts to survive. It is necessary to consider our strengths, technological difficulties, autonomy assurance, national strategic positioning, and the need for acceleration based on prior investment, and must identify priority technology areas for Beyond 5G (6G) to focus on. Beginning in 2025, it is necessary to set a research and development strategy to work together to establish a framework that allows us to accelerate research and development and set budgets spanning multiple fiscal years, a social implementation strategy to take the results of important research and development projects and implement them into domestic networks and invest in the market, an intellectual property and standardization strategy focused on an open and closed strategy, and an overseas implementation strategy to set global de facto standards as quickly as possible (Figure 5-7-2-4).

Figure 5-7-2-4 Strategy to accelerate research and development and social implementation of Beyond 5G (6G)



#### (4) Establishment of new funds to strengthen Beyond 5G (6G) research and development

In order to establish the elemental technologies necessary for the realization of Beyond 5G (6G), MIC has been providing research and development support to companies, universities, and other organizations through a time-limited Research and Development Fund (third supplementary budget of fiscal 2020) established at NICT based on the “Act Partially Amending the Act on the National Institute of Information and Communications Technology” in February 2021, and has been working to develop common facilities and equipment such as test beds.

Taking into account the further intensification of in-

ternational development competition for Beyond 5G (6G), the progress of Beyond 5G research and development promotion projects, and the interim report of the Information and Communications Council in June 2022, the “Act Partially Amending the Act on the National Institute of Information and Communications Technology and Radio Act” (Act No. 93 of 2022) was enacted during the extraordinary Diet session in the fall of 2022 and came into effect on December 19 of the same year, enabling NICT to establish a permanent fund (the ICT Research and Development Fund) and to allocate radio wave usage fee resources to the fund (Figure 5-7-2-5).

**Figure 5-7-2-5 Act Partially Amending the Act on the National Institute of Information and Communications Technology and Radio Act**

**Act Partially Amending the Act on the National Institute of Information and Communications Technology and Radio Act** (Act No. 93 of 2022)

[Related to supplementary budget, enacted on December 2, 2022]

- In order to promote the creation of innovative information and communications technologies that will serve as the foundation for Japan's economic and social development in the future, NICT will establish a research and development fund.

\*NICT: National Institute of Information and Communications Technology

**1. Summary of revisions**

**(1) Revision to the Act on the National Institute of Information and Communications Technology**

Stipulates that NICT establish a fund (ICT Research and Development Fund) to be allocated to cover costs required for research and development through public recruitment for the creation of innovative information and communications technologies.

\* Major revisions: Establishment of fund, separate accounting of fund operations, report to the Diet each fiscal year, abolition of the current time-limited fund

**(2) Revision to the Radio Act**

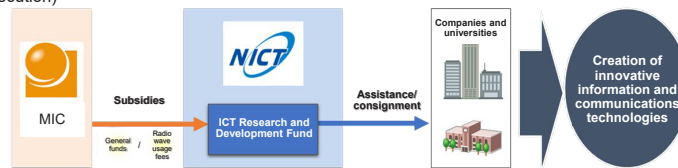
Clarifies that subsidies for research and development that contribute to the effective use of radio waves financed by radio wave usage fees may be allocated to the fund, and stipulates that the remaining amount of the fund and other usage of the fund be studied and publicized each fiscal year.

**2. Effective date**

The date specified by Cabinet Order (December 19, 2022) within a period not exceeding one month from the date of official announcement (December 9, 2022).

Provided, however, that the revision pertaining to the abolition of the current time-limited fund shall be made on the date specified by Cabinet Order within a period not exceeding six months from April 1, 2024.

(Execution)



**(5) Implementation of the Beyond 5G R&D Promotion Project**

Through the Innovative Information and Communications Technology (Beyond 5G (6G)) Fund project to be newly implemented by the above mentioned fund, R&D with the aim of social implementation and overseas expansion will be strongly promoted mainly in the following key technology fields based on the above mentioned interim report of the Information and Communications Council, and the development results will be gradually implemented in society from 2025 onward.

- (1) Fully-optical network technology to bring ultra-high speed, ultra-low delay, and ultra-low power consumption to communications infrastructures
- (2) Non-terrestrial network (NTN) technologies such as satellites and HAPS to expand communications coverage in a way that seamlessly connects land, sea, and air
- (3) Secure virtualization and integrated network technology to ensure secure and reliable communications environments for users

In implementing the above funding project, MIC will focus on strategic research and development projects with a strong focus on social implementation and overseas implementation by making drastic development investments (including self-investment by companies), while keeping in mind the goal of technologies being

utilized throughout the world (“global first”) instead of the conventional idea of research and development itself being the main purpose or activities being centered on the domestic market.

In order to promote this funding project in an effective manner, the “Innovative ICT Project Working Group” composed mainly of outside experts specializing in management and business was newly established under the Information and Communications Council (Information and Communications Technology Subcommittee, Technology Strategy Committee) to examine how to appropriately evaluate and monitor research and development projects from a business perspective, and compiled “Recommendations on Conducting Appropriate Business Evaluations for the Beyond 5G R&D Promotion Project” on March 10, 2023.

MIC plans to establish related technologies over the next five years while monitoring progress appropriately, based on this report. MIC will also strive to improve the environment supporting Japanese companies competing in the global market by promoting international standardization and creating international consensus and rules, in order to more easily implement research and development results overseas.

**(6) Promotion of the acquisition of IP and international standardization for Beyond 5G (6G)**

The “Beyond 5G New Business Strategy Center” was established in December 2020 to strategically promote international standardization and the acquisition of intellectual property by industry, academia, and government. The center promotes the dissemination of information through conducting seminars on new business strategies and the development of human resources through workshops for young management candidates

within companies. Efforts are also being made to establish an information infrastructure for future standardization, such as building an IP landscape to analyze the status of IP acquisition. MIC will engage in further analysis to promote IP and international standardization of Beyond 5G (6G) by utilizing the IP landscape announced in the interim report (June 30, 2022).

In order to promote international standardization ac-

tivities from the early stages of research and development, international joint research is now being conducted with national and regional research institutions that are strategic partners that can be expected to provide synergy. Specifically, MIC began offering research and development funding for joint research with U.S. research institutes in fiscal 2016, and with German research institutes in fiscal 2019. In fiscal 2023, a total of three international joint research projects are now under way to develop and demonstrate technologies that will lead to the creation of use cases for more advanced use of 5G. Joint research projects on wireless link technology and 3D spatial data compression technology are being conducted between Japan and the U.S., while a joint research project on wireless communication technology in the manufacturing field is being conducted between Japan and Germany.

Furthermore, the “Beyond 5G Promotion Consortium” (established in December 2020 to aggressively and actively promote Beyond 5G [6G] in cooperation

with industry, academia, and government) produced the “Beyond 5G White Paper” in March 2022, summarizing usage methods and performance targets for Beyond 5G, and then conducted additional interviews with various industries in March 2023 and published an updated 2.0 edition. Based on the results of the study on future technological trends and prospects of IMT summarized in the white paper, MIC has been promoting international standardization activities since the 38th meeting of ITU-R SG5 WP5D, such as continuing to submit contributing documents. The “Open RAN Promotion Subcommittee” was also established in March 2022 to discuss various issues related to Open RAN, with the goal of spreading and promoting Open RAN in Japan and helping domestic companies to expand overseas. The “Beyond 5G International Conference” was also held in October 2022 to strengthen cooperation between domestic and international stakeholders, and a memorandum of cooperation was signed<sup>1</sup> with three new organizations in fiscal 2022.

### 3. Quantum technology

#### (1) Quantum security network policy trends

Quantum technology is an innovative technology that will dramatically and discontinuously develop future societies and economies. It is also crucially important for economic security. Other countries, especially the U.S., European countries, and China are significantly increasing research and development investments in this technology and making strategic efforts including development of research and development sites and human resources.

Based on the “Quantum Technology Innovation Strategy” (decided by the Integrated Innovation Strategy Promotion Council in January 2020), the “Vision for the Quantum Future Society (a future society vision to realize through quantum technology, and strategies to real-

ize this)” (decided by the Integrated Innovation Strategy Promotion Council in April 2022), and the “Quantum Future Industry Creation Strategy” (decided by the Integrated Innovation Strategy Promotion Council in April 2023), the government as a whole will support activities to strengthen research and development and commercialization in each technology area (such as quantum computers, quantum software, quantum security/networks, quantum measurement/sensing, and quantum materials), and will promote fundamental initiatives to create innovation (such as the formation of bases where industry, academia, and government work in unison from basic research to technology demonstration and human resource development).

#### (2) Research and development on quantum cryptographic communications technologies

There are concerns that modern encryption methods will be rendered useless in the age of quantum computers. Therefore, it is necessary to establish quantum cryptography that generally cannot be deciphered by any computer. MIC in collaboration with NICT is promoting research and development on quantum cryptographic communications technologies (quantum key

distribution technologies), while at the same time establishing a “Quantum Security Hub” for the quantum security and network technology area at NICT based on the Quantum Technology Innovation Strategy in fiscal 2021 and tackling a broad range of activities including social implementation through construction and use of test beds and human resource development.

##### a Research and development on distance extension and networking of quantum cryptographic communications

One major issue with realizing the social implementation of quantum cryptographic communications is extending communications distances. With the aim of tackling the challenge of extending distances and developing global quantum cryptographic communications network, MIC has been engaged in research and development projects on linking and relaying terrestrial quantum encryption communications over long distances,

since fiscal 2020. Since fiscal 2018, MIC has been engaged in research and development on using quantum cryptographic communications in microsatellites, with the aim of building secure satellite communications networks. Furthermore, in fiscal 2021, research and development for the construction of a global-scale quantum cryptographic communications network integrating terrestrial and satellite-based networks began.

<sup>1</sup> Signed with the 6G Smart Networks and Services Industry Association (Europe) and Next G Alliance (U.S.) in May 2022, and Northeastern University (U.S.) in November of the same year.

#### b Development of test beds for quantum cryptographic communications and promotion of social implementation

In Japan, NICT has been engaged in research and development of elemental technologies for quantum cryptographic communications since early on. In order to verify the principles of quantum cryptographic communications, NICT constructed a quantum cryptographic communications test bed called “Tokyo QKD Network” in 2010 and has been operating it since then. The basic specifications of quantum encryption communications devices developed based on the long-term operation of Tokyo QKD Network were adopted as international standards (ITU-T Y.3800 series) in 2020, which shows its high international competitiveness.

Because quantum cryptographic communications are expected to be used in financial, medical, and other commercial services in addition to use in public organizations handling confidential information, there are strong demands for its early practical application. With the aim of accelerating social implementation through verification of use in actual environments, MIC began working to develop broad-area test beds for quantum cryptographic communications in fiscal 2021, which are capable of demonstrating network architectures including routing control with architecture connecting multiple sites.

#### c Research and development for realizing the quantum Internet

The quantum Internet is the ultimate form of a quantum network that allows for communications in a quantum state. It is expected to become the communications technology that underlies the utilization of various quantum technologies such as secure communications, increases in computing power and distributed quantum computer enabled through increasing the number of

qubits by connecting multiple quantum computers, and network connections of quantum sensors. In fiscal 2023, MIC began research and development efforts on elemental technologies to maintain the quantum state and realize stable long-distance quantum communications, in order to realize the quantum Internet.



**Figure (related data) Global quantum cryptographic communications network**

URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00387](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00387)  
(Data collection)

## 4. AI technologies

Beginning with the advent of deep learning in 2006, the third AI boom has led to dramatic technological innovations in areas such as image recognition and natural language processing. In 2022, generative AI, which can automatically generate images and sentences based on learning data,<sup>2</sup> began to be put to actual use and is now showing signs of revolutionizing a wide range of industries.

Based on “AI Strategy 2022” (decided by the Integrated Innovation Strategy Promotion Council in April 2022), MIC is now working extensively on research and development projects and the social implementation of natural language processing technology, multilingual translation and speech processing technology, distributed federated machine learning technology, and brain cognitive model construction in cooperation with NICT, a core AI-related center.

For example, MIC is working with NICT on the research and development of multilingual translation technology to eliminate language barriers and realize the free exchange of information on a global basis. By utilizing NICT’s multilingual translation technology incorporating the latest AI technology, practical level translation accuracy has been achieved in 17 languages for use in dealing with foreign visitors, foreign residents, and diplomatic situations. MIC and NICT are also promoting social implementation of multilingual translation technology. NICT provides “VoiceTra” as a research application targeting independent travelers. More than 30 private-sector services have been developed<sup>3</sup> through technology transfers and are now being used in a variety of fields including disaster management, transportation, and medical care in addition to government offices.



**Figure (related data) Multilingual translation technology**

URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00388](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00388)  
(Data collection)

In order to prepare for Expo 2025 held in Osaka, MIC formulated the “Global Communication Plan 2025” in

March 2020 to further advance NICT’s multilingual translation technology. Based on this plan, MIC has

<sup>2</sup> 2022 saw the emergence of “Stable Diffusion” (an AI that can automatically generate images) and “ChatGPT” (an AI that can automatically generate sentences).

<sup>3</sup> Global Communication Development Promotion Council, examples of products/services of private enterprises using the multilingual translation technology of the National Institute of Information and Communications Technology (NICT): [https://gcp.nict.go.jp/news/products\\_and\\_services\\_GCP.pdf](https://gcp.nict.go.jp/news/products_and_services_GCP.pdf)



been developing a computer environment for NICT to conduct world-class AI research and development, and has been conducting research and development since fiscal 2020 to upgrade the technology (which used to be

limited to the sequential translation of short sentences) to allow for simultaneous interpretation to be performed during business and international conference discussions.



