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Air Law

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Latest Development in Diverse Uses of the Airspace (Part 1)

New Type Utilization of Airspace and Non-Terrestrial Networks (NTN) such as HAP

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1. Introduction

Discussions in Japan on diversified use of airspace from a legal perspective have been accelerating in recent years. Taking drones for an example, the legal framework has been developed since the introduction of the precise regulation into the *Civil Aeronautics Act* (the "CAA") in 2015. This framework has provided more predictability to businesses and has facilitated the commercial use of drones. In addition, the demonstration flights of an Advanced Air Mobility (AAM, commonly called a "flying car" in Japan) at the recently concluded Osaka-Kansai Expo attracted considerable public attention. Leveraging the Expo as a key milestone, discussions between private sector and the Regulator has progressed, and regulations have been established.

More recently, in October 2025, the newly established “Working Group on Radio-Wave Use in Airspace” (the “Working Group”) has been kicked off under the Ministry of Internal Affairs and Communications (MIC), the Authority responsible for radio wave governance, drawing significant attention. This is another important step toward better regulation on the diversified use of airspace.

Our firm has long provided extensive advice on aviation- and airport-related legal matters, led by members of our firm with substantial practical experience and including members who have been seconded to the regulatory sector (e.g. Ministry of Land, Infrastructure, Transport and Tourism (the “MLIT”). In response to growing demand, our aviation team has decided to launch a series of newsletters to provide updates on the latest developments in air law.

The Osaka-Kansai Expo has ended, but technological innovation continues to move forward: how will Japan’s airspace be utilized in the future, and what regulatory frameworks will emerge?

With such questions in mind, we aim to explore the future of airspace law from multiple perspectives. While future issues of this newsletter will primarily address legal frameworks related to aviation and airports, this first edition focuses on timely developments in radio-wave regulation, aiming to provide an overview of discussions held by the aforementioned Working Group.

This article first outlines the broader landscape of airspace utilization in Japan, and then examines recent trends in the field of communications.

2. Background against Discussions on the Diversified Use of Airspace

2.1. Overview of Airspace Utilization

Traditionally, “airspace” has been understood as the domain in which certain aircraft operate—especially airplanes carrying passengers or cargo, and helicopters (“rotary-wing aircraft” under the CAA) used for aerial photography, sightseeing, rescue missions, and other purposes. These aircraft generally share several characteristics: they run on fuel (rather than electricity), rely on lift generated by wings moving through the air, and are capable of carrying human occupants.

Japan’s aviation-related regulatory framework, including the CAA, was originally designed with such conventional forms of airspace use in mind. For example, unmanned vehicles incapable of carrying persons are still excluded from the definition of “aircraft” under the CAA.

In the meantime, advances in aviation technology have diversified the ways in which airspace is utilized. To begin with, in lower-altitude zones (mainly below 150 meters) below the level typically used for conventional aviation operations, commercial use of drones has expanded rapidly. Initially adopted primarily for agricultural and infrastructure-related purposes, drones are now expected to serve a much wider range of functions, including logistics. However, following a sensational incident in 2015 – the unauthorized drone intrusion into the Prime Minister’s Office

– the CAA was amended thereafter to introduce regulations governing “unmanned aircraft.” Further amendments, effective in 2022, introduced even more detailed rules, which have been frequently updated.

Another emerging field of activity in low-altitude airspace is AAM, which have attracted significant attention. These vehicles are generally described as “next-generation air mobility systems” in Japan — defined as “user-friendly and sustainable modes of aerial transport enabled by electrification, automation, and vertical take-off and landing technology” — and are envisioned to operate primarily at higher altitudes than drones.

Ahead of the Osaka-Kansai Expo, a Public-Private Council for the Air Mobility Revolution was established, and substantial regulatory development—including amendments to the CAA—was carried out based on its discussions. Although commercial operations at the Expo did not materialize as initially planned, demonstration flights drew strong public interest, and further progress in this area is anticipated.

