Section 3 Radio Policy Developments

1. Summary

(1) Past initiatives

Radio waves are a finite and scarce resource widely used to provide services essential to people's lives, such as mobile phones, police, firefighting, etc. Since radio waves are the common property of the citizenry, their fair and efficient use must be ensured. Specifically, radio waves cannot be used in an unregulated manner due to the nature of interference that occurs when the same frequency is used in the same area, and a system to ensure proper use is necessary. Since the propagation of radio waves and the amount of information that can be transmitted differ by frequency band, each frequency band must be used for suitable applications. Because radio waves can also propagate across national borders above a certain power output, it is necessary to establish treaties and other international agreements and to coordinate on the use of radio waves.

The Radio Act was enacted in 1950 to promote public welfare by ensuring the fair and efficient use of radio waves, replacing the old Wireless Telegraphy Act, which stated that "Wireless telegraphy and wireless telephony shall be managed by the government". Japan has since promoted the private use of radio waves, which are the common property of the people, and radio waves have now become indispensable to people's lives.

MIC has been allocating frequencies and licensing radio stations under international coordination, as well as regulating radio use to ensure a favorable radio wave environment free from interference and disturbance, engaging in research and development to expand the radio spectrum, and conducting technical testing on effective uses of radio technology.

(2) Future issues and directions

Radio waves are becoming the foundation for new businesses such as next-generation mobility and smart society endeavors, as exemplified by the evolution from 5G to Beyond5G, and wireless networks are developing into integrated ones that encompass land, sea, air, and space. As digitalization progresses, wireless use is accelerating in addition to wired use, and the introduction of wireless technology is becoming an important key to the success or failure of digital businesses. The radio wave environment must be improved so that technological innovations can be implemented quickly as new wireless systems and services, leading to economic growth.

To further promote the effective use of radio waves to that end, the systems needed to realize non-terrestrial networks (NTN), etc., must be developed to cope with the expansion of radio wave use in all spaces. Radio station licensing procedures, etc., must be simplified, made more flexible, and expedited. Frequency migration, reorganization, and sharing must be promoted to meet the rapidly growing demand for radio frequencies. Measures that help bring about safe and secure societies, such as measures to cope with natural disasters and to ensure the proper use of radio waves, are also required.

2. Radio policy for digital business expansion

(1) Promoting the effective use of radio waves to expand digital business

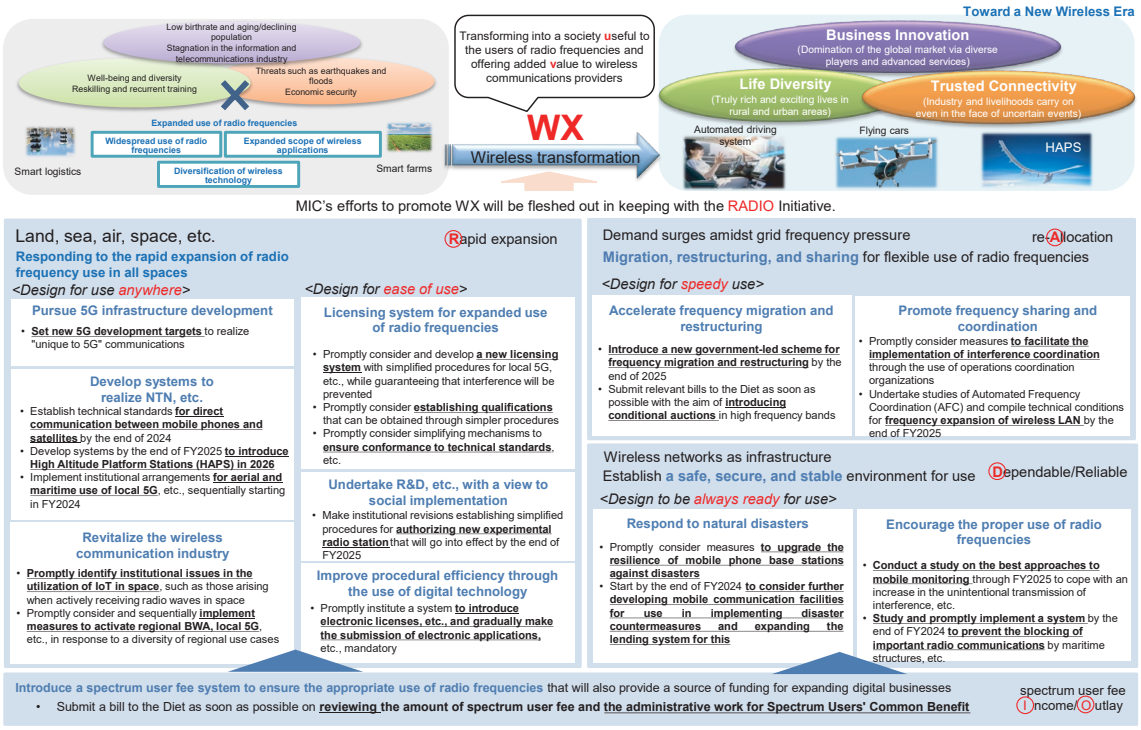
With the advancement of technology, the use of radio waves has spread and evolved in every space – including land, sea, air and space – and every socioeconomic activity, thus has become a source of innovative creation. It is therefore important to use radio waves as a foundation for growth in the digital society to further expand business opportunities.

Against this backdrop, MIC held meetings of the "Radio Policy Advisory Panel for Expanding Digital Business" from November 2023 to discuss the future vision of radio wave utilization, set new targets for the effective use of radio waves, and formulate measures to achieve them, all with a view to expanding digital business. The Panel submitted its findings via a report in August 2024.