**Figure (related data) Efforts to further advance multilingual translation technology**

URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00389](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00389)  
(Data collection)

In addition to research and development on multilingual simultaneous interpretation, four additional lan-

guages will be added in order to deal with foreign visitors, foreign residents, and refugees from Ukraine.

## 5. Remote sensing technologies

NICT is conducting research and development on remote sensing technology to observe rainfall, water vapor, wind, and ground surface conditions with high temporal and spatial resolution, with the goals of quickly identifying sudden atmospheric phenomena such as linear precipitation zones and torrential downpours, helping clarify how these develop, and quickly determining damage during disasters.

In addition to conducting research and development on developing Dual Polarization Multi-Parameter Phased Array Weather Radar (MP-PAWR), which is capable of

three-dimensional observation of rain clouds at high speed and high accuracy, and on promoting the utilization of data, research and development on technologies for estimating the amount of water vapor in the atmosphere using the propagation delay of terrestrial digital broadcasting waves, wind profiler technology to observe the wind velocity in the sky, and ground-based water vapor and wind lidar technology using an eye-safe infrared pulsed laser to simultaneously observe water vapor and wind are being promoted.



**Figure (related data) Development of water vapor observation network in linear precipitation zone: Efforts to improve the accuracy of short-time rainfall forecasting**

URL: <https://www.nict.go.jp/press/2022/06/29-1.html>

## 6. Space ICT

According to the Basic Space Plan based on the Basic Space Act (Act No. 43 of 2008) and its schedule, MIC is promoting the following research and development efforts related to space development and use.

- (1) R&D of radio-optical hybrid communications technology for small satellite constellations and wireless communications technology using unused frequencies for space networks, in order to realize ultra-wide-band satellite optical communications systems through effective use of frequency resources
- (2) R&D to establish core technologies for quantum cryptography in satellite communications and realize a global quantum cryptographic communications network through satellite networks, etc.
- (3) R&D of technology to explore water energy resources on the lunar surface, to contribute to the international space exploration project (Artemis Program) proposed by the U.S.
- (4) R&D of satellite communications system for Engineering Test Satellite-9 and optical communications technology to enable ground-satellite optical

data transmission at 10 Gbps

- (5) Development of space environment monitoring sensor technology to observe and analyze ionosphere, magnetosphere, and solar activities, to be used for space weather forecasting under 24-hour, 365-day human-crewed operation and to be mounted on the successor to the Himawari geostationary meteorological satellite

The importance of space weather forecasting is growing, especially for companies responsible for the stable operation of social infrastructures such as power, communications, broadcasting, and aviation. In light of the fact that solar activity is expected to increase, MIC held the “Study Group on the Advancement of Space Weather Forecasting” (January to June 2022), and compiled a report on proposals to enhance warning systems and effectively deal with impacts on social infrastructures. Based on this report, MIC is now considering and introducing new forecast and warning standards that take social impacts into account.



**Figure (related data) Impact of solar flares on the Earth**

Source: MIC, Material of the Study Group on the Advancement of Space Weather Forecasting (the 1st session)  
URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00390](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00390)  
(Data collection)

# Policy Focus Achieving Beyond 5G (6G)

## 1. Expectations and social implementation of Beyond 5G (6G)

### (1) About Beyond 5G (6G)

The mobile communication system in Japan has undergone a generational change from the first generation (1G) to the fifth generation (5G) in about 10-year cycles. 4G is now widely used as a commercial service, while 5G commercial service was launched in 2020 and its use continues to spread. Beyond 5G (6G) is expected to

serve as the next generation of information and communications infrastructure for a wide range of industrial and social activities in the 2030s. Rather than being an extension of wireless communications, Beyond 5G (6G) is considered to be an entire network encompassing wired and wireless; and land, sea, air, and space.



**Figure (related data) Beyond 5G (6G) features**  
 URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00391](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00391)  
 (Data collection)

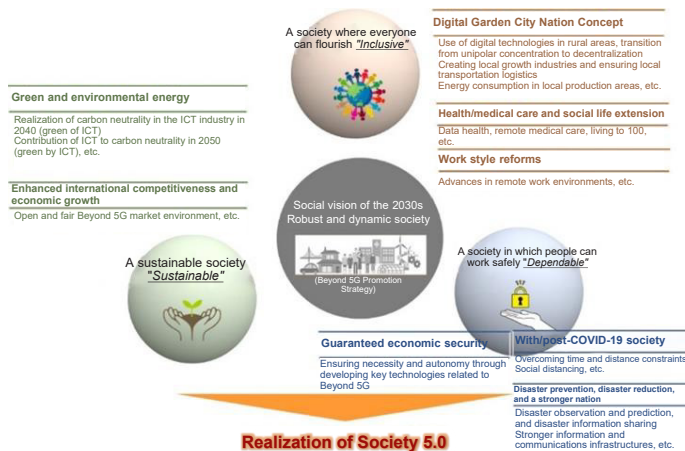
### (2) Society in the 2030s

Beyond 5G (6G) is expected to become a reality in the 2030s, with the aim of creating a resilient and vibrant society in which citizen's lives and economic activities can be maintained smoothly. Specifically, this calls for (1) an inclusive society in which everyone can play an active role, (2) a sustainable society in which people can grow, and (3) a dependable society in which people can live and work with ease. In light of the government's na-

tional strategy and Japan's social issues, these social goals are illustrated in **Figure 1**.

In order to achieve such a society, **Figure 2** shows the issues and future vision for the 2030s in a wide range of industries, not limited to the information and communications field, and identifies and arranges a wide range of information and communications usage scenes involving many industries and uses.

**Figure 1 Society of the 2030s realized through Beyond 5G (6G)**



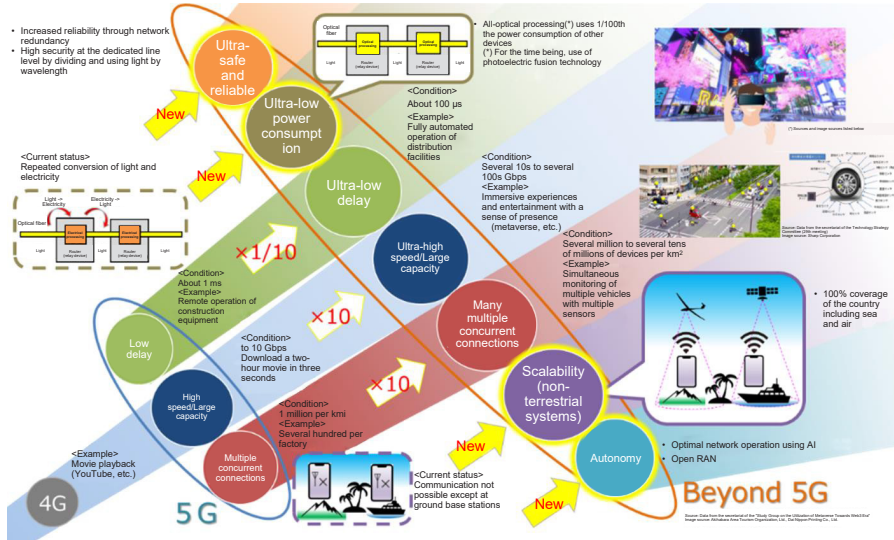
**Figure 2 Beyond 5G (6G) use cases**

Finance	Construction, real estate	Logistics, transportation	ICT	Media	Energy, resources
<ul style="list-style-type: none"> <li>More services going online and cashless, digital conversion of contact points with all customers</li> <li>Cooperation and accommodation with high-value-added businesses and other industries through the use of AI and transaction data</li> </ul>	<ul style="list-style-type: none"> <li>Remote collaboration and robot remote control using VR technology</li> <li>Maintenance management and monitoring through IoT and wireless sensing</li> </ul>	<ul style="list-style-type: none"> <li>Tracking and managing packages in warehouses and logistics, and autonomous and drone operations for machinery and robots</li> <li>Logistics support including maritime routes using satellites and HAPS</li> <li>Seamless flight and railway transfers, automatic operation, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Digital technologies that leave no one behind</li> <li>Real experiences using avatars, etc., and high-precision demand forecasting and supply optimization using AI</li> <li>Autonomous and resilient networks using AI</li> </ul>	<ul style="list-style-type: none"> <li>Immersive media experiences, including body ownership experiences</li> <li>Personalization of individual viewing environments, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Immersive remote control and automation for safe on-site resource extraction and processing</li> <li>Infrastructures for common use of recycled data, etc.</li> </ul>
<b>Beyond 5G serving as the foundation for all industrial and social activities in the 2030s</b>					
<ul style="list-style-type: none"> <li>Support of safe driving through use of high-precision vehicle detection and prediction</li> <li>Creation of dynamic maps using real-time images of road and traffic conditions</li> </ul>	<ul style="list-style-type: none"> <li>Ultra-fast large-capacity services</li> <li>Services requiring ultra-low latency</li> <li>Services where many IoT sensors are connected simultaneously</li> <li>Freedom from time and place constraints</li> <li>Stable and secure provision of quality of service required by users</li> </ul>				<ul style="list-style-type: none"> <li>Unmanned factories using IoT and robots</li> <li>High-precision remote control of machinery using XR, etc.</li> <li>Smart farming through use of automation, advanced functions, and remote control of farming equipment</li> </ul>
<ul style="list-style-type: none"> <li>Automatic operation of unmanned tractors and control and remote monitoring of agricultural chemical spraying devices</li> <li>Remote monitoring of crops and livestock by sensors, cameras, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Advances in transportation and delivery to ensure convenience in all regions</li> <li>Acquisition, linking, and distribution infrastructures of data throughout supply chains</li> </ul>	<ul style="list-style-type: none"> <li>Remote surgery using high-resolution video and communications technology</li> <li>Real-time acquisition of biometric information using sensors, and health management using AI diagnosis</li> </ul>	<ul style="list-style-type: none"> <li>One-stop administrative systems with Uls to allow users access to procedures from anywhere</li> <li>Remote education with a sense of presence using XR, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Disaster prediction systems, rescue and evacuation training support systems, and evacuation guidance systems</li> <li>Use of HAPS, etc. to ensure communications in the event of disasters</li> </ul>	<ul style="list-style-type: none"> <li>Development of smart cities and the elimination of the digital divide through the use of communications infrastructures that use HAPS, etc. to cover land, sea, and air</li> <li>Remote control of activities in outer space from the ground, etc.</li> </ul>
Food, agriculture	Distribution, retail, wholesale	Medical	Public, government, education	Disaster prevention, local communities	Space, HAPS

In order to realize these use cases, solve various social problems, and realize a vibrant society, it is essential to develop technology for Beyond 5G (6G), which is expected to become the foundation of all industries and societies in the future. In addition to further upgrading

5G features (high speed and high capacity, low latency, and multiple simultaneous connections) new features such as ultra-low power consumption, scalability of communications coverage, autonomy, and high safety and reliability are expected (Figure 3).

Figure 3 Features and use scenes realized by Beyond 5G (6G)



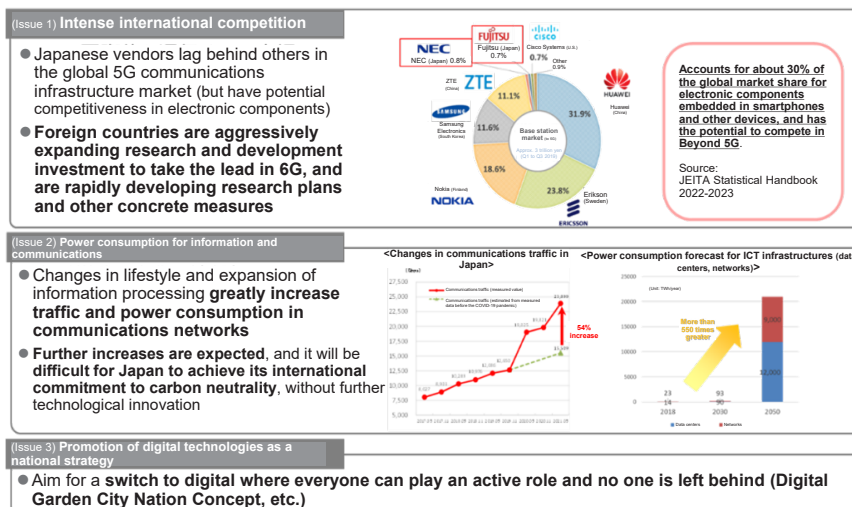
## 2. Challenges for Beyond 5G (6G)

Major overseas companies now account for a high proportion of the international market share of 5G base stations, and the international competitiveness of Japanese companies is low. Large-scale government research and development investments and research and development plans have been announced in countries outside of Japan, and global development competition is intensifying in order to secure technological superiority in Beyond 5G (6G).

Communications traffic in Japan is on the rise, and there are concerns that the power consumption of information and communications networks will increase significantly unless technological innovations are made.

It will be important as a part of national strategy to deliver the benefits of Beyond 5G (6G) to citizens in order to switch to digital technologies in a manner where everyone can play an active role and no one is left behind (Figure 4).

Figure 4 Major challenges for Beyond 5G (6G)



## 3. The ideal Beyond 5G (6G) network


Beyond 5G (6G) should not be regarded as an extension of current mobile communications (wireless communications) technologies and systems, but as an inte-

grated network that includes data centers, devices, and terminals, and that encompasses wired and wireless; optical and radio wave; and land, sea, air, and space.

Innovative next-generation communications infrastructures that offer high speed, high capacity, low latency, high reliability, and low power consumption will be realized by tightly coupling fully-optical networks (fixed networks) with mobile networks, while making broad use of photoelectric fusion technology. It would also be seamlessly coupled with non-terrestrial networks such as satellites and HAPS to greatly expand communication coverage. Integrated networks capable of securely and optimally controlling these will be created by utilizing virtualization technology and other relat-

ed technologies.