In addition to low-altitude innovations, activity above the typical altitude of civil aviation operations is also attracting attention. One area close to commercialization involves building platforms in the stratosphere to enable new communications services, such as high-altitude platform stations (HAPS), discussed later. Technological development is also advancing in next-generation point-to-point (P2P) transportation, which envisions ultra-high-speed travel between distant points using hypersonic vehicles operating at high altitudes (with sub-orbital flights passing through outer space), as well as “rockoons”—rockets launched from stratospheric platforms. These concepts are increasingly discussed in the context of space-related legal frameworks.

2.2. Relationship Between Airspace Activities and Radio Waves

While initiatives by the MLIT, which oversees aviation governance, and the Ministry of Economy, Trade and Industry (METI), which is responsible for industrial policy, often draw attention in discussions on the utilization of airspace, the MIC—responsible for radio-wave administration—also plays a critical role in these matters. This importance is illustrated by the establishment of the Working Group referenced at the outset of this article.

Aviation activities and radio waves are inseparable. For conventional aircraft, radio navigation is one of the means used to ensure flight in the correct direction, and radio communication between aircraft and ground stations is essential for determining aircraft position. Aircraft are also equipped with radio altimeters to measure altitude, which likewise rely on radio waves. Furthermore, aircraft avoid collisions through radio-based communication systems between aircraft. In air traffic control as well, radio communication between controllers and aircraft is indispensable throughout all phases of flight, from surface movement at airports to takeoff, en-route operations, and landings.

The importance of radio waves applies equally to the new aviation activities mentioned in Section

2.1 above. At the same time, because radio waves in adjacent frequency bands may interfere with one another, the allocation of frequencies at both the international and domestic levels is necessary. For this reason, spectrum bands are sometimes referred to as “limited natural resources.” The diversification of airspace use necessarily creates new demands on radio-wave administration to accommodate these emerging applications.

Another noteworthy point is that, in addition to considering how rules governing radio-wave administration should respond to diversified airspace uses, efforts are underway to develop new information and communications infrastructure in airspace and outer space to meet growing and diverse spectrum demands. Such networks are distinguished from terrestrial networks—those relying on ground-based antennas used for everyday mobile communications—and are referred to as “non-terrestrial networks (NTN).” While communications via large geostationary (GEO) satellites have long been utilized, their distance from the Earth poses limitations in meeting modern requirements for high-capacity, low-latency communications. Accordingly, new approaches are attracting attention, including satellite constellations in lower orbits (LEO) and high-altitude platforms (HAPS) positioned within the stratosphere, with active efforts underway toward practical deployment.

3. Future Use of Radio Waves and Discussions Leading to New Regulations

3.1. Radio Waves Required for Aviation Activities

Turning first to drone operations and the need for radio waves: because current drones are primarily operated remotely, radio signals are required for operators to transmit commands to the drone. Radio waves are also necessary to transmit images captured by onboard cameras, location information, and other data back to the operator. Furthermore, under the CAA, drones are in principle required to transmit a Remote ID signal during operation, and this also requires radio transmission.

For these uses, 920 MHz band allocated for “specific low-power radio stations” are currently available for purposes of the drone’s control, and 2.4 GHz wireless LAN may be used for both control and image transmission. For image transmission, 2.4 GHz and 5.7 GHz bands are available as unmanned mobile image transmission systems. In addition, in light of congestion in the 2.4 GHz band, a new framework enabling the use of 5.2 GHz wireless LAN became available in April 2025. More recently, systems enabling the installation of mobile phones on drones to transmit video and data via mobile networks have also been developed.

With respect to AAM, because the current assumption is merely visual flight rules (VFR) operations, they are expected to use the frequency bands allocated for helicopter operations and similar aviation activities.