Based on the Panel's discussions, MIC formulated the "WX Promotion Action Plan" **(Figure 2-2-3-1)**, which specifies measures to be taken by MIC.

This Action Plan outlines MIC's efforts in pursuit of wireless transformation (WX): (1) responding to the rapid expansion of radio wave use in all spaces, including land, sea, air, and space; (2) migrating, reorganizing, and sharing frequencies to ensure the flexible use of radio waves, for which demand is rapidly increasing amid the frequency congestion; (3) developing an environment for secure, safe, and stable use of wireless networks as infrastructure; and (4) establishing a spectrum user fee system to ensure the appropriate use of radio waves as a source of digital business expansion.

Figure 2-2-3-1 WX Promotion Action Plan



(2) Measures to encourage the effective use of radio waves

MIC has implemented necessary institutional arrangements based on the report of the "Radio Policy Advisory Panel for Expanding Digital Business" and the WX Promotion Action Plan, and in February 2025 it submitted to the Diet a bill to partially amend the Radio Act and the Broadcasting Act that included the establishment of a system for selecting parties capable of setting up specified high frequency radio stations based on price, the digitization of radio station licenses and certificates for basic broadcasters, and a revamping of the spectrum user fee system in order to promote the effective use of radio waves and streamline regulations in response to advances in information and communication technologies; the bill was passed into law in April 2025.

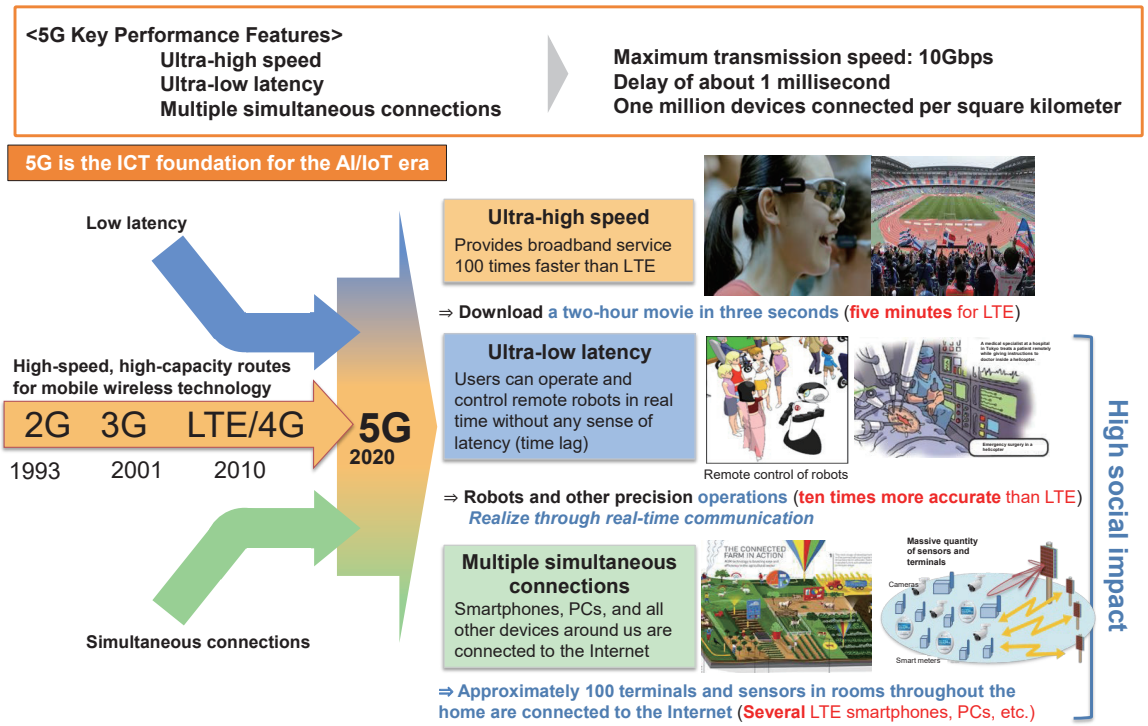
3. Digital infrastructure development

(1) 5G diffusion and deployment

A Features of 5G, etc.

5G will enable communications not only with ultra-high speed, an advancement of 4G, but also with ultra-low latency, which will enable the smooth operation of robots and other devices even in remote areas, and multiple simultaneous connections, with many devices connected to the network simultaneously (**Figure 2-2-3-2**). There are thus high expectations for 5G as an indispensable infrastructure for realizing an IoT society in which every "thing" is connected to the Internet. In fact, specific initiatives utilizing 5G are now underway in various regions and sectors, including automated tractor driving, product inspections using AI-based image analysis, and remote control of construction equipment.

Figure 2-2-3-2 5G features



MIC is actively contributing to the 5G international standardization activities of the International Telecommunication Union (ITU), based on the recognition that 5G will become part of the common global socioeconomic infrastructure.

B Development of 5G, etc., based on the "Digital Infrastructure Development Plan 2030"

Mobile networks, including 5G, have deeply penetrated people's lives and economic activities, and their further enhancement is essential for digitalizing society as a whole and for maintaining and developing social functions in the midst of rapid population decline and aging.

In Japan, the government has implemented a series of institutional improvements and frequency allocations to promote the spread of 5G ever since the first allocation of frequencies for 5G in April 2019, and set a target in its "Infrastructure Development Plan for a Digital Garden City Nation" of achieving 5G population coverage of 95% nationwide by the end of FY2023. As a result, 5G infrastructure is steadily being developed, with the 5G population coverage reaching 98.1% nationwide as of the end of FY2023.