By aiming for such a Beyond 5G (6G) network, Japan will lead the global market, contribute to carbon neutrality by reducing the power consumption of entire communications networks, and realize a Digital Garden City Nation infrastructure that can cover a wide area of the country, including land, sea, and air. Strategic efforts are therefore needed to ensure that Japan remains a game-changer and winner in the global communications infrastructure market.



**Figure (related data) The ideal Beyond 5G (6G) network**  
 Source: Information and Communications Council, Summary of the interim report on the “Information and Communications Technology Strategy for Beyond 5G”  
 URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00396](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00396)  
 (Data collection)

## 4. Initiatives to realize Beyond 5G (6G)

### (1) Technology strategies to focus on research and development, social implementation, and overseas implementation of Beyond 5G (6G)

In order to promote initiatives to implement Beyond 5G (6G), MIC consulted with the Information and Communications Council in September 2021 on the “Information and Communications Technology Strategy for Beyond 5G,” and an interim report was compiled in June

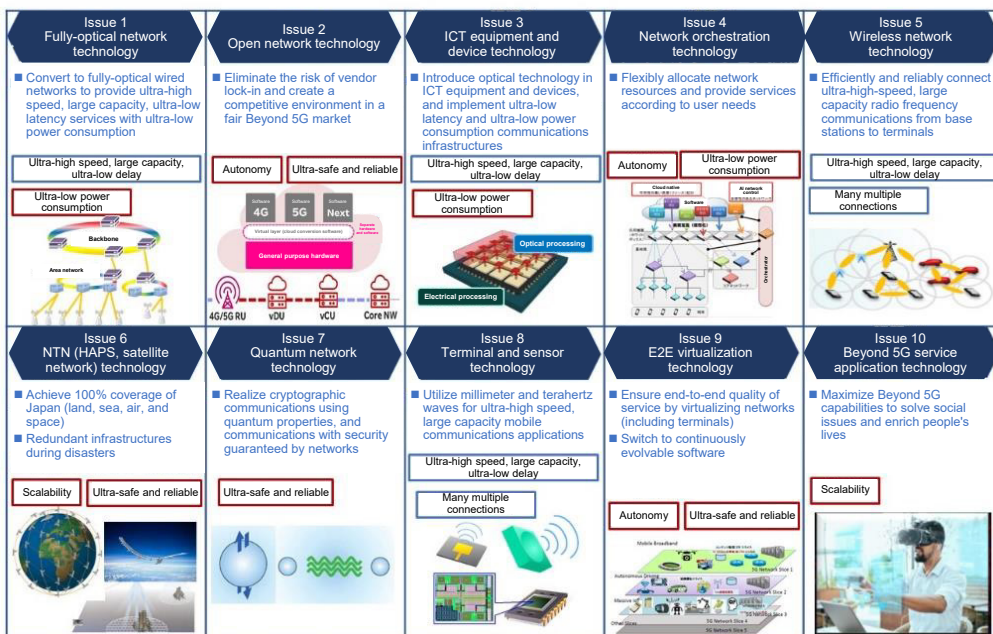
2022. The report presents four strategies: a research and development strategy, social implementation strategy, intellectual property and standardization strategy, and overseas implementation strategy.

#### a Research and development strategy

As shown in **Figure 5**, this report summarizes 10 Beyond 5G (6G) research and development issues to be addressed by industry, academia, and government, based on the ideal Beyond 5G (6G) network and Japan's strengths. Technologies related to fully-optical networks, non-terrestrial networks, and secure virtualization and integrated networks have also been set as priority technology areas from the perspectives of Japan's

strengths, technological difficulties, autonomy assurance, national strategic positioning, and the need for acceleration based on prior investment. Research and development will be promoted strategically by concentrating national funds around these priority technology areas and working together to create a framework that allows for budgets spanning multiple fiscal years.

**Figure 5 10 Beyond 5G (6G) research and development issues for industry, academia, and government**



**b Social implementation strategy**

Our social implementation strategy is to apply what is learned in these priority technology areas in domestic networks and to bring these to market beginning in

**c Intellectual property and standardization strategy**

MIC will promote international standardization and intellectual property acquisition through an open and closed strategy, focusing on priority technology areas. In the open (cooperative) area, we will promote the international standardization of network architecture and key

**d Overseas implementation strategy**

MIC will define results in priority technology areas as global Beyond 5G key technologies, promote the implementation of these technologies in domestic society at an early stage, and communicate the usefulness of these technologies to the world as quickly as possible in order

Together, these four strategies will serve to accelerate the research and development and social implementa-

2025. Realize the Beyond 5G (6G) migration scenario, share the results globally with industry, academia and government, including the Osaka and Kansai Expo.

technologies in cooperation with willing countries based on the promotion of open architectures that lead to the creation of diverse businesses. In the closed (competitive) area, we will promote rights and secrecy of core technologies as a source of Japan's competitiveness.

to promote the creation of global de facto standards. By working strategically with major global vendors, MIC will also encourage the adoption of these standards among global communications carriers.

tion of Beyond 5G (6G).



**Figure (related data) Strategy to accelerate research and development and social implementation of Beyond 5G (6G)**

URL: [https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data\\_collection.html#f00398](https://www.soumu.go.jp/johotsusintokei/whitepaper/eng/WP2023/data_collection.html#f00398)

(Data collection)

**(2) Establishment of promotion system by industry, academia, and government**

Established in December 2020 by industry, academia, and government, the “Beyond 5G Promotion Consortium” continues to work on various initiatives. The consortium is working to develop white papers by examining use cases, concepts, and technical challenges for Beyond 5G (6G), and is working to strengthen international cooperation and dissemination through international conferences.

The “Beyond 5G New Business Strategy Center” was established in December 2020 as a framework to pro-

mote intellectual property and standardization strategies by industry, academia, and government. Based on a report released by the center, the report of the Information and Communications Council incorporated an international standardization roadmap and IP landscape for Beyond 5G. The center also holds seminars to disseminate information and conducts workshops to develop human resources to lead efforts in acquiring intellectual property, and setting standards.

**(3) Sharing of an international vision (G7 Digital and Tech Ministers' Meeting)**

In developing technology for Beyond 5G (6G), MC will focus on supporting research and development aimed at social implementation and overseas implementation. As for the latter, it will be important to create an environment in which technologies developed by Japan are widely accepted internationally.

MIC has therefore been working to disseminate Japan's vision of Beyond 5G (6G) through intergovernmental dialogue with countries such as the U.S., the EU, Germany, and Singapore in order to gain the understanding and approval of the international community. Japan has been pursuing dialogue with the aim of securing a leading position in the world in areas such as extremely energy-efficient photoelectric fusion technology that contributes to the realization of both DX and GX, and the promotion of open and interoperable networks.

“The G7 Digital and Tech Ministers' Declaration” was adopted during the “G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma” chaired by Japan, held in April 2023, with the understanding and support of each participating country following discussions on building secure and resilient network infrastructures. Based on Japan's vision for Beyond 5G (6G), this declaration formulated a vision for the future of next-generation wireless and wired networks, and represents an agreement reached on the G7 Action Plan for Building a Secure and Resilient Digital Infrastructure.

MIC will steadily take measures in such way that the government and the private sector work together to develop Beyond 5G (6G), and then to implement it throughout society and overseas.

## Section 8 Promotion of International Strategies for ICT

### 1. Summary

#### (1) Initiatives so far

Based on the government's "Infrastructure System Overseas Promotion Strategy 2025" (decided by the Infrastructure Strategy Economic Cooperation Meeting on December 10, 2020) and the "MIC World Development Action Plan 2025" (formulated by MIC on July 21, 2022), MIC has worked vigorously for the overseas implementation of ICT infrastructure systems through total support for enterprises, which includes human resource development, maintenance, and finance in accordance with the implementation stage (project identification, proposal, and formation).

MIC has also contributed to the formation of interna-

tional frameworks through active participation in discussions on digital economy and the establishment of international rules in the ICT field, by taking opportunities for bilateral policy dialogues with the U.S. and other countries, and multilateral talks including G7 and G20.

As digital infrastructures such as optical undersea cables and 5G networks have become part of the basic infrastructure supporting citizen's lives and economic activities, efforts have also been made to ensure safety and reliability through international cooperation, from the viewpoint of economic security.

#### (2) Future challenges and directions

The transition of society and economy to digital is accelerating in the wake of the COVID-19 pandemic, and there is an increasing need for digital solutions that are effective in improving and upgrading communications networks and solving problems. The importance of high-quality infrastructures has come into focus as discussions on economic security have intensified. Under such circumstances, the implementation of high-quality Japanese infrastructures overseas utilizing bilateral and multilateral frameworks will contribute to solving not only the social issues of each country but also global issues such as climate change, and will further contribute to achieving SDGs. It is also important for the economic development of Japan to increase our international competitiveness and demonstrate our presence through the spread and development of Japanese digital technologies.

MIC is now working to implement digital technologies overseas and to establish international frameworks in the digital field through international cooperation, with the aim of strengthening the international competitiveness of Japan's digital technologies and solving global social challenges. As a means of promoting "MIC World Development Action Plan 2025," an emphasis will be placed on the implementation of one-stop ICT solutions in the medical and agricultural fields, in addition to ICT infrastructure systems such as 5G and optical undersea cables. It is necessary to contribute to global economic development and solving global social issues by utilizing Japanese technology and experience. Furthermore, in order to take a leading role in establishing international rules in the digital field, it is necessary to actively participate in international discussions at international conferences and other meetings.

### 2. Overseas implementation of digital infrastructures

In light of the growing need for communications infrastructure and services worldwide amid the transition of society and the economy to digital, MIC is promoting support for the overseas implementation of digital infra-

structures and other services with the aim of strengthening the international competitiveness of Japan's digital industries and promoting the use of digital technologies to solve global problems.

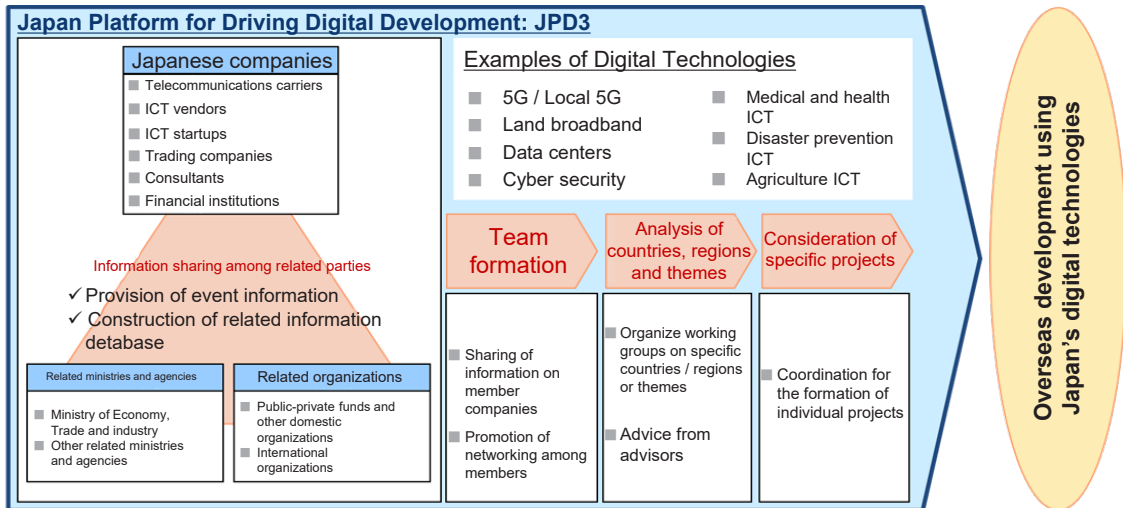
#### (1) Overseas implementation of support tools at MIC

MIC provides support for the overseas implementation of high-quality Japanese digital infrastructure in accordance with each phase from basic research to demonstration projects, taking into account each country's circumstances and challenges.

In February 2021, MIC established the "Japan Platform for Driving Digital Development," a public-private cooperation framework to support the implementation

of Japanese ICT overseas under MIC's initiative (**Figure 5-8-2-1**). As of January 2023, over 100 members including Japanese ICT-related companies and relevant ministries, agencies, and organizations participated in the framework to share information on countries and regions (51 countries and one organization) in databases, hold workshops, form teams, and discuss specific projects.

Figure 5-8-2-1 Japan Platform for Driving Digital Development



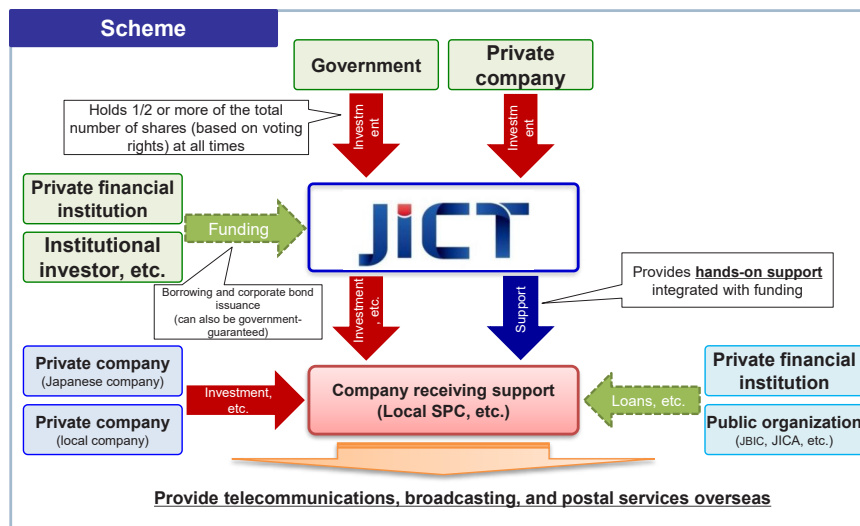
(2) Fund Corporation for the Overseas Development of Japan's ICT and Postal Services (JICT)

The Fund Corporation for the Overseas Development of Japan's ICT and Postal Services (JICT), a public-private fund under the control of MIC, supports investments and hands-on projects by entities providing overseas communications, broadcasting, or postal services and those supporting them (Figure 5-8-2-2). As of the end of March 2023, funds and loans totaling 102.9 billion yen have been allocated for support.

were revised in February 2022 (MIC Notice No. 34 of 2022) to allow JICT to support projects that do not involve the development of hard infrastructure (ICT service projects) and to make LP investments in funds. As a result, JICT has established a system that makes it easier for not only large enterprises but also medium-sized, small, and local enterprises to support overseas expansion, and five new support decisions were made in fiscal 2022.