However, further expansion of these aviation activities is anticipated. For drones, more advanced flight operations—such as operations without certain measures for the risk avoidance on the ground in areas where third-party entry is unlikely under certain conditions (referred to as “Level

3.5”) and beyond-visual-line-of-sight operations in populated areas (referred to as “Level 4”)—are expected to increase, enabling wider use cases. AAV, while not yet in full commercial operation, may see increased flight frequency and the adoption of new flight modes such as via remote operation.

Such developments may create demand for communications in airspace beyond the reach of existing systems (for long-range communication), as well as new systems enabling traffic and dynamic management, remote piloting support, takeoff/landing assistance, and collision avoidance. As a result, radio-wave demand will increase significantly, and regulatory frameworks enabling a combination of diverse communications technologies—including satellite constellations and HAPS as non-terrestrial networks—aligned to each use case may be required.

The Working Group intends to prepare for this expected rise in radio-wave demand by identifying policy challenges at each stage of expanded airspace utilization and formulating a roadmap that categorizes measures into short-term and medium- to long-term priorities.

3.2. High-Altitude Platforms (HAPS)

Countries regularly reallocate frequency bands from the strategic viewpoint to strengthen industrial competitiveness under their own framework of radio wave governance. Japan’s MIC publishes its priority policy items each fiscal year in its Frequency Reallocation Action Plan. For FY 2025, although the plan has just finished the public comment process and has not been finalized at the present time of writing, the published draft identifies the following priority areas:

- I. Allocation to 5G through implementation of price-based competition
- II. Further advancement and frequency expansion of wireless LAN
- III. Promotion of studies on V2X
- IV. Advanced utilization of Non-Terrestrial Networks (NTN)
- V. Effective use of frequencies for public services
- VI. Promotion of other major frequency reallocation and migration initiatives
- VII. Promotion of Beyond 5G, including next-generation mobile communication systems (6G)

HAPS are particularly closely related to the above item IV, i.e. the advanced use of non-terrestrial networks (NTN). With increasing demand for advanced radio-wave use driven by smartphones, drones, and IoT technologies, expectations are growing not only for terrestrial networks but also for HAPS and low-Earth-orbit (LEO) satellite communications systems. HAPS are also mentioned as a key element in item VII relating to Beyond 5G/6G initiatives, underscoring its long-term strategic importance.

Under Japan’s *Radio Act*, before allocating frequencies for new communication systems, technical conditions must be examined to ensure they do not cause harmful interference to existing services. Discussions are supposed to take place at the Information and Communications Technology Subcommittee of the MIC’s Information and Communications Council, followed by a

report, public consultation, review by the Radio Regulatory Council, and then formal amendment of the frequency allocation plan through MIC notification.

Regarding HAPS, in August 2025, a HAPS Study Group was launched under the Next-Generation Mobile Communications Systems Committee of the abovementioned council, and its final report was publicized in November 2025 after its technical examination.

As regards the Air Law aspect, HAPS are considered to fall under the category of “aircraft” or “unmanned aircraft” under the CAA, depending on their structure. Accordingly, under existing regulations, platforms that qualify as aircraft would require compliance with various aviation-law requirements, including airworthiness certification. Operators exploring HAPS deployment are reportedly engaged in discussions with the Civil Aviation Bureau of MLIT and the U.S. Federal Aviation Administration (FAA).

In parallel, discussions in the working group examining amendments to the Space Activities Act consider classifying sub-orbital operations as “high-altitude flights,” and suggest that HAPS should fall under the CAA rather than space-related legislation. It will be important to monitor how these discussions across different regulatory domains ultimately converge.

4. Conclusion

The airspace is no longer a domain reserved only for users of aircraft and helicopters; rather, it is poised to become an essential domain for activities that supports our daily lives.

As such, it is imperative to continue closely monitoring future developments in regulatory reforms relating to radio-wave and aviation systems, in response to the diversification of needs surrounding the use of the airspace.

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- This newsletter is published as a general service to clients and friends and does not constitute legal advice. Should you wish to receive further information or advice, please contact the authors as follows:

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