On the other hand, mobile communication volume is expected to further increase due to the spread of AI, etc., so, in addition to developing robust and well-balanced 5G infrastructure substantial enough to meet communication demand and usage scenarios and realizing advanced communication services utilizing 5G's features, it is necessary to put in place a "connectivity everywhere" communication environment, including non-residential areas outside the 5G population coverage, from the viewpoints of local safety and security and regional revitalization.

Against this backdrop, MIC is following the aforementioned Digital Infrastructure Development Plan 2030 to promote the use of high-frequency bands (sub-6[1] and millimeter waves[2]) that permit high-speed, large-capacity communications and the spread of new technologies such as 5G SA (Stand Alone), which enables multiple simultaneous connections and communication services that take advantage of low latency. For roads and other non-residential areas where a communication environment needs to be established, the aim is to adopt a variety of means to make the necessary infrastructure improvements.

Specific measures to achieve this Plan include the allocation of new 5G frequencies, support for the development of 5G base stations in disadvantaged areas through subsidies under the "Mobile Phone Area Development Project," assistance through tax measures, and promotion of infrastructure sharing.

Furthermore, MIC has taken an integrated approach in developing local digital infrastructure that flexibly combines local 5G and various other wireless systems and putting into practice advanced solutions that utilize this digital infrastructure in order to implement wireless and IoT solutions that meet local needs in ways that allow residents to experience first-hand the convenience of such solutions.

[1] The band above 3.6 GHz and below 6 GHz allocated for mobile phones
[2] The band above 6 GHz allocated for mobile phones

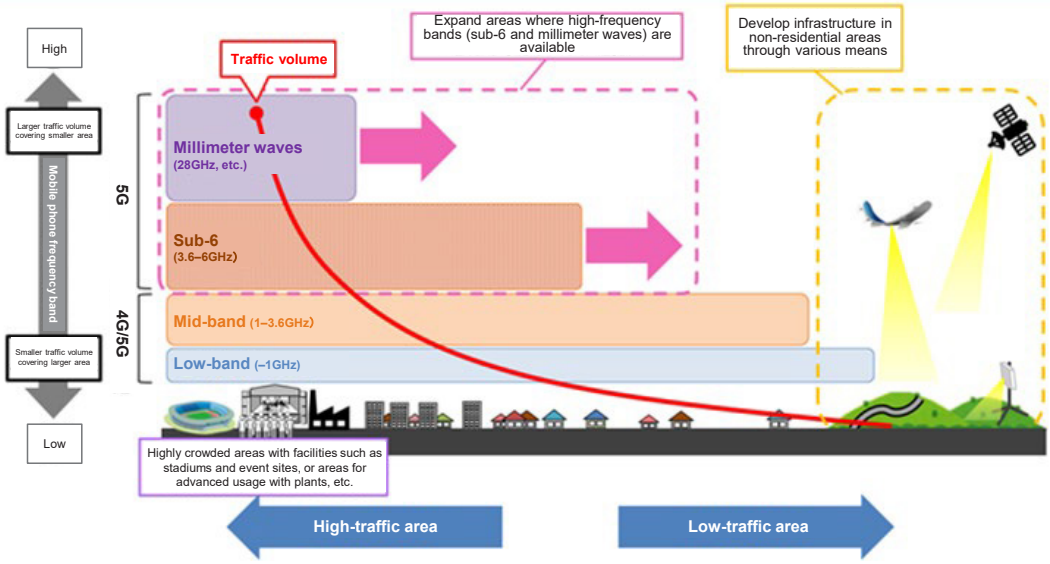
C Establishment of new development targets for 5G infrastructure

Further enhancement of the 5G infrastructure is necessary to provide users with distinctive 5G mobile phone services for the future 5G deployment phase.

Against this backdrop, MIC set new development targets for high frequency bands such as sub-6[3] and [4]millimeter wave, which can take advantage of the high-speed and large-capacity communications characteristic of 5G, and for new technologies such as SA (Stand Alone), which offers multiple simultaneous connections and ultra-low latency, in the WX Promotion Strategy Action Plan it formulated in August 2024 **(Figure 2-2-3-3)**.

Figure 2-2-3-3 Concept of Mobile Network Development to be Achieved by Around 2030

Aim to **develop well-balanced and robust networks** tailored to various traffic demands and use cases
- For **wider adoption of high-quality communications services leveraging the strengths of 5G, expand areas where high-frequency bands (sub-6 and millimeter waves) are available.**
- To secure communication environments including **non-residential areas, accelerate flexible infrastructure development through various means**



(2) Working to establish a connectivity environment that operates even during disasters

The earthquake that struck the Noto region of Ishikawa Prefecture in January 2024 had a tremendous impact on information and telecommunications infrastructure, causing mobile phone service to be unavailable for extended periods of time and hampering information acquisition and rescue efforts in the affected areas. Applying the lessons learned from this disaster, MIC decided to promote efforts to make mobile phone base stations more robust through the installation of large-capacity storage batteries and the use of satellite links, in order to avoid outages at mobile phone base stations due to power blackouts or transmission line breaks during disasters.

(3) Beyond 5G

Beyond 5G (6G), the next generation of information and communications infrastructure, is expected to become the foundation for all industrial and social activities in the 2030s. MIC compiled the “Beyond 5G Promotion Strategy - Roadmap to 6G” in June 2020 and the “Strategy for Realizing Next-generation Information and Communications Infrastructure to Support an AI Society - Beyond 5G Promotion Strategy 2.0” in August 2024, both of which advocate, among other actions, thoroughly promoting and utilizing 5G, securing frequencies to meet growing traffic demand, and undertaking efforts to upgrade radio access networks (RANs).

In keeping with these strategies, MIC has been working on upgrading the interconnection and operational testing environment for base station equipment using open standards, improving the efficiency of RAN control using AI, developing the necessary systems for domestic introduction through technical demonstrations of High Altitude Platform Stations (HAPS), and conducting research and development related to high-speed, high-capacity HAPS communications.