In light of recent developments and needs in ICT and policy trends around the world, JICT support standards

Figure 5-8-2-2 Support through the Fund Corporation for the Overseas Development of Japan's ICT and Postal Services (JICT)



(3) Initiatives toward overseas expansion for each field

a Core communications infrastructure

In 2021, the Ethiopian government granted a license to an international consortium including Japanese companies providing access Ethiopia's mobile phone business, and commercial communications services were then launched for mobile communications networks in October 2022. MIC plans to take this opportunity to promote the implementation of digital solutions in Ethiopia and throughout Africa (Figure 5-8-2-3).

JICT has provided support for optical undersea cable projects in Southeast Asia and elsewhere (with up to 78 million USD of the total project cost of approximately 400 million USD supported). Furthermore, Japanese companies began in September 2021 to participate in a project to lay optical undersea cables in the Indian Ocean that had been announced by Prime Minister Modi in August 2020. In addition, efforts are being made

to improve communication environments in Pacific Island countries, which have relatively poor communication environments, in cooperation with voluntary countries, relevant ministries and agencies and organizations. The importance of safe and secure 5G networks is currently being discussed in the international arena. With regard to 5G and local 5G, “Open RAN” is attracting attention as a technology for realizing open and secure networks, and work on the overseas deployment of systems that utilize it is underway. For example, since fiscal 2021, MIC has been working with local communications carriers in Thailand and Chile to jointly examine the possibility of overseas expansion through construction of a local 5G network using 5G wireless equipment based on Open RAN and demonstration experiments for local 5G applications. Since fiscal 2022, a testing environment has been developed for Open RAN in the UK, conducting tests to confirm compatibility of RAN devices with inter-

#### b Digital technology use models

In the medical field, Japan has received orders for remote medical care systems using smartphones mainly in Central and South America, and since fiscal 2020, with the aim of expanding the use of endoscopy and medical AI diagnostic support systems in Southeast and Southwest Asian countries, which utilize high-definition imaging techniques, studies have been conducted through actual certification at local hospitals. In FY 2022, surveys and demonstrations were conducted in Vietnam. As for

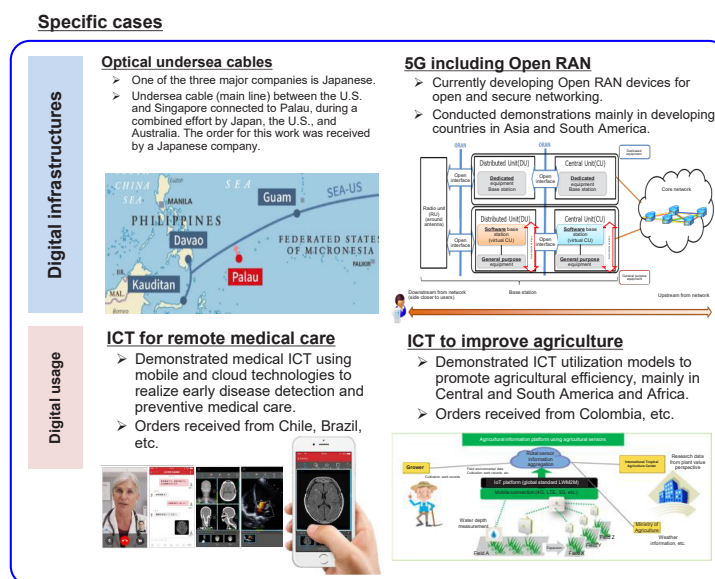
face specifications established by the O-RAN Alliance, and conducting surveys on the feasibility of implementing Open RAN in Vietnam and the Philippines.

Since March 2021, Japanese companies have been participating in projects to improve the communications environment in Uzbekistan, including the development of data centers and other communications infrastructures. JICT has also supported the development and operation of data centers in India, with an investment of up to 86 million USD decided in October 2022.

A total of 20 countries mainly in Central and South America have adopted the Japanese digital terrestrial broadcasting system. In October 2022, Botswana became the first country to adopt the system overseas and switched off analog broadcasting throughout the entire country. In January 2023, Costa Rica did the same. MIC will continue to support the smooth transition to digital broadcasting.

radio systems, preparations are under way to conduct demonstration tests in Thailand for the Ground-Based Augmentation System (GBAS), an aircraft approach and landing system utilizing GPS and other positioning satellites. Through these efforts, Japan aims to convince other countries of our technological superiority, promote the international use of highly efficient Japanese radio technologies, and promote the international coordinated use of radio frequencies.

Figure 5-8-2-3 Examples of overseas implementation of ICT



#### c Broadcast content

Japanese broadcasters have been working with local governments to produce broadcast content that conveys the appeal of Japan and disseminate it through overseas broadcasters and other organizations, and have been continuously supporting the overseas expansion of broadcast content through international trade fairs. This has had various benefits including economic ripple effects, such as the development of sales channels for re-

gional products and the spread of Japan's appeal. In fiscal 2023, MIC began to develop a common platform for expanding Japanese broadcast content information overseas. With the goal of increasing overseas sales related to broadcast content by 1.5 times by fiscal 2025 (compared to fiscal 2020), MIC will continue to promote the expansion of broadcast content overseas, thereby strengthening our soft power.



#### d Other

##### (a) Firefighting

The “Memorandum of Cooperation in Firefighting between the Ministry of Internal Affairs and Communications of Japan and the Ministry of Public Security of the Socialist Republic of Vietnam” was signed on October 8, 2018. Since then, Japan has been promoting the high quality of its firefighting equipment by exchanging opinions on

##### (b) Postal service

The government and the private sector are working together to promote international cooperation and overseas expansion through an approach that identifies opportunities and issues related to postal efficiency and modernization, and to share Japanese knowledge and experience to help solve these issues, mainly in emerging and develop-

##### (c) Administrative consultation and statistics

In the area of administrative consultation, coordination and cooperation are being carried out with the official ombudsmen of each country. In the area of statistics, MIC has been promoting support for digitization of the government by making use of its knowledge on the con-

fire prevention policies and standards for firefighting equipment. In February 2023, basic training on firefighting techniques was conducted. MIC will continue to promote the overseas deployment of firefighting equipment that conforms to Japanese standards by providing encouragement to Vietnam and other Southeast Asian countries.

ing countries in Asia and Eastern Europe. MIC has received requests for consultation on streamlining operations and have received orders for sorting machines from postal services in Vietnam and Slovenia. MIC has also taken other initiatives to expand business opportunities in postal service entities through the use of ICT.

struction of highly reliable electronic government and statistical systems. For example, in Vietnam, Japan has supported the construction of a system for information coordination between central and local ministries.

### 3. Contribution to establishment of international rules on the digital economy

#### (1) Data Free Flow with Trust (DFFT)

The G7 Action Plan to cooperate on promoting Data Free Flow with Trust (DFFT) was formulated during the Meeting of G7 Digital Ministers in May 2022 and approved during the G7 Summit in June of the same year. DFFT was also discussed during the Meeting of

G20 Digital Ministers in September of the same year.

MIC now actively participates in international discussions toward formulating concrete rules to promote DFFT, held during discussions such as G7, G20, OECD, and bilateral discussions.

#### (2) Response to discussions on international rules of cyberspace

##### a Creation of international rules of cyberspace

MIC attaches great importance to two points with regard to the creation of international rules of cyberspace. First, is giving maximum consideration to the free flow of information, which not only supports democracy but also serves as an engine for economic growth, as a source of innovation. Second is that it is crucial for private companies, academia, the local community, and all other relevant stakeholders utilizing the Internet to manage networks (multi-stakeholder framework) to participate in order to ensure cybersecurity. In addition to

strengthening cooperation with fellow countries by discussing relevant topics in bilateral discussions such as the U.S.-Japan Policy Cooperation Dialogue on the Internet Economy (U.S.-Japan IED) and the EU-Japan ICT Strategies Workshop, MIC also continue to actively participate in discussions in multilateral meetings. In April 2022 “Declaration for the Future of the Internet” was established in core member countries (Japan, U.S., Australia, Canada, EU, and UK) and willing countries.

##### b Bilateral and multilateral talks on cybersecurity

MIC continues to participate in bilateral government discussions on cybersecurity. The fourth “Japan-India Cyber Dialogue” was held in June 2022, the sixth “Japan-France Cyber Dialogue” in July 2022, and the seventh “Japan-UK Cyber Dialogue” in February 2023. MIC continues to strengthen its cooperation with these countries by discussing situations, efforts, cooperation in the international arena, and support for capacity building.

support for capacity building in the ASEAN region at meetings such as the ASEAN-Japan Cybersecurity Policy Meeting. Cooperation on cybersecurity has also been agreed upon under initiatives of the so-called Quad consisting of Japan, the U.S., Australia, and India. Discussions have also been held to strengthen cooperation with fellow countries by the government as a whole, and the “Joint Principles of the Japan-U.S.-Australia-India Cybersecurity Partnership<sup>1</sup>” were announced in a joint statement of the summit in May 2022.

MIC has also engaged in multilateral discussions on cybersecurity. MIC exchanges opinions and information on the state of each country's efforts and the state of

<sup>1</sup> <https://www.mofa.go.jp/mofaj/files/100347891.pdf>

### (3) Promotion of trade liberalization in the ICT field

In order to complement a multilateral free trade system built around the World Trade Organization (WTO) and promote bilateral economic partnerships, Japan is actively working to conclude Economic Partnership Agreements (EPAs) and Free Trade Agreements (FTAs).

Since 2018, MIC has participated in discussions on the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (TPP11), the Japan-EU Economic Partnership Agreement (Japan-EU EPA), the Japan-U.S. Digital Trade Agreement, the Japan-UK Comprehensive Economic Partnership Agreement (Japan-UK EPA), and

### (4) Promotion of strategic international standardization

International standardization in the ICT field is an important policy issue that can lead to the creation of a global market through common standards. Because strategic initiative in development of international standards is critically important for strengthening international competitiveness, MIC has been strategically promoting international standardization activities.

MIC has been conducting research on trends in de jure standards<sup>2</sup> as well as forum standards,<sup>3</sup> training hu-

man resources for international standardization, and engaging in efforts to deepen understanding of the importance of standardization activities. MIC has also been conducting joint research with the EU, the U.S., and Germany with the aim of establishing international standards, and are conducting R&D and demonstration experiments in fields where there are high expectations for social implementation (such as wireless factories).

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## 4. Economic security in the digital field

In light of the economic security importance of the communications field including 5G, MIC is working with the U.S. and other fellow countries in the digital field to ensure the safety and reliability of global digital infrastructures, based on such efforts as the “Global Digital Connectivity Partnership (GDGP)” established during a summit meeting held between Japan and the U.S. in April 2021, and the “Memorandum of Cooperation on 5G Supplier Diversification and Open RAN” signed during a summit meeting held between Japan,

the U.S., Australia, and India (the Quad) in May 2022.

Four systems were also established by the Act on the Promotion of Ensuring National Security through Integrated Implementation of Economic Measures enacted in 2022, including the “System for Ensuring the Stable Provision of Specified Social Infrastructure Services,” which may regulate telecommunications, broadcasting, and postal services. Preparations are now under way to implement this system, including developing subordinate laws and regulations.

## 5. International cooperation in multilateral frameworks

MIC holds policy discussions through multilateral frameworks such as G7/G20, APEC, APT, ASEAN, ITU, the United Nations (UN), the WTO, and the OECD, and takes an active role in leading international cooperation efforts in the ICT field, such as promoting the free flow

of information, creating a safe and secure cyberspace, developing high-quality ICT infrastructures, and contributing to the achievement of the Sustainable Development Goals (SDGs) of the UN.

### (1) G7-G20

As information distribution, businesses, and services continue to spread across borders due to globalization and the shift of socioeconomic activities to digital, active discussions on policies for the development of the digital economy have been taking place within the framework of the G7 since the April 2016 meeting of G7 ICT Ministers' Meeting held in Takamatsu, Kagawa, in which Japan served as Chair.

Discussions on the digital economy also continue to take place within the framework of the G20, including China and India. In June 2019, MIC, MFA, and METI

held the “G20 Ibaraki-Tsukuba Ministerial Meeting on Trade and Digital Economy” in Tsukuba, Ibaraki, and agreed on AI principles based on a “human-centered” concept for the first time at G20. These principles were also agreed upon at the G20 Osaka Summit. The idea of promoting the free flow of reliable data (DFFT) was also supported at the summit level, and its importance was reaffirmed at the G20 Ministerial Meeting on Digital Economy held in Saudi Arabia in 2020.

In May 2022, the Meeting of G7 Digital Ministers was held in Germany to express opposition to measures that

<sup>2</sup> Standards formulated by the International Telecommunication Union (ITU) or other public international standardization organizations.

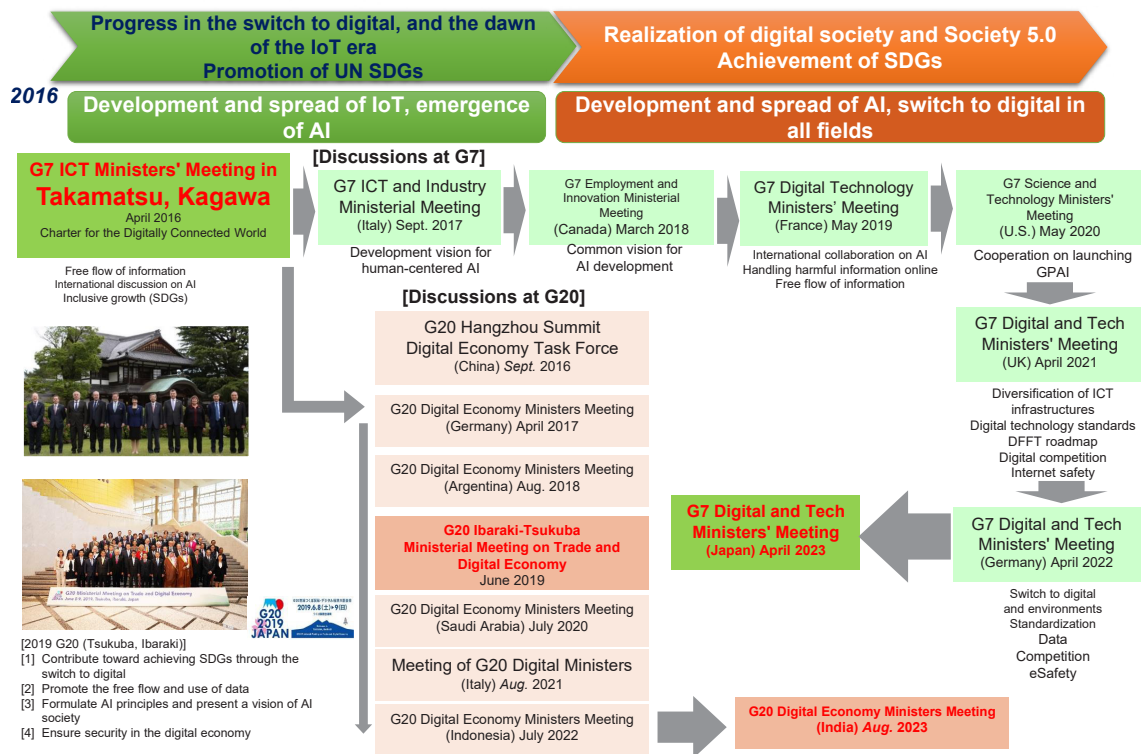
<sup>3</sup> Standards formulated based on the agreement of multiple enterprises, universities, and other forum members.

could undermine democratic values in the digital age, including internet shutdowns and network restrictions, and to develop an action plan to promote DFFT. The action plan proposed to jointly commit to action in five areas: (1) strengthening the evidence base, (2) building commonality to promote future interoperability, (3) continuing regulatory cooperation, (4) promoting DFFT in the context of digital trade, and (5) sharing knowledge on the international data space landscape, which was approved at the G7 Summit in June of the same year.

Japan chaired the G7 in 2023, and discussions were held at the G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma held in April of the same year on six

topics: (1) promoting cross-border data distribution and the free flow of reliable data, (2) building a secure and resilient digital infrastructure, (3) maintaining and promoting a free and open Internet, (4) promoting economic and social innovation and emerging technologies, (5) promoting responsible AI and AI governance, and (6) setting competitive policies in digital markets. As a result, the “G7 Gunma Takasaki Ministerial Digital and Tech Declaration” including five annexes was adopted, contributing to international discussions on rulemaking on the digital economy, including the promotion of the DFFT<sup>4</sup> (Figure 5-8-5-1).

Figure 5-8-5-1 History of G7/G20 ICT/digital discussions (overview)



**(2) Asia-Pacific Economic Cooperation (APEC)**

Asia-Pacific Economic Cooperation (APEC) is an international conference of major countries and regions in the Asia Pacific region for sustainable development of the region. Discussions on the telecommunications field are led by the Telecommunications and Information Working Group (TEL) and the Ministerial Meeting on Telecommunications and Information Industry (TEL-MIN).

As a result of the adoption of the “Aotearoa Plan of

Action” at the APEC Summit in 2021, TEL is now advancing studies for the promotion of the innovation and digital technologies field listed as one of the three economic drivers in the plan.

MIC actively contributes to TEL operation through participation in discussions and promotion of projects related to digital government at TEL held twice a year, and through dissemination of ICT policies in Japan.

**(3) Asia-Pacific Telecommunity (APT)**

Asia-Pacific Telecommunity (APT) is an international organization in the information and communications field of the Asia Pacific region established in 1979 with the aim of achieving the balanced development of telecommunications and information infrastructures in the

region. Its activities include human resource development through training and seminars, and regional policy coordination in standardization and radio communication. Masanori Kondo, a former senior MIC official from Japan is currently serving as secretary general.

<sup>4</sup> Refer to Policy Focus “G7 Digital Tech Meeting in Takasaki, Gunma” for an overview and results of the G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma, held in April 2023.

Through contributions to APT, MIC supports activities including accepting trainees and exchanging ICT engineers and researchers in broadband and wireless communications and other ICT fields where Japan has

#### (4) Association of Southeast Asian Nations (ASEAN)

The Association of Southeast Asian Nations (ASEAN) is a regional cooperative organization consisting of 10 Southeast Asian countries. Its major purposes are promoting economic growth and social/cultural develop-

##### a Contribution to achieving the goals of “ASEAN Digital Masterplan 2025”

Japan is cooperating on efforts toward achieving the goals of “ASEAN Digital Masterplan 2025” formulated in January 2021. Japan has been implementing joint projects with ASEAN countries utilizing the Japan-ASEAN Information and Communications Technology (ICT)

##### b Strengthening of systems of cooperation in the field of cybersecurity

MIC continues to conduct cybersecurity exercises including Cyber Defense Exercise with Recurrence (CYDER) for the cybersecurity personnel of government agencies and critical infrastructure operators in ASEAN countries online or at the ASEAN-Japan Cybersecurity Capacity Building Centre<sup>5</sup> (AJCCBC). Face-to-face exercises were resumed in October 2022, and a number of students exceeding the initial target of 700 completed these exercises over four years. Recognized by ASEAN, this activity has been carried out for about four years

##### c 50 years of collaboration by ASEAN and Japan

The year 2023 marks an important milestone as it is the 50th anniversary of Japan-ASEAN friendship and cooperation. Japan-ASEAN relations must be strengthened further, but it is also an opportunity to further develop Japanese digital technologies in the ASEAN region. In anticipation of the ASEAN-Japan Special Summit on the 50th anniversary of Japan-ASEAN friendship and cooperation scheduled to be held in Tokyo from December

#### (5) International Telecommunication Union (ITU)

The International Telecommunication Union (ITU) is a specialized agency of the United Nations (UN) that is headquartered in Geneva, Switzerland and has 193 member countries and regions. Its purpose is to extend international cooperation for the improvement and rational use of telecommunications, and to promote the development and efficient operation of technical means to efficiently improve, popularize, and spread telecommunication services. ITU consists of the following three sectors, and is involved in various activities including allocating frequencies, standardizing telecommunications technologies, and providing development in the telecommunications field in developing countries (**Figure 5-8-5-2**).

strengths. In fiscal 2022, MIC supported eight training courses, four international joint research projects, and two pilot projects.

ment, ensuring political and economic stability, and cooperating on challenges in the region. Policies in the digital field are discussed during the “ASEAN Digital Ministers Meeting (ADGMIN).”

Fund, which was established with contributions from Japan. In fiscal 2022, Japan worked to implement initiatives to establish standards for disaster-related data and information exchange in the ASEAN region.

since 2018, and is scheduled to continue from 2023 to 2026 with the addition of new exercises.

MIC also regularly holds the ASEAN-Japan Cyber Security Workshop for ISP operators in ASEAN countries, in order to promote information sharing among stakeholders and to build and enhance collaboration systems. The first face-to-face meeting in three years was held in January 2023, along with an exhibition of Japanese cybersecurity products and services.

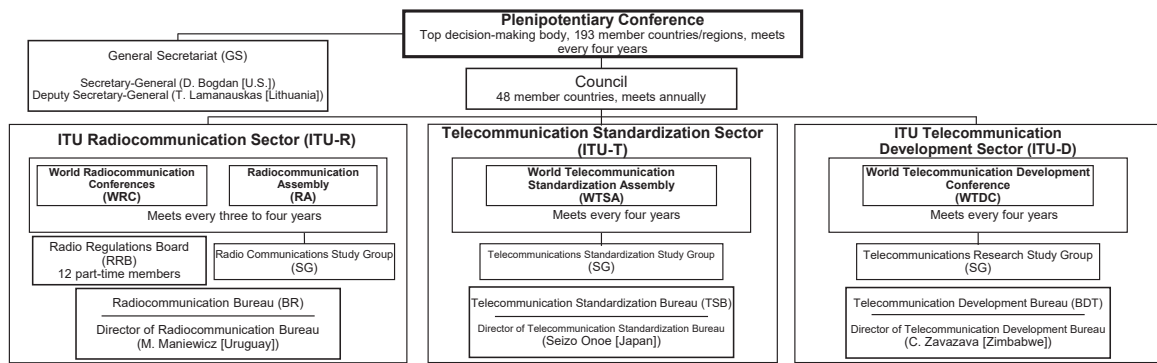
16 to 18, 2023, Japan will contribute to the deepening of ASEAN-Japan relations and bilateral relationships with ASEAN countries while providing support in a manner consistent with the digital policy goals of the ASEAN region through the use of the Japan-ASEAN ICT Fund, in light of “ASEAN-Japan Digital Work Plan 2023” approved during the ASEAN-Japan Digital Ministers' Meeting (February 2023, Philippines).

- (1) ITU-R: ITU Radiocommunication Sector
- (2) ITU-T: ITU Telecommunication Standardization Sector
- (3) ITU-D: ITU Telecommunication Development Sector

An election was held during the Plenipotentiary Conference in September 2022, with Seizo Onoe (former Chief Standardization Strategy Officer [CSSO] of Nippon Telegraph and Telephone Corporation) of Japan being elected as Director of the ITU Telecommunication Standardization Sector. He then assumed office in January 2023 (four years per term, with a maximum of two terms).

<sup>5</sup> AJCCBC <https://www.ajccbc.org/index.html>

Figure 5-8-5-2 International Telecommunication Union (ITU) organization



#### a Initiatives at ITU-R

In order to ensure the rational, efficient, economical, and fair use of radio frequencies in all radio communication services, ITU-R conducts research on the use of frequencies and formulates standards related to radio communications. The Radiocommunication Assembly (RA) aims to approve recommendations submitted by each Study Group (SG) and discuss issues and systems

#### b Initiatives at ITU-T

ITU-T studies international standards of communications network technologies and operation methods, and conducts technical studies necessary for formulating these standards.

The World Telecommunication Standardization Assembly (WTSA) is the highest decision-making meeting of ITU-T. Held once every four years, the next meeting is scheduled to be held between October and December 2024. The Telecommunication Standardization Advisory Group (TSAG) is responsible for providing advice on

#### c Initiatives at ITU-D

ITU-D assists in the development of the information and communications fields of developing countries.

The World Telecommunication Development Conference (WTDC) is the supreme decision-making meeting of ITU-D, and is held once every four years. Most recently, WTDC-22 was held in Kigali, Rwanda in June 2022.<sup>6</sup> During the current SG period (2022-2025), activities such as implementing ICT development support

### (6) United Nations

#### a United Nations General Assembly Second Committee, Economic and Social Council (ECOSOC)

During the United Nations General Assembly Second Committee (dealing with economy and finance), the “Commission on Science and Technology for Development (CSTD)” established under the Economic and Social Council (ECOSOC) leads discussions on issues such as promoting global digital cooperation toward an

for the next SG period, while World Radiocommunication Conferences (WRC) aim to revise radio regulations governing international frequency distribution. These are among the largest ITU-R meetings held every three to four years, and MIC has actively contributed to discussions.

WTSA resolutions and the standardization activities of ITU-T Study Groups (SGs). The group held its first meeting of this session in December 2022, in which it developed and agreed upon a project plan to discuss the possibility of restructuring the ITU-T by analyzing data indicators identified during discussions at the previous session.

In fiscal 2022, FG-MV (metaverse) was established as a Focus Group (FG) activity that is open to non-ITU members.

projects and conducting ICT human resource development are being promoted based on the strategic goals and action plans adopted at WTDC-22. ITU and MIC have been working together since 2022 on a separate project to implement the Connect2Recover initiative, in order to strengthen the resilience of digital infrastructures.<sup>7</sup>

inclusive digital society and the public nature of the Internet. Through participating in CSTD annual meetings and other activities, Japan contributes to international discussions on Internet governance and the information and communications field.

<sup>6</sup> This was originally scheduled to be held in 2021, but was delayed by one year due to the worldwide spread of COVID-19.

<sup>7</sup> Although support initially targeted Africa, where Internet connectivity is low, more countries began supporting the project and so the project has expanded to cover Asia Pacific island countries, Central and South America, Europe, and the whole world.

#### b Internet Governance Forum (IGF)

The Internet Governance Forum (IGF) is an international forum for dialogue on various public policy issues regarding the Internet.

In November and December of 2022, the 17th meeting was held in Ethiopia, in which Japan hosted an open forum on Internet shutdowns. During the closing ses-

sion, Takeaki Matsumoto (Minister for Internal Affairs and Communications) appeared in a video to announce that the IGF would be held in Kyoto in 2023, with the goal of maintaining and developing a free, open, secure, and undivided Internet. Thereby, Japan actively contributed to the meeting.