The International Telecommunication Union’s Radiocommunication Sector (ITU-R) is responsible for studying and formulating international standards for wireless communication technologies, radio frequencies, etc. Within ITU-R, Working Party 5D (WP5D) of Study

[3] The band above 3.6 GHz and below 6 GHz allocated for mobile phones
[4] The band above 6 GHz allocated for mobile phones

Group 5 (SG5), a special subgroup chaired by Japan whose area of focus is mobile communications, is working to develop standards for 6G with a target completion date of around 2030, and is also studying available frequency bands with 6G in mind. MIC is pursuing standardization activities within the Working Party by inputting documents contributed by the Japanese government in cooperation with relevant Japanese organizations and businesses, and plans to hold a meeting in Japan in June 2025 to maintain and enhance Japan's presence in the Working Party.

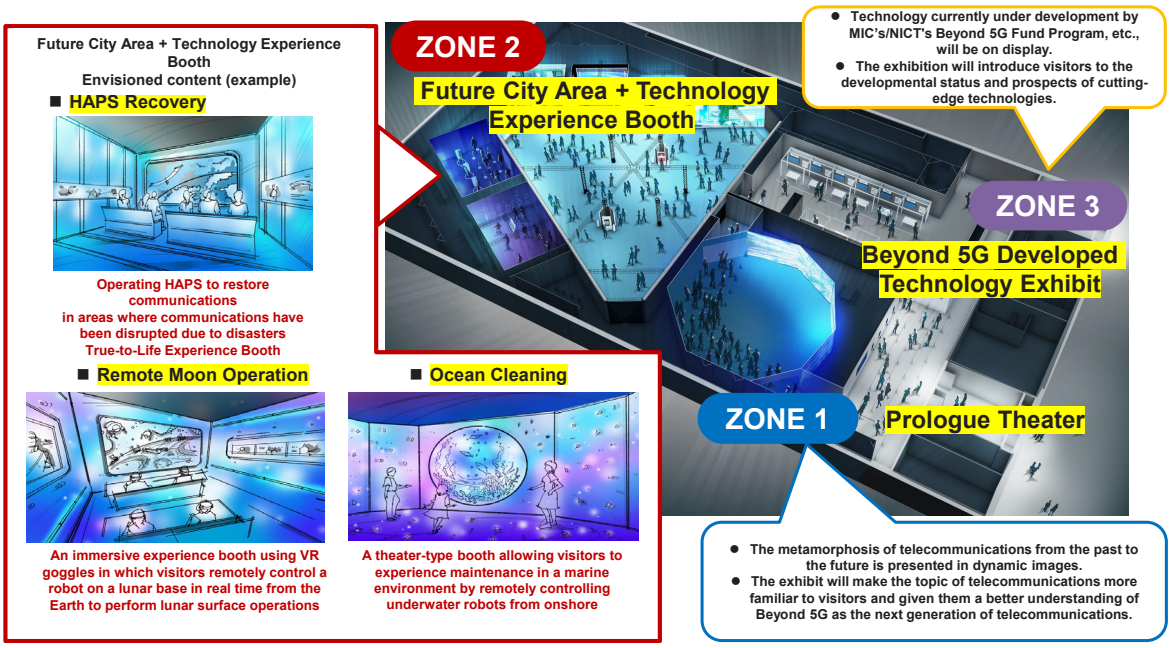
(4) "Beyond 5G-ready Showcase" at Expo 2025 Osaka/Kansai

As part of the initiatives based on the "Strategy for Realizing Next-generation Information and Communications Infrastructure to Support an AI Society - Beyond 5G Promotion Strategy 2.0", MIC hosted the "Beyond 5G-ready Showcase" at Expo 2025 Osaka/Kansai from Monday, May 26 to Tuesday, June 3, 2025, to provide the world with information on Japan's Beyond 5G endeavors.

The event offered a wide range of Expo visitors the opportunity to experience an envisioned future society and lifestyle made possible by Beyond 5G, with an emphasis on reality and immersion. In conjunction with this, an exhibition of Japan's R&D and cutting-edge technologies relevant to Beyond 5G was held to promote international collaboration and standardization activities aimed at fostering connections, encouraging social implementation and international deployment **(Figure 2-2-3-4)**.

A virtual event is also being held from Monday, May 26 to Monday, October 13, 2025 to allow visitors from Japan and abroad to experience the same content as the on-site event through an online virtual space.

Figure 2-2-3-4 Beyond 5G-ready Showcase venue layout and main contents



4. Promotion of advanced radio frequency utilization systems

(1) Non-terrestrial networks

Non-terrestrial networks (NTNs) such as HAPS and satellite communications can efficiently cover remote islands, maritime areas, and mountainous regions by connecting land, sea, air, and space, and can provide communication services even in areas where communication infrastructure is not yet developed. They are also useful as a means of communication in emergencies, including natural disasters.

Based on the "Digital Infrastructure Development Plan 2030" (formulated in June 2025), MIC is undertaking efforts to promote the introduction of services, including the development of systems pertinent to the early deployment of NTNs in Japan.

Specifically, MIC is pushing for the development of domestic systems through technological demonstrations in addition to R&D support for HAPS, and is working with relevant government ministries and agencies for social implementation and overseas deployment. MIC is also striving to secure more frequencies to expand the frequencies available for HAPS. Japan led the discussions at the World Radiocommunication Conference 2023 (WRC-23), where it was decided that the 1.7 GHz, 2 GHz, and 2.6 GHz bands would be made available for the use of HAPS as mobile phone base stations worldwide, the 700 MHz band would be available region-wide in Region 1 (Europe and Africa) and Region 2 (North and South America), as well as in 14 countries including Japan in Region 3 (Asia).