#### (7) World Trade Organization (WTO)

There has been no progress in the telecommunications field since the basic telecommunications negotiations agreed upon in 1997, due to the stagnation of the Doha Round negotiations that began in 2001. However, due to the recent increase in attention paid to the field of

e-commerce (which deals with the distribution of data on the Internet), negotiations on e-commerce officially began in 2019 as an initiative of willing countries in the WTO. As co-chair, Japan is now working together with Australia and Singapore on leading discussions.

#### (8) Organisation for Economic Co-operation and Development (OECD)

Pioneering discussions on the ICT field are held at the Committee on Digital Economy Policy (CDEP) of the Organisation for Economic Co-operation and Development (OECD). MIC provides personnel and financial support to the OECD Secretariat and actively contributes to policy discussions at OECD as exemplified by many MIC officials serving as CDEP chair (since January 2020) or vice-chairs of Working Parties under CDEP.

AI called “AI Policy Observatory (OECD.AI)” in January 2020 and establishing the Working Party on Artificial Intelligence Governance (WP AIGO) in May 2022.

CDEP has been working on AI-related initiatives since 2016. In May 2019, CDEP adopted and published the “Recommendation of the Council on Artificial Intelligence,” which is the first intergovernmental consensus document on AI, and provides principles to be shared by those involved in AI and matters to be addressed by governments. Since then, it has continued to work actively on initiatives, including launching an online platform on

In December 2022, a ministerial meeting on the digital economy was held in Gran Canaria, Spain, and a ministerial declaration on a reliable, sustainable, and inclusive digital future was adopted, which summarized issues and directions for DFFT, reliable AI, and next-generation infrastructure development.

#### (9) GPAI

The Global Partnership on Artificial Intelligence (GPAI) is an international public-private cooperation organization established to realize the development and use of responsible AI based on a human-centered approach. The launch of GPAI was advocated at the Biarritz Summit (France) in 2019, and the organization was then established in June of the same year after the G7 agreed to cooperate on the launch at the G7 Science and Technology Ministers' Meeting in May 2020.

In March 2023, the fourth OECD Global Forum on Digital Security for Prosperity was held jointly by MIC and OECD in Paris, France. Panel discussions were held on the topics of digital security for IoT products, digital security for AI, and interaction between policymakers and engineers.<sup>8</sup>

#### (10) ICANN

IP addresses, domain names, and other internet resources are absolutely necessary for Internet use, and it is important to ensure that these resources are managed and coordinated appropriately throughout the world, including preventing overlapping assignments. The international management and coordination of Internet resources is currently handled by the Internet Corporation for Assigned Names and Numbers (ICANN), which was launched as a nonprofit corporation in 1998. In addition to assigning IP addresses and coordinating domain names, ICANN coordinates the operation and deploy-

The third annual meeting of GPAI Summit 2022 was held in November 2022, and Japan has held the presidency since then. During the Council of Ministers, the GPAI Summit adopted a Ministerial Declaration at the initiative of the chairing country, Japan. In the declaration, countries agreed to promote the use of AI based on human-centered values, oppose the illegal and irresponsible use of AI, and contribute to a sustainable, resilient, and peaceful society. It was the first declaration of its kind.

ment of root servers and systems, and establishes policies related to these services.

Representing Japan in this area, MIC actively contributes to ICANN activities as a member of its Governmental Advisory Committee, consisting of the representatives of the governments of member countries. For example, during the 70th to 77th meetings of ICANN, countermeasures against DNS misuse was considered in cooperation with other organizations within ICANN and made proposals for revising the terms of contracts between ICANN and registrars.

<sup>8</sup> <https://www.oecd.org/digital/global-forum-digital-security/>

## 6. International cooperation in bilateral relationships

### (1) Policy cooperation with the U.S.

Based on the “U.S.-Japan Competitiveness and Resilience (CoRe) Partnership<sup>9)</sup> issued after the Japan-U.S. Summit Meeting on April 16, 2021, the “Global Digital Connectivity Partnership (GDCCP)<sup>10)</sup> was launched in May of the same year to promote secure connectivity and a vibrant digital economy (Figure 5-8-6-1). With the launch of GDCCP, the “U.S.-Japan Policy Cooperation Dialogue on the Internet Economy” (U.S.-Japan IED) is now positioned as a framework to promote GDCCP.

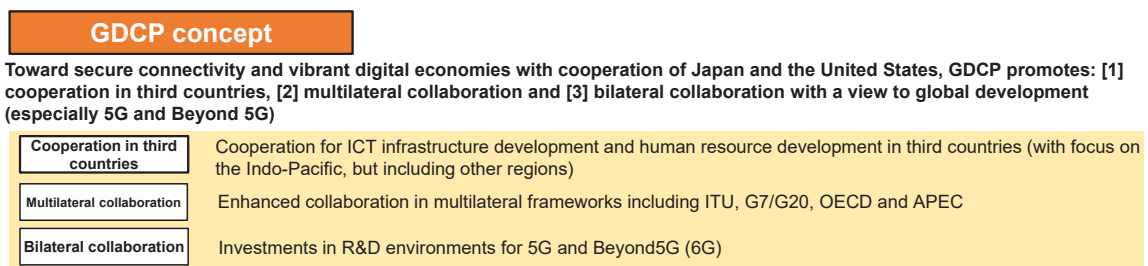
A fact sheet on the “U.S.-Japan Competitiveness and Resilience (CoRe) Partnership” was released among the documents resulting from the summit meeting between Japanese Prime Minister Kishida and U.S. President Joe Biden held on May 23, 2022, in which both countries agreed to cooperate on open wireless access networks (Open RAN) and cybersecurity.

The 13th U.S.-Japan IED intergovernmental and pub-

lic-private meetings were held on March 6 and 7, 2023, combining face-to-face and online methods. Participants discussed a wide range of topics, including 5G and Beyond 5G (6G), cross-border privacy rules (CBPR), Data Free Flow with Trust (DFFT), cooperation in the international arena, and future cooperation between Japan and U.S. This was followed by the release of the “Joint Statement on the 13th U.S.-Japan Policy Cooperation Dialogue on the Internet Economy.”<sup>11)</sup> In this document, both sides agreed to change the name of the U.S.-Japan IED to “U.S.-Japan Dialogue on the Digital Economy.”

The fifth expert-level working group meeting of the GDCCP was held in April 2023. Opinions were then exchanged on further promoting Japan-U.S. cooperation with third countries, based on the results of this meeting.

Figure 5-8-6-1 Global Digital Connectivity Partnership (GDCCP)



### (2) Cooperation with Europe

#### a Cooperation with the European Union (EU)

MIC and the Directorate-General for Communications Networks, Content and Technology of the European Commission hold a series of meetings to discuss related topics. The “EU-Japan ICT Policy Dialogue” is held to exchange information and opinions on ICT policy, with the latest being the 28th meeting held in February 2023. The “EU-Japan ICT Strategies Workshop” is held to promote public-private collaboration and cooperation in the digital field, with the latest being the 13th meeting held in April 2022.

During the 28th EU-Japan ICT Policy Dialogue, discussions were held on smart cities, 5G and Beyond 5G (6G), cybersecurity, secure and equitable online environments, and AI. More specifically, the social concept

and use cases of Beyond 5G (6G) were explained, along with the ideal network to achieve. The establishment of a new research and development fund and the status of activities of the Beyond 5G Promotion Consortium were introduced as the latest initiatives. Participants from the EU explained the budget for research and development projects, and exchanged opinions on future cooperation.

The EU-Japan Digital Partnership was also launched in May 2022. The partnership covers priorities in the digital field shared by Japan and the EU, with the Digital Agency, MIC, and METI (from Japan), and the Directorate-General for Communications Networks, Content and Technology of the European Commission, playing leading roles.

#### b Bilateral cooperation with European countries

##### (a) The UK

MIC, together with the Digital Agency and METI launched the UK-Japan Digital Group with the UK in May 2022, as a director-level meeting based on a framework for addressing joint priorities between Japan and the UK in the digital field. The first meeting was held in

October of the same year. In order to accelerate cooperation between Japan and the UK at a high level, a minister-level meeting of relevant ministries and agencies was held between Japan and the UK in December of the same year. The meeting was positioned above the direc-

<sup>9)</sup> [https://www.mofa.go.jp/mofaj/na/na1/us/page1\\_000951.html](https://www.mofa.go.jp/mofaj/na/na1/us/page1_000951.html)

<sup>10)</sup> [https://www.soumu.go.jp/menu\\_news/s-news/01tsushin08\\_02000119.html](https://www.soumu.go.jp/menu_news/s-news/01tsushin08_02000119.html)

<sup>11)</sup> [https://www.soumu.go.jp/menu\\_news/s-news/01tsushin08\\_02000149.html](https://www.soumu.go.jp/menu_news/s-news/01tsushin08_02000149.html)

tor-level meeting, re-establishing the UK-Japan Digital Partnership. MIC will continue to serve as the secretari-

(b) Germany

MIC holds ICT policy dialogues with the Federal Ministry for Digital and Transport of Germany, in order to deepen mutual understanding between Japan and Germany on policy aspects in the ICT field, and to promote collaboration and cooperation between both countries. The sixth meeting was held online in March 2022. During the meeting, both countries discussed government initiatives to promote Open RAN, progress in research and development toward Beyond 5G, global digital gov-

(c) France

MIC holds ICT policy discussions with the Ministry of the Economy, Finance and the Recovery of France,<sup>12</sup> in order to share information on the latest initiatives re-

### (3) Cooperation with Asia-Pacific countries

MIC cooperates with the information and communications ministries and agencies of Asia-Pacific countries in

a India

In May 2022, the seventh meeting of the Japan-India Joint Working Group was held online between MIC and the Ministry of Communications of India, in order to

b Southeast Asia

Japan and Vietnam have been holding meetings of the Japan-Vietnam ICT Joint Working Group since 2018. During the sixth meeting of the working group (held in December 2022), Japan and Vietnam shared information and exchanged opinions on digital transformation, 5G, and postal services, and agreed to strengthen cooperation between Japan and Vietnam in the future.

c Australia

The “Australia-Japan Policy Dialogue for Telecommunications Resilience” was established in response to a joint statement made in July 2022. This framework consists of MIC and the Department of Home Affairs and Department of Infrastructure, Transport, Regional Development, Communications and the Arts of Australia, and is designed to ensure and improve digital connectivity in the Indo-Pacific region with the aim of realizing a “Free and Open Indo-Pacific” (FOIP) through regular information sharing and discussions in the information

### (4) Cooperation with Central and South America

With regard to Central and South America, Japanese digital terrestrial broadcasting has been adopted in 14 countries, starting with Brazil in 2006. Japan continues to support efforts in each country to switch over from analog broadcasting, as well as the introduction of the Japanese Emergency Warning Broadcast System (EWBS) in countries such as Peru and Ecuador.

MIC also holds 5G seminars in various countries in

at for Japan.

ernance, digital platform policies, data utilization, and AI. Japan and Germany agreed to continue collaborating during these discussions. Public-private sessions were also held to exchange information on 5G and other initiatives in Japanese and German industries.

Cooperation in joint research and development upgrading 5G has been underway with the Federal Ministry for Economic Affairs and Climate Action since fiscal 2022.

garding important topics in the ICT field. The 21st such meeting was the latest to be held, in June 2021.

the ICT field, including communications infrastructure development and ICT usage.

share information on efforts in the ICT field such as 5G, Beyond 5G, and Open RAN, and to exchange views on future cooperation between Japan and India.

In February 2023, Japan signed a memorandum of understanding on ICT cooperation with the Department of Information and Communications Technology of the Philippines and agreed to further strengthen cooperation in the ICT field, including support for the construction of 5G networks including Open RAN.

and communications field using 5G, optical undersea cables, and satellite communications, including Open RAN.

The first policy dialogue was held in February 2023. The meeting covered a wide range of topics in the field of information and communications, and both countries agreed to establish the “Track 1.5 Meeting” subordinate to the policy dialogues in order to engage in active public and private sector discussions in the information and communications field.

Central and South America to explain the importance of constructing open and secure 5G networks, and helps Japanese enterprises with excellent technologies in this field to expand business in this region.

In order to encouraging initiatives to use Japan's advanced ICT technologies to solve social challenges in these countries, MIC conducts smart city demonstration projects including the protection of world heritages

<sup>12</sup> Ministries were restructured in 2022, and this ministry is now called the Ministry of Economy, Finance, Industry and Digital Sovereignty.



in Cartagena, Colombia, and demonstrations of agriculture ICT solutions using IoT data and AI to improve the operational efficiency of agricultural producers in Ecua-

#### **(5) Cooperation with other regions**

##### **a Cooperation with Africa**

ICT cooperation with African countries has progressed with the adoption of Japanese digital terrestrial broadcasting in Botswana in 2013 and Angola in 2019, and the complete switchover to digital in Botswana in October 2022. In August 2022, the eighth Tokyo International Conference on African Development (TICAD 8) was held in Tunisia. MIC held an online seminar on digital transformation (DX) and an online exhibition to promote Japanese companies as official side events, and adopted the “TICAD 8 Tunis Declaration” following the

##### **b Cooperation with the Middle East**

MIC has strengthened its cooperative relationship with Saudi Arabia. Based on “Japan-Saudi Vision 2030” (2017) and a memorandum of cooperation with Saudi Arabia on cooperation in the ICT field signed with the Minister of Communications and Information Technology of Saudi Arabia in 2019, MIC has established cooperative relationships between enterprises in both countries and supported the development of technology by Japanese enterprises by dispatching a public-private mission to Saudi Arabia in fiscal 2018 (the mission was suspended from fiscal 2019 to 2020 due to the COVID-19

pandemic) and public-private online ICT workshops in January 2022. Demonstration experiments for ICT medical treatment using VR technology were also conducted in fiscal 2021 and perinatal remote medical care in fiscal 2022.

dor and Brazil. Demonstrations of medical ICT solutions using local 5G has been conducting in Chile.

meeting, which includes a statement on cooperation between Japan and Africa in the ICT field.