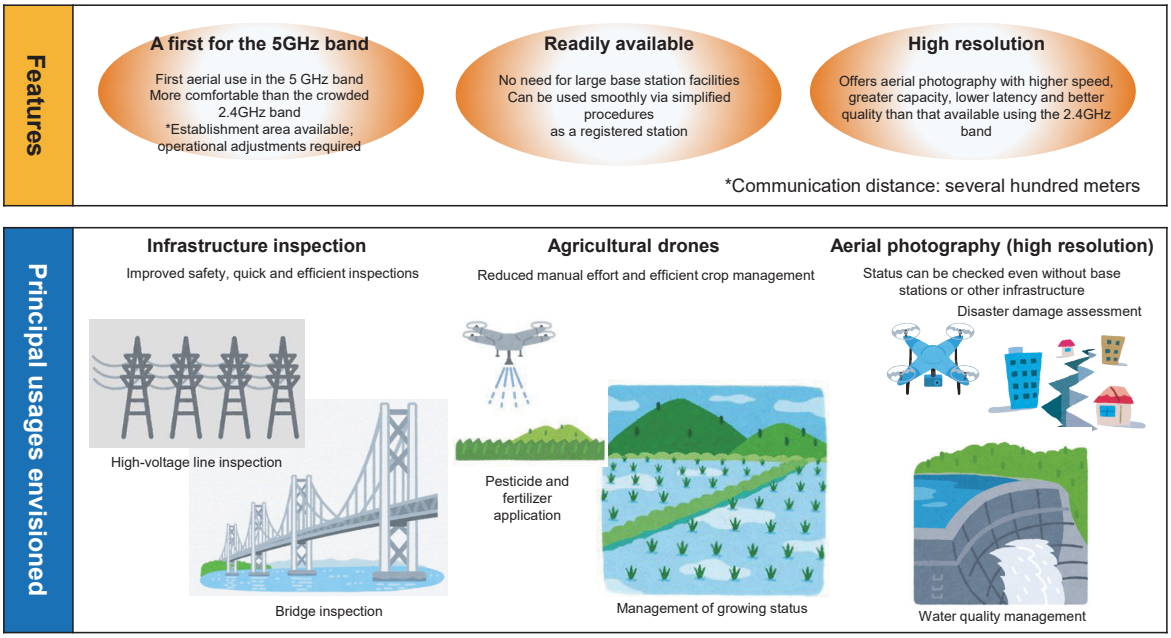
In the area of satellite communications, MIC has introduced frameworks for a satellite constellation that will operate a large number of non-geostationary satellites in unison to provide high-speed, high-capacity communication services, and developed the necessary systems for direct communication services between mobile phone terminals and satellites; MIC remains committed to securing frequencies and developing systems as needed.

(2) Upgrading wireless LAN

Wireless LAN is a standard established by the Institute of Electrical and Electronics Engineers (IEEE) and used worldwide for smartphones and other devices. In Japan, access points have been installed in public places such as train stations and airports, and they have become one of the key communication infrastructures within the nation's social infrastructure, not only for offices and homes, but also for outdoor services, school education, and communications in disaster-stricken areas.

MIC continues to study the upgrading of wireless LANs based on their introduction in other countries and on domestic needs. The need for outdoor and aerial use of devices incorporating wireless LAN has increased in recent years due to the expanding use of drones and other devices that utilize wireless LAN technology. In view of the current situation, especially the shortage of frequency channels available for aerial applications, studies were conducted from 2023 to expand aerial use of the 5 GHz band. The "Technical Conditions for Aerial Use of 5.2 GHz Band Wireless LAN" was compiled in December 2024, and the Radio Equipment Rules (Radio Regulatory Commission Rules No. 18 of 1950) and other regulations were amended in April 2025. With the introduction of 5.2GHz band wireless LAN for aerial applications, it is expected that its use will expand to infrastructure inspections of bridges and other structures, and to the creation of images from aerial photography **(Figure 2-2-3-5)**.

Figure 2-2-3-5 Principal aerial usages of 5.2GHz band wireless LANs



Furthermore, MIC is studying the technical conditions for frequency sharing in connection with frequency band expansion, including outdoor use of the 6 GHz band (5925 MHz-6425 MHz) wireless LAN and outdoor use of the 6.5 GHz band (6425 MHz-7125 MHz), in order to establish wireless LAN systems that can cope with future mobile communication traffic growth and diverse usage needs. In FY2024, MIC conducted a technical study on the Automated Frequency Coordination (AFC) system[5], which is needed to prevent harmful interference to existing radio stations using the aforementioned frequency bands, for building and verifying the operation of this system as well as studies on a framework and operational model for operating the AFC system.

(3) Expansion of radio frequency use in drones

Recent years have seen drones used in a variety of fields, including agriculture, infrastructure inspection, logistics, disaster response, and entertainment. The uses of radio waves are essential when deploying drones. They include transmitting remote IDs that identify individual drones, sending commands to control drones from the ground, and transmitting images taken by drones to pilots and other users, and suitable radio systems are used for each of these purposes **(Figure 2-2-3-6)**.

[5] A system that automatically notifies the user of available frequencies and maximum transmission power in order to avoid harmful interference to existing radio stations, etc., using the 6 GHz and 6.5 GHz bands.

Figure 2-2-3-6 Radio systems used for drones (as of December 2024)

Name/type of radio system	Frequency band	Maximum transmission power	(Reference)*4 Transmission speed	(Reference)*4 Communication distance	(Reference)*4 Utilization	Radio station license	Characteristics, usages
Low-power radio for radio-controlled operation	73MHz band, etc.	*1	5kbps	About 1km	Piloting	Not required	Easy to use for hobby applications, etc. Mainly used in industry for pesticide spraying
Unmanned Mobile Image Transmission System	169MHz band	10mW	Up to several hundred kbps	About 5km	Piloting Image transmission Data transmission	Required	Mainly used for aerial photography, infrastructure inspections, surveying, etc. (used for piloting/control backup, etc.)
Specified low-power wireless base station	920MHz band	20mW	Up to 1Mbps	About 500m	Piloting	Not required*2	Used for piloting
2.4GHz band wireless LAN (low-power data communication system)	2.4GHz band (2400-2483.5 MHz)	10mw/MHz (3mW/MHz for FH system)	Up to 54Mbps	About 1km	Piloting Image transmission Data transmission	Not required*2	Most widely used for piloting, image transmission, and other applications. Crowded due to high number of users.
Unmanned Mobile Image Transmission System	2.4GHz band (2483.5 to 2494 MHz)	1W	Up to tens of Mbps	About 10km	Piloting Image transmission Data transmission	Required	Mainly used for aerial photography, infrastructure inspection, surveying, etc.
Unmanned Mobile Image Transmission System	5.7GHz band	1W	Tens of Mbps	About 5km	Piloting Image transmission Data transmission	Required	Mainly used for aerial photography, infrastructure inspection, surveying, etc.
Mobile phones (4G/5G) (limited to FDD)	800MHz band, etc.	200mW (base station control)	Tens of Mbps	Within mobile phone coverage area	Piloting Image transmission Data transmission	*3	Capable of out-of-sight communications and remote operation, and used for infrastructure inspection, logistics, video distribution, etc. Not available outside mobile phone coverage areas.

*1 At a distance of 500m, the electric field strength is 200μV/m or less

*2 Radio stations that do not require a license are limited to those using radio equipment that has received technical standards compliance certification or construction design certification confirming and certifying in advance that the radio equipment complies with the technical standards stipulated in the Radio Act.

*3 Operated under license by a mobile phone carrier

*4 Not stipulated in laws and regulations but based on interviews with manufacturers, etc.→Only radio equipment displaying the "Technical Conformity Mark" shown at right may be used.

MIC is pursuing efforts to improve the aerial radio wave environment in light of expanding needs for the utilization of drones. The principal efforts other than the aforementioned wireless LANs are as follows:

- Aerial use of mobile phones, etc.

Based on the need to mount mobile phones on drones, etc., and use mobile phone networks for drone control, image transmission, data transfer, etc., MIC developed a system in December 2020 to enable LTE aerial use in the 800MHz, 900MHz, 1.7GHz and 2GHz FDD frequency bands through simple procedures, and MIC removed altitude restrictions and enabled the use of 5G systems in April 2023. Furthermore, MIC set up a system in May 2025 to allow aerial use of the TDD frequency band used for 5G, local 5G, etc., in order to meet needs such as high-speed uploading of video data taken by drones, etc.

- Specific experimental test station for drones in the 5.8GHz band

Drones using the 5.8 GHz band are widely employed in the United States, Europe, China, South Korea, and other countries. In Japan, the 5.8 GHz band is used for DSRC, a wireless system for ITS, etc., but given the need to test functionality on the same 5.8 GHz band in Japan, MIC has worked to include the 5.8 GHz band under the focus of a specified experimental testing station system that allows the establishment of experimental testing stations through simple procedures. After studying conditions such as frequencies that do not affect existing DSRC and other radio stations and areas where they will be used, MIC promulgated a public notice on 5.8 GHz-band specific experimental test stations for drones in November 2024.

(4) Intelligent Transport Systems

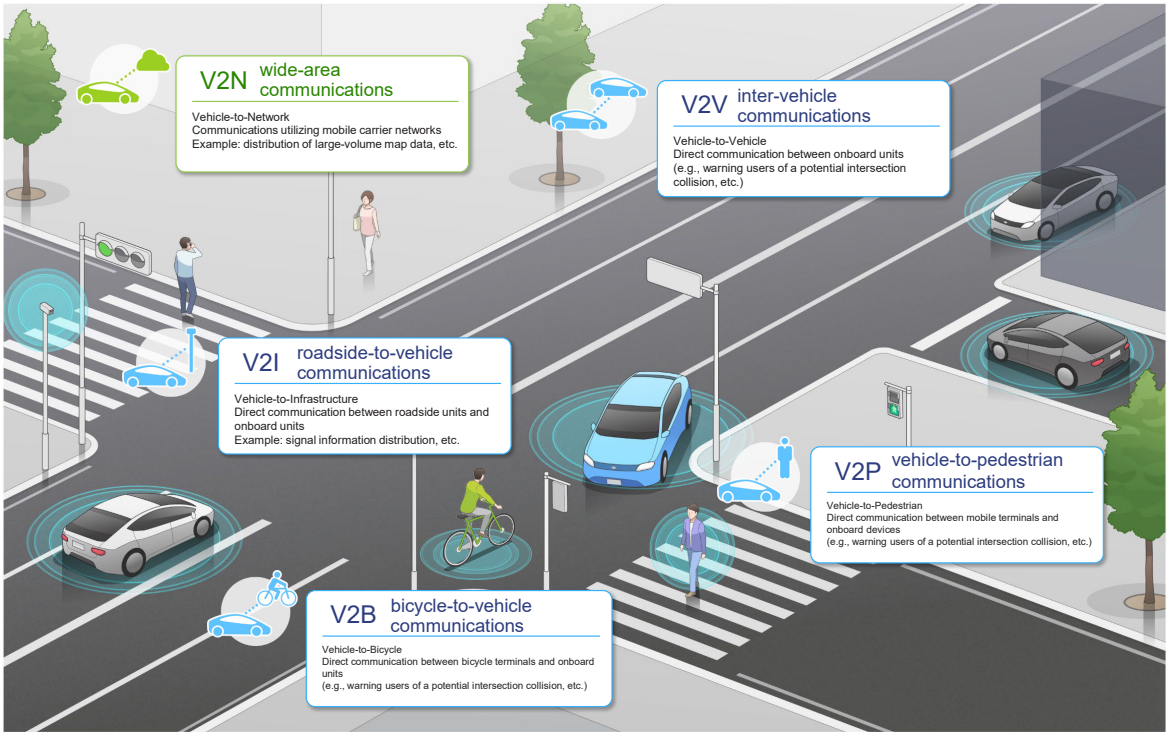
Intelligent Transport Systems (ITS), which connect people, roads, and vehicles using information and communication technology, contribute to the safe and comfortable movement of people and goods by reducing traffic accidents and traffic congestion.