Since fiscal 2019, demonstration experiments on communications infrastructures were conducted in Kenya and Senegal; agricultural ICT in Ethiopia and Botswana; medical ICT in Egypt, Ghana, Kenya, and the Democratic Republic of the Congo; remote education in Senegal; and smart cities in Egypt, in order to contribute toward solving social issues in Africa and to support Japanese companies expanding into the area.

In April 2023, a memorandum of cooperation in telecommunications technology and postal service was signed with the Ministry of Communications of Israel, on the occasion of the 70th anniversary of the establishment of diplomatic relations with Israel.

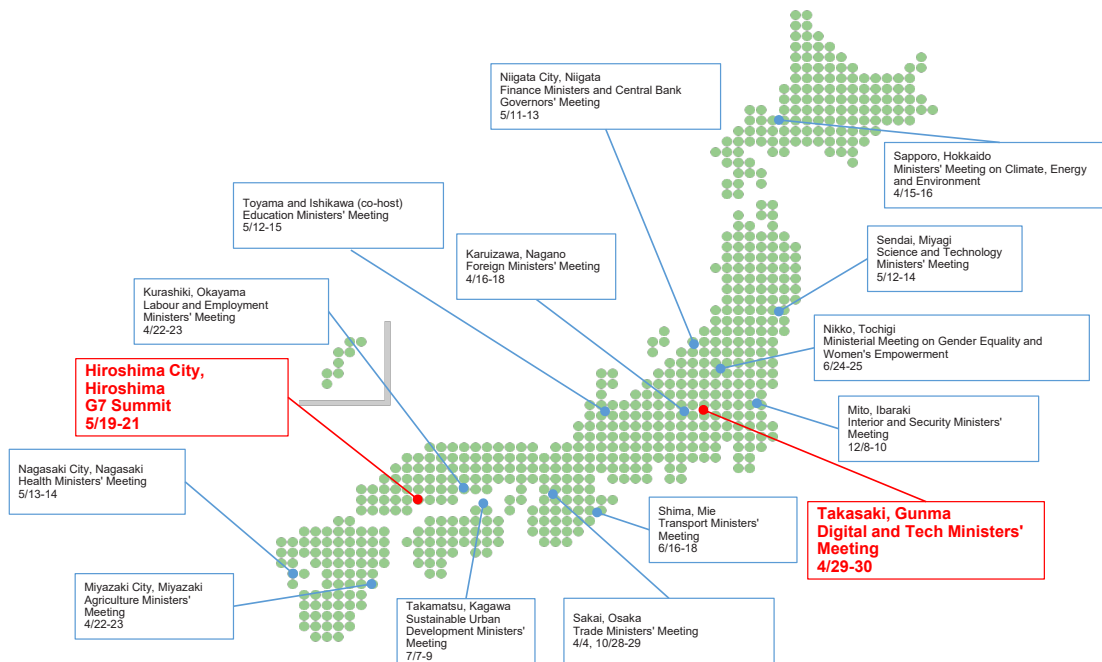
## Policy Focus G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma

### 1. Overview of G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma

On April 29 and 30, 2023, MIC, the Digital Agency, and METI held the “G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma.” The meeting was one of the ministerial meetings related to the G7 Hiroshima

Summit, which was held from May 19 to 21 of the same year. Invited countries and relevant international organizations participated in the meeting, in addition to the G7 members.

Figure 1 G7 Summit and related ministerial meetings



### 2. Results of G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma

#### (1) Discussions thus far

International policy coordination is indispensable for the world as a whole to reap the benefits of digital technologies, leading to economic growth and the creation of jobs. Discussions on the digital economy have been ongoing within the framework of the G7 and G20, since the G7 ICT Ministers' Meeting in Takamatsu, Kagawa in April 2016 with Japan serving as Chair. The promotion of digital technologies has continued to be discussed as an

even more important issue in the face of significant changes in society due to the impact of COVID-19, even after the G20 Ministerial Meeting on Trade and Digital Economy in Tsukuba, Ibaraki was held in June 2019. In May 2022, the Meeting of G7 Digital Ministers was held in Germany to discuss issues the G7 should work together on in order for digital technologies to lead to further socio-economic development.

#### (2) Overview of the results of G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma

The goal of this year's meeting was to demonstrate a united response as agreed up by the G7 in digital fields such as DFFT (Data Free Flow with Trust), digital infrastructures, Internet governance, and AI, while also aiming to accelerate efforts in digital fields through collaboration with the Global South. Held under the co-chairs of Takeaki Matsumoto (Minister for Internal Affairs and Communications), Taro Kono (Minister for Digital Affairs), and Yasutoshi Nishimura (Minister for Economy, Trade and Industry), the aim of the meeting was to work toward achieving a strong recovery from the severe impact of the spread of COVID-19 and the Russian invasion

of Ukraine on the global economy, and in light of the crises currently unfolding such as trends among authoritarian countries and the modulation of the global economy. Participants discussed six topics: (1) promoting cross-border data distribution and free distribution of reliable data, (2) building secure and resilient digital infrastructures, (3) maintaining and promoting a free and open Internet, (4) promoting innovation and emerging technologies in the economy and society, (5) promoting responsible AI and AI governance, and (6) setting competition policy in digital markets. As a result of these discussions, the “G7 Gunma Takasaki Ministerial Digi-

tal and Tech Declaration” (including five annexes) was adopted. The main points of the ministerial declaration on each of these six topics are described below.

(1) Promoting cross-border data distribution and Data Free Flow with Trust (DFFT)

Participants established an international framework to implement DFFT (IAP), and agreed on the “G7 Vision for Operationalising DFFT and Its Priorities.”

(2) Building secure and resilient digital infrastructures

Participants formulated a vision for the future of networks in the Beyond 5G and 6G era, with elements such as high-capacity and low-latency communications, energy efficiency, multi-layered networks, openness, and interoperability, and agreed upon the “G7 Action Plan for Building a Secure and Resilient Digital Infrastructure.”<sup>1</sup>

(3) Maintaining and promoting a free and open Internet

Participants agreed upon the “G7 Action Plan for Open, Free, Global, Interoperable, Reliable, and Secure Internet.”<sup>2</sup>

(4) Promoting economic and social innovation and emerging technologies

Participants agreed to ensure interoperability of digital infrastructures, address software vulnerabilities in the digital supply chain, and use governance methods that are friendly to innovative technologies and innovations. Participants also agreed to hold further discussions on the use of digital technologies such as the metaverse.

(5) Promoting responsible AI and AI governance

Participants recognized the importance of promoting the interoperability of AI governance in different countries and regions in order to promote a common vision of trustworthy AI based on democratic values, and agreed upon the “Action Plan for Promoting Global Interoperability of AI Governance.” Participants also agreed to hold a forum to discuss generative AI as soon as possible.<sup>3</sup>

(6) Setting competition policy in digital markets

Participants agreed to hold a Digital Competition Summit this fall to share information on common issues in designing and enforcing existing laws and new legal systems in the digital competition fields.

Figure 2 G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma



<sup>1</sup> Participants welcomed efforts to diversify suppliers in the ICT supply chain, and continue to discuss market trends toward an open and interoperable approach. Participants agreed upon the importance of developing, implementing, and maintaining multi-layered networks consisting of terrestrial and non-terrestrial networks, undersea cables, and other elements, and agreed to deepen cooperation with fellow countries.

<sup>2</sup> Participants agreed that the G7 would promote a global and undivided Internet, oppose any intention or action toward division, and jointly counter activities such as Internet shutdowns and network restrictions by authoritarian countries. Participants also agreed that they would cooperate with various stakeholders and work together toward the success of the IGF 2023 Kyoto Conference. Participants also agreed that existing measures against disinformation should be compiled as a set of practices and published at the IGF 2023 Kyoto Conference.

<sup>3</sup> Participants also recognized the need to gain a quick understanding of the opportunities and challenges posed by generative AI technologies and to promote safety and reliability in the development of these technologies, agreed to establish a forum at G7 to discuss the possibility of using generative AI in a responsible manner, as well as AI governance, intellectual property rights protection, transparency, and measures against disinformation that international organizations such as the OECD and GPAI have used amid the rapid growth of generative AI.

## (Reference)

### Discussions at the G7 Hiroshima Summit (main points of the summit communiqué)

Based on the results of the G7 Digital and Tech Ministers' Meeting in Takasaki, Gunma, the “G7 Hiroshima Summit Communiqué” issued on May 20, 2023, stressed the importance of global governance for emerging technologies such as AI and the metaverse in the digital

#### AI:

Relevant ministers were directed to launch the “Hiroshima AI Process” through a G7 working group in collaboration with the OECD and GPAI and in an inclusive manner, for discussions later this year on generative AI including topics such as governance of generative AI, protection of intellectual property rights, promotion of transparency, combating of disinformation, and the responsible use of technologies.

#### Metaverse:

The potential of immersive technologies and virtual spaces, such as the metaverse, that can provide innovative opportunities and promote sustainability in all industrial and social sectors was recognized, and relevant ministers were directed to consider joint approaches in this area, including interoperability, portability, and standards, with the support of OECD.

field, support for efforts to realize DFFT, as well as the need to build secure and resilient digital infrastructures and address digital disparities. The main points of the summit communiqué are summarized below.

#### DFFT efforts:

The establishment of the Institutional Arrangement for Partnership (IAP) was approved to realize DFFT.

#### Secure and resilient digital infrastructures and the digital divide:

A commitment to deepening cooperation with the G7 and fellow countries to support and strengthen network resilience by means such as extending secure undersea cable routes was confirmed. Views on aspects and opportunities related to open configuration and security were also exchanged, in light of the early introduction of Open RAN with Japan serving as G7 Chair. The need to close the digital divide was recognized, and the G7 commitment to support other countries to expand digital access was reaffirmed under the principles of equity, universality, and affordability.

## Section 9 Promotion of Postal Administration

### 1. Summary

#### (1) Initiatives so far

The network of post offices that had been established throughout Japan since the foundation of the postal service in 1871 had increased to more than 24,000 offices nationwide just before privatization occurred on October 1, 2007. However, post offices are even now being established with the intention of being used throughout

the country.

MIC continues its efforts to secure universal service that post offices provides throughout the nation and to utilize post offices as regional hubs to provide service for residents in the local area.

#### (2) Future challenges and directions

The social environment of Japan has changed significantly in recent years, such as the declining birthrate and aging population, an increasing concentration of populations in urban areas, frequent natural disasters, and the conversion of society as a whole to digital (including taking administrative procedures online). The importance of the post office as a public infrastructure is increasing as public enterprises that play essential roles in daily life are being shut down and local government branches that provide administrative services are being closed. This is especially true in rural areas.

as a private company. It is also important for post offices and the services they provide to bring convenience to users and contribute to local communities.

MIC must continue to ensure that Japan Post Group is managed soundly, ensures fair and free competition, provides stable universal service through post offices, effectively utilizes its network of approximately 24,000 post offices, and responds accordingly as society switches increasingly to digital. It is essential to develop diverse and flexible services and improve operational efficiency as times change, in order to bring more convenience to citizens and users, and to contribute to local communities.

It is important for Japan Post Group to maintain its network of post offices and universal service over the medium-to-long term while also performing adequately

### 2. Promotion of postal administration

#### (1) Universal postal service

##### a Subsidy/contribution system to support the maintenance of the post office network

In order to ensure that universal postal service continues to be provided, a subsidy/contribution system to help maintain the post office network was established in June 2018 and then launched in April 2019. The Organization for Postal Savings, Postal Life Insurance and Post Office Network provides subsidies and collects contri-

butions. In fiscal 2023, subsidies totaling approximately 300 billion yen were provided to Japan Post, with contributions of approximately 243.6 billion yen from Japan Post Bank and approximately 56.5 billion yen from Japan Post Insurance.

#### (2) Post offices contributing to communities

##### a How post offices should contribute to communities in a digital society

In Japan, the low birthrate, aging population, and declining population, coupled with the COVID-19 pandemic, are further straining local communities. Expectations for post offices to contribute to communities across the country are growing. It will be important for post offices to identify the merits of digital technologies that will allow them to overcome geographical and temporal constraints, and the ways in which they can contribute to communities by leveraging their usefulness as regional hubs. In October 2022, MIC consulted with the Information and Communications Council on how post offices should contribute to communities in a digital society, and the council's Postal Policy Committee began deliberating on the matter. The committee deliberated two major topics. First, was how post offices should cooperate with the public infrastructures in the region such as local governments. Second, was how post offices should contribute to communities through DX and data utiliza-

tion. In December of the same year, the committee compiled an interim report on the topic of popularizing and using Individual Number Cards through post offices.

In October 2022, MIC established a project team consisting of related departments to study how to implement local revitalization measures through post offices. In addition to promoting the popularization and use of Individual Number Cards through post offices, the team identified various measures such as firefighting, disaster prevention, and administrative consultation (including promoting the handling of local government service affairs at post offices), and publicized these measures in March 2023. The report states that measures will be widely spread to local governments and post offices throughout the country in order to promote regional initiatives to promote cooperation between post offices all throughout the country and local governments.

### b Promotion of the popularization and use of Individual Number Cards through post offices

The Individual Number Card serves as a sort of passport for residents to a new digital society, and it is becoming indispensable as society as a whole goes increasingly digital.

All post offices throughout the country are required by law to maintain universal service, and the post office network continues to be maintained even in sparsely populated areas. Post offices have therefore become an important infrastructure supporting the lives of the elderly and other local residents. They are increasingly becoming the last operations hub with full-time employees as the population declines, especially in sparsely populated areas.