MIC has been allocating frequencies used in the Vehicle Information and Communication System (VICS), the Electronic Toll Collection System (ETC), on-board radar systems, and 700 MHz-band Intelligent Transport Systems, formulating technical standards for these systems, and promoting their diffusion.

Automated driving is currently being tested and im-

plemented worldwide, mainly in Europe and the US. In addition to onboard sensors such as cameras and radar, V2X (vehicle to everything) communication, which exchanges information with surrounding vehicles and roadside infrastructure, is expected to play an important role in the realization of advanced automated driving such as merge and diverge assistance (**Figure 2-2-3-7**).

Figure 2-2-3-7 V2X communication



Given that V2X communication systems utilizing the 5.9 GHz band are being tested and implemented worldwide, Japan is also studying the idea of additionally allocating the 5.9 GHz band for V2X communication. After MIC's "Study Group on Next-generation ITS Communications in the Era of Automated Driving" concluded in August 2023 to consider allocating up to 30 MHz between 5,895 MHz and 5,925 MHz for V2X communications, taking into consideration international frequency harmonization, interference with existing radio stations, and other factors, 20.5 billion yen was allocated in the FY2023 supplementary budget to "Project for Development of Digital Infrastructure for the Social Implementation of Automated Driving"; the environment is now being established for the early introduction of V2X communications in the 5.9 GHz band. The "Automated Driving Infrastructure Panel" jointly established by the Ministry of Land, Infrastructure, Transport and Tourism, the National Police Agency and MIC has been discussing the infrastructure most conducive to automated driving since June 2024. Based on the Panel's discussions, MIC will begin working in cooperation with relevant ministries and agencies on an automated driving truck demonstration using 5.9 GHz-band V2X and V2N communications on the Shin-Toumei Expressway and other roads in FY2025.

In addition, MIC is contributing to draft reports prepared by the International Telecommunication Union's Radiocommunication Sector (ITU-R), disseminating information at international conferences such as the ITS World Congress, and promoting the spread of Japanese technology in India and other Asian countries in order to aid in the international standardization and overseas deployment of Japan's ITS technology.

(5) Spatial transmission wireless power transmission systems

Spatial transmission wireless power transmission systems transmit power over a distance of several meters by sending and receiving radio waves without a wired connection, and they are expected to be used to supply power to sensor devices used in factories. These systems enable low power supply without connecting charging cables or replacing batteries, which should improve convenience and enable flexible installation of sensor devices, helping bring about Society 5.0 through the use of IoT.

Based on past studies on frequency sharing with other radio systems, radio safety, technical conditions, and the establishment of a smooth operational coordination mechanism, etc., for the practical application of these systems, MIC in May 2022 established a system for on-premises radio stations in the three frequency bands of 920 MHz, 2.4 GHz, and 5.7 GHz for use indoors if certain requirements are met.

5. Promoting overseas deployment of radio wave systems

Radio monitoring systems and other technologies/systems are playing an increasingly significant role in ensuring the safe and secure use of radio waves, and their importance has been recognized in Southeast Asian countries, where the use of radio waves is rapidly expanding, and elsewhere. It is therefore vital that Japan contribute to the international community by deploying overseas those radio systems for which Japan has superior technology and by developing Japan's radio infrastructure and services into promising businesses that are internationally competitive, spurring further growth in its own economy. The public and private sectors are cooperating from this perspective in pursuing strategic initiatives for the global development of radio systems deemed to be among Japan's strengths, with a focus on Asian countries. Specifically, MIC has been implementing the "Project for Promoting the International Cooperative Use of Frequencies" since FY2017 for the purpose of ensuring the global superiority of these technologies through the overseas deployment of radio systems, and it has been conducting demonstration testing in Japan and overseas as well as people-to-people exchanges at the user level so that technologies that use frequencies quite efficiently in ways that accord with radio frequency conditions in Japan can be established as international standards.

In response to growing global demand for secure and reliable digital infrastructure, MIC is also working on the overseas deployment of Japanese companies' Open RAN and vRAN as well as systems that utilize these. In Southeast Asian countries such as the Philippines, for example, MIC is conducting surveys and testing for the deployment of Open RAN and advocating wider adoption of Open 5G.

"Japan OTIC," a testing and certification center that complies with the O-RAN Alliance standards, was established in Yokosuka Telecom Research Park in December 2022 by several domestic telecommunications carriers and other companies interested in promoting the Open RAN ecosystem in Japan with a view to overseas deployment. Its first certification was issued in June 2023, and a variety of workshops are held regularly to promote the use of Japan OTIC.

Since FY2024, MIC has also been conducting technical tests on an interoperability verification environment that can simulate the networks of multiple telecommunications carriers in Japan and overseas.

6. Improving radio environments

(1) Pursuing bioelectromagnetic environmental measures

MIC is promoting the development of safe and secure environments for the use of radio waves.

More concretely, MIC has formulated "Radio Wave Protection Guidelines[6]" to prevent radio waves from having undesirable effects on human health, and has stipulated part of the Guidelines as safety standards on the strength of radio waves. These reflect the results [7]of many years of research on radio safety. They also ensure equivalence with international guidelines. No causal relationship between radio waves at levels below these safety standards and adverse health effects has been confirmed in previous investigations and studies. MIC continues to educate the public about radio wave safety by providing telephone consultations, holding information meetings, and distributing leaflets[8].

The "Research Survey on the Impact of Radio Waves on Medical Devices, etc.[9]" is conducted annually, and the findings obtained from the surveys to date have been compiled as "Guidelines for Safeguarding Implantable Medical Devices, etc., from the Impact of Radio Waves from Radio Wave-emitting Devices[10]." As the use of radio waves at medical institutions continues to grow, MIC is also working to inform medical professionals and others of necessary precautions and radio wave management practices for medical telemetry, mobile phones, wireless LAN, etc., by delivering briefings on demand to ensure safe and secure radio wave use. As a related initiative, MIC has been engaged in a radio shield countermeasure project for medical facilities since FY2017, making use of a subsidy provided to help cover the expenses for projects supporting the dissemination of radio systems in order to create environments in which mobile phones can be used safely and securely within medical facilities.

(2) Implementing electromagnetic interference countermeasures

The widespread use of electrical and electronic devices has made it important to take measures to protect radio use from unwanted radio waves emitted from various devices and equipment. Accordingly, the "Radio Use Environment Committee[11]" established under the Information and Communications Council's Information and Communications Technology Subcommittee conducts research and studies on electromagnetic interference

[6] Radio Radiation Protection Guidelines https://www.tele.soumu.go.jp/j/sys/ele/medical/protect/
[7] Research on Radio Safety at MIC: https://www.tele.soumu.go.jp/j/sys/ele/seitai/index.htm
[8] Radio Safety Initiatives: https://www.tele.soumu.go.jp/j/sys/ele/index.htm
[9] Research on the effects of radio waves on medical devices: https://www.tele.soumu.go.jp/j/sys/ele/seitai/chis/index.htm
[10] Guidelines for Safeguarding Implantable Medical Devices, etc., from the Impact of Radio Waves from Radio Wave-emitting Devices: https://www.tele.soumu.go.jp/resource/j/ele/medical/guide.pdf
[11] Radio Use Environment Committee: https://www.soumu.go.jp/main_sosiki/joho_tsusin/policyreports/joho_tsusin/denpa_kankyou/index.html

countermeasures and contributes to deliberations on international standards by the Comité International Spécial des Perturbations des Radiélectriques (CISPR). In response to reports from the Information and Communications Council, MIC is working to eliminate interference to radio equipment and prevent interference to electrical and electronic equipment caused by unwanted radio waves by pursuing standardization in Japan.

International standards for the wireless power transmission systems used in electric vehicles (EVs), multimedia devices, and home appliances are now being given full consideration and, as part of its international activities with respect to CISPR, Japan has been taking the lead in vigorously studying technologies to prevent the leakage of radio waves emitted from wireless power transmission systems used in electric vehicles from interfering with existing radio stations.

Robots have been introduced in factories and distribution centers in recent years, and wireless power transmission systems are expected to be installed as a means of supplying power to these robots. The Radio Use Environment Committee has verified shared use with other radio equipment and conformity to the Radio Radiation Protection Guidelines, etc., and examined technical conditions such as the allowable values and measurement methods for leaked radio waves emitted from wireless power transmission systems. Based on these examinations, MIC issued a partial report in June 2024 on the technical conditions for field-coupling wireless power transmission systems using 6.7 MHz-band frequencies within the context of the technical conditions for wireless power transmission systems, and institutional improvements were made by revising the Regulations for the Enforcement of the Radio Act in December 2024.

(3) Preventing radio interference and jamming

To eliminate interference and maintain a favorable environment for the use of radio waves amid the expanded adoption of fifth-generation (5G) mobile phones and other new radio wave applications, MIC is monitoring radio waves to eliminate interference and taking stronger steps against radio equipment that does not conform to technical standards (non-compliant equipment) that could be the cause of such interference.

More specifically, MIC's efforts include trial purchase test of radio equipment[9] in which MIC purchases radio equipment that is widely available on the market through online shopping and other means, measuring whether the equipment's radio wave strength complies with the standards for "extremely low-power radio equipment" [12]as stipulated in the Radio Act, and publishes the results annually as information to protect general consumers, all for the sake of keeping them from violating the Radio Act by purchasing and using equipment that does not conform to the established standards (illegal establishment of radio stations) or causing interference with the operation of other radio stations.

MIC requests dealers of radio equipment determined through a trial purchase test not to be compliant with the standards for extremely low-power radio equipment to ensure that they only handle radio equipment that conforms to the technical standards and refrain from selling non-compliant equipment. Additionally, MIC formulated the "Guidelines for preventing the distribution of wireless devices that do not conform with technical regulations" in FY2020 to control the distribution of non-standard equipment by clarifying the obligations of manufacturers, importers, and distributors of radio equipment and the voluntary efforts of Internet shopping mall operators.

[12] Extremely low-power wireless devices: https://www.tele.soumu.go.jp/j/ref/material/rule/
9Implemented since FY2013 Results of wireless equipment trial purchase tests: https://www.tele.soumu.go.jp/j/adm/monitoring/illegal/result/