In December 2022 the Postal Policy Committee of the Information and Communications Council identified measures to promote and use Individual Number Cards in post offices, in an interim report on how post offices should contribute to communities in a digital society, based on the belief that the unique nature of post offices could be leveraged in promoting the popularization and use of Individual Number Cards.

The interim report described several initiatives that Japan must urgently implement: (1) a request for expanded support for applications at post offices, (2) a request for municipalities to actively provide post office

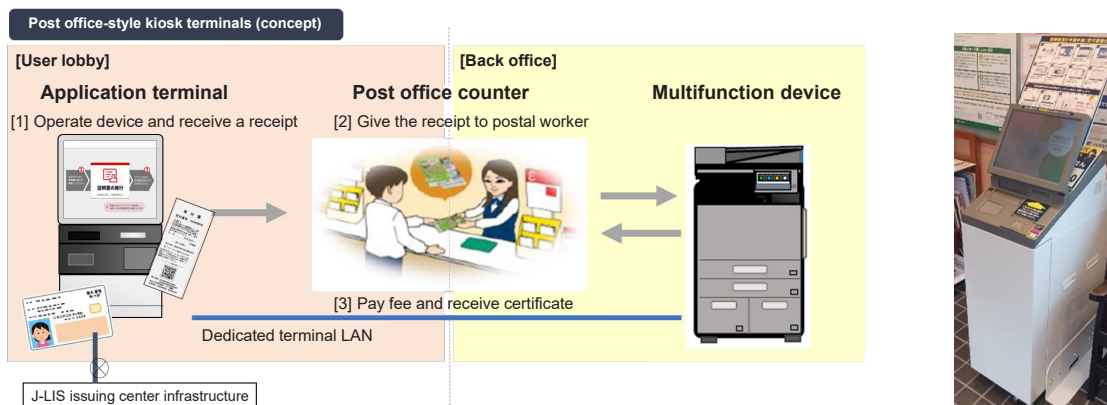
space for Individual Number Card onsite applications, (3) efforts to encourage residents to apply for Individual Number Cards (such as posting posters at post offices), (4) consideration of legal amendments necessary for Individual Number Cards to be issued at post offices, (5) promotion of outsourcing of administrative functions related to issuing/renewing digital certificates and changing/initializing PIN codes, (6) support for the introduction of automatic certificate issuance service terminals in post offices (mainly in municipalities without convenience stores), and (7) local fiscal measures related to the introduction of automatic certificate issuance services at post offices. Concrete initiatives were then implemented, including support for Individual Number Card applications at 848 local governments and 3,511 post offices (as of March 31). MIC continues to promote procedures for revising laws necessary for issuing Individual Number Cards at post offices, assist local governments and post offices in promoting the popularization of Individual Number Cards, encourage residents to obtain Individual Number Cards at post offices, and encourage local governments and post offices to handle affairs related to Individual Number Cards at post offices.

### c Promotion of use as a contact point for administrative services

MIC has developed and demonstrated post office-style individual number card terminals (post office-style kiosk terminals) that can be introduced at low cost in the supplementary budget for fiscal 2021. This terminal allows for digital technologies to be used for procedures required for issuing certificates such as residence certificates, making it possible to issue certificates at post offices without having to go through local governments (Figure 5-9-2-1). The second supplementary budget

for fiscal 2022 supports the introduction of these post office-style individual number card terminals in post offices, mainly in municipalities that do not have convenience stores. In order to improve resident services using Individual Number Cards, local governments have also implemented special tax measures (0.7%) since fiscal 2023 to cover the cost of introducing automatic certificate issuance services at post offices and other locations.

Figure 5-9-2-1 Post office-style kiosk terminal



### d Cooperation between post offices and local public infrastructures

From fiscal 2019 to fiscal 2021, MIC ran the "Post Office Revitalization Project (by Post Offices and Local Governments Using ICT)," which leveraged the strengths of post offices to conduct demonstrations in order to solve various local issues and promote greater user convenience, and then developed the project nationwide as a model project. In January 2022, a post office monitoring service that uses smart speakers that was developed through demonstrations during this project was launched as a service for local governments by Japan Post. By the

nience, and then developed the project nationwide as a model project. In January 2022, a post office monitoring service that uses smart speakers that was developed through demonstrations during this project was launched as a service for local governments by Japan Post. By the

end of December of the same year, Japan Post had been entrusted with post office monitoring by 29 local governments.

MIC has also been conducting demonstrations since fiscal 2022 to help resolve local issues by leveraging the power of digital technology through collaboration between post office, which has sites all over the country and local public infrastructures of local governments, as the “Project to Promote Cooperation between Post Offices and Public Regional Infrastructures”. (Figure 5-9-2-2). Demonstration projects were run in fiscal 2022 on supporting local MaaS by linking Individual Number

Cards and transportation-related IC cards at post offices (Maebashi, Gunma), making public use of post office drones in hilly and mountainous areas (Kumano, Mie), and supporting shopping services where customers can order goods at post offices (Yatsushiro, Kumamoto) (Figure 5-9-2-3). In fiscal 2023, the results of these projects will be implemented nationwide, and demonstration projects such as online medical care at post offices will be implemented. MIC will continue to create model cases for solving local problems through cooperation between post offices and local public infrastructures.

Figure 5-9-2-2 Project to Promote Cooperation between Post Offices and Public Regional Infrastructures

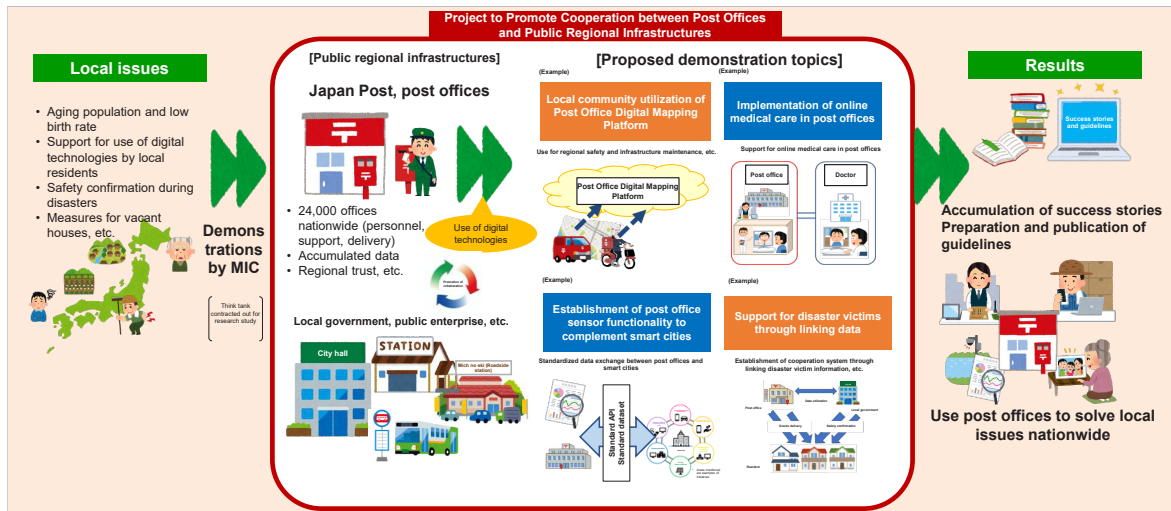


Figure 5-9-2-3 Regional demonstrations

Linking Individual Number Cards and transportation-related IC cards at post offices (Maebashi, Gunma)



Public use of post office drones in hilly and mountainous areas (trial delivery of emergency relief supplies during disaster) (Kumano, Mie)



Shopping services at post office counters (Yatsushiro, Kumamoto)



### (3) Utilization of data acquired by post offices

#### a Study Group on the Utilization of Post Office Data and Protection of Privacy

In order to promote the effective use of data acquired by post offices, while also ensuring that confidential correspondence, confidential information, and personal information are handled appropriately, MIC has held meetings of the “Study Group on the Utilization of Post Office Data and Protection of Privacy” since October 2021. In addition to revising the commentary on guidelines on the protection of personal information in postal services (MIC Notice No. 167 of 2017, “Postal Service Guidelines” below), the study group published a report

#### b Post Office Data Utilization Advisory Board

In response to the above report, MIC has been holding meetings of the “Post Office Data Utilization Advisory Board” since December 2022, with the aim of obtaining advice from experts and others in implementing the initiatives and measures described in the “Roadmap for Promoting the Utilization of Post Office Data.” It has

in July 2022. This report presents a basic approach for utilizing post office data, summarizes efforts of Japan Post Group and Japan Post, and describes measures to be implemented by MIC, in the form of the “Roadmap for Promoting the Utilization of Post Office Data.” It also mentions several items to be addressed by MIC, such as establishing a Post Office Data Utilization Advisory Board and strengthening supervision through means such as the “Postal Administration Monitoring Meeting.”

also been working on specific means of providing data to public organizations (disaster, tax, and bar association inquiries) added to the commentary on the Postal Service Guidelines, and regularly follows up on measures by Japan Post Group and Japan Post to utilize data.

### (4) New financial services from Japan Post Bank and Japan Post Insurance

In March 2022, MIC and the Financial Services Agency granted Japan Post Bank approval under the Postal Service Privatization Act for intermediary operations for concluding investment blanket contracts. Since May of the same year, investment blanket services have been offered at all Japan Post Bank branches.

Japan Post Insurance also submitted notifications based on the Postal Service Privatization Act,<sup>1</sup> regarding

the revision of products due to the introduction of the contract renewal system in June 2022, and then the revision of student loan insurance products in December of the same year. The contract renewal system was introduced in October of the same year, and the student loan insurance system was introduced in April 2023 at Japan Post Insurance and post offices nationwide.

## 3. Promotion of postal administration in the international field

### (1) Response to the Universal Postal Union (UPU)

The Universal Postal Union (UPU) is a specialized agency of the United Nations that has been implementing various cooperative projects and formulating fair and open rules for international postal services, in order to develop postal network services worldwide and further improve the convenience of international postal services. As an organization responsible for formulating an appropriate international postal framework for the expansion of cross-border e-commerce, UPU is now expected to play a major role in the development of international logistics.

Masahiko Metoki of Japan has served as Director General (four years per term, with a maximum of two terms) of the UPU since January 2022, and is expected to lead various efforts there.

MIC has also been actively supporting the leadership of Director General Metoki. For example, the Ministry has increased its contributions to the UPU and has strengthened its support for various cooperative projects in the UPU.

Based on a memorandum of cooperation with the UPU, MIC has supported the implementation of cooperative

projects with UPU member countries in several areas: (1) efforts to build disaster-resilient postal networks, (2) efforts to respond to climate change through the construction of postal networks with a low environmental impact, (3) efforts to utilize postal networks as a basis for addressing social needs such as financial inclusion, infectious disease control, and the development of new businesses, and (4) efforts to improve the added value of postal network services using cutting-edge technologies such as ICT. The memorandum of cooperation was renewed in March 2022, immediately following the appointment of the Director General, to expand implementation projects (such as strengthening efforts to respond to climate change) in light of the increase in contributions to the UPU.

In fiscal 2022, support was also provided for postal services in Ukraine through contributions to the Emergency Solidarity Fund (ESF)<sup>2</sup> established by the UPU. Through such efforts, Japan is contributing to the further development of global postal network services and actively contributing to the development of fair and open rules for international postal services in the UPU.

<sup>1</sup> In June 2021, Japan Post Group disposed of more than half of its shares in Japan Post Insurance, and new business operations of Japan Post Insurance migrated from an approval system to a notification system.

<sup>2</sup> A UPU fund to provide emergency assistance to member states affected by disasters, etc.



## (2) Support for the overseas expansion of Japanese-style postal infrastructures

MIC is promoting the expansion of Japanese-style postal infrastructure systems overseas as part of the Government's "Infrastructure System Overseas Promotion Strategy 2025"<sup>3</sup> (June 2022 Supplement) and the "MIC World Development Action Plan 2025" (July 2022<sup>4</sup>). Aimed mainly at emerging and developing countries in Asia and Eastern Europe, this initiative provides superior technologies and operational knowledge related to Japanese postal services, and supports the modernization and upgrading of postal services in these countries. Sorting machines are at the core of postal infrastructures. In addition to seizing opportunities to update and expand these machines, MIC is acquiring peripheral businesses such as equipment used in division

centers, and working to identify needs and issues related to postal services in other countries. MIC is also exploring new business possibilities such as e-commerce, digital transformation (DX), and green transformation (GX), in order to promote the expansion of Japanese companies with technology and knowledge in related fields.

MIC will continue to develop cooperation projects with other countries, and will promote the expansion of Japanese-style postal infrastructure systems overseas by building relationships with postal organizations in other countries through active participation in international postal conferences and conducting basic research on postal services in each region, in order to discover new opportunities for cooperation with other countries.

## 4. Trends in correspondence delivery

The Act on Correspondence Delivery by Private Business Operators (Act No. 99 of 2002) allows private business operators to run correspondence delivery services. As of the end of fiscal 2022, 583 entities have entered the specified correspondence delivery business, which provides only those services that do not interfere with the provision of universal postal services. A range of services are provided in response to customer needs, including correspondence collection and delivery services on

certain routes, rapid delivery services provided within a relatively close distance or limited area, and services similar to telegrams to deliver messages of congratulation or condolences together with a decorated card.

MIC continues to promote understanding of the purpose and specifics of correspondence delivery, define what correspondence is, and spread information on the correspondence delivery system, in order to ensure that correspondence is sent appropriately.

<sup>3</sup> Infrastructure System Overseas Promotion Strategy 2025 (June 2022 Supplement): <https://www.kantei.go.jp/jp/singi/keikyou/dai54/infra.pdf>

<sup>4</sup> MIC World Development Action Plan 2025 (formulated in July 2022): [https://www.soumu.go.jp/main\\_content/000842643.pdf](https://www.soumu.go.jp/main_content/000842643.pdf)