



**DENTONS**

# **2025 Global Guide to Autonomous Vehicles**

May 2025



# Japan

## 1. What are the latest autonomous vehicle developments in Japan for 2025?

- **Advancement of level 4 autonomous driving with revision of Road Traffic Act**

Japan's Road Traffic Act (RTA) was revised and put into effect on April 1, 2023, to make it possible to engage in driverless, self-driving transportation services (level 4). With this, in 2024 we have witnessed a variety of advancements with regard to level 4 autonomous driving in Japan.

- **Launch of Japan's first level 4 self-driving bus operations and remaining issues**

Japan's first level 4 self-driving bus operations were launched in HANEDA INNOVATION CITY, operating on private roads adjacent to the Haneda Airport, on August 1, 2024.<sup>1</sup> The service is operated by a private Japanese company, said to be the first private company to obtain a permit to operate level 4 autonomous vehicles.

In addition, on October 28, 2024, Japan's first ever level 4 self-driving bus public road verification testing was conducted in Kamishihorocho, Hokkaido.<sup>2</sup>

Depopulation and declining birthrates in Japan's rural areas and hilly and mountainous areas have led to a decline in public transportation, and level 4 self-driving buses and other driverless, self-driving transportation services are expected to resolve this issue.<sup>3</sup> However, such rural

areas and hilly and mountainous areas face a variety of issues, including narrow roads, the inability of autonomous vehicles to determine their locations due to snowfall or fog, and lack of profitability.<sup>4</sup> Thus, future advancements in technology and increased efforts toward commercialization are still important goals to be achieved.

- **Demonstration and Testing of level 4 self-driving trucks on expressways**

The Japanese government is promoting the verification testing of level 4 self-driving trucks on expressways to facilitate their public implementation. The first verification testing on Japan's expressways occurred in November 2024. See response to Q6 for the details.

- **Japanese government moves to accelerate the commercialization of level 4 autonomous driving**

In an effort to accelerate the commercialization of level 4 autonomous driving, in June 2024, the Japanese government compiled measures to expand the base of stakeholders and heighten social acceptance by promoting the introduction of new autonomous driving services and through other efforts. See response to Q2 for the details.<sup>5</sup>

1 <https://haneda-innovation-city.com/news/2024/08/08/2685/>

2 <https://www.nikkei.com/article/DGXZQOFC257OC0V21C24A0000000/>

3 <https://www.mlit.go.jp/policy/shingikai/content/001623770.pdf>, p. 3.

4 [https://www.mlit.go.jp/road/ir/ir-council/road\\_space/pdf/chu-matome.pdf](https://www.mlit.go.jp/road/ir/ir-council/road_space/pdf/chu-matome.pdf)

5 [https://www.cas.go.jp/jp/seisaku/digital\\_gyozaikaikaku/pdf/torimatome\\_honbun.pdf](https://www.cas.go.jp/jp/seisaku/digital_gyozaikaikaku/pdf/torimatome_honbun.pdf), p. 9.

## 2. Is Japan experiencing any recent roadblocks regarding autonomous vehicle developments?

- **Issues with the examination procedures for autonomous driving**

One barrier to the public implementation of autonomous driving in Japan has been that examinations to ensure the safety of autonomous vehicles have been highly specialized, and the administrative procedures associated with these examinations tend to be lengthy. In June 2024, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) cooperated with the National Police Agency (NPA) and Ministry of Economy, Trade and Industry (METI) to develop and release “Efforts to Ensure the Required Transparency and Fairness for Autonomous Driving Examination Procedures” in an effort to accelerate the examination procedures<sup>6</sup>. The goal is to promote the expanded introduction of new autonomous driving and to broaden the base of stakeholders by aiming for faster completion of examinations and administrative procedures associated with autonomous driving. Examinations and procedures which have taken approximately 11 months in the past are now aimed to be completed in 2 months as a result of the government: (i) creating a national support system; (ii) clarifying the examination content, procedures, forms and other details (such as formulation of Guidelines for Ensuring the Safety of Autonomous Driving<sup>7</sup>); and (iii) releasing and sharing past examination cases and making other efforts to streamline examinations as well as by the complete digitization of the process.<sup>8</sup> These efforts are expected to accelerate the spread of autonomous driving.

- **Example of Delay of start of self-driving bus operations**

On March 22, 2024, pursuant to the Road Transport Vehicle Act (RTVA), the MLIT Tohoku District Transport Bureau approved the operation of autonomous vehicles that do not require drivers (level 4) for BRT<sup>9</sup> on the JR Kesennuma Line.<sup>10</sup> Level 4 autonomous driving operations were scheduled to start from the fall of 2024, and the fact that these were large buses with a maximum speed of 60 kph generated considerable interest. However, on October 28, 2024, East Japan Railway Company announced that the start of these operations would be delayed.<sup>11</sup> While the detailed reasons are uncertain, the delay is said to have been due to delays in the progress of testing, construction and procedures. As in our response to Q7, while the introduction of autonomous driving is advancing in a variety of sectors, there are cases such as this where advancements do not proceed as planned.

## 3. Are there any recent updates in the cybersecurity/privacy space related to autonomous vehicles?

- **Trends in laws, regulations, and guidelines**

In 2024, there have been no revisions or other significant changes to domestic laws and regulations or the guidelines pursuant thereto with regard to cybersecurity and the protection of privacy related to autonomous driving. The WP.29 Regulations, the Notification Establishing Security Standards and the Details for the Road Transport Vehicle Act, the Personal Information Protection Act and other regulations continue to apply.

- **Government trends**

The Ministry of Internal Affairs and Communications (MIC) released the 2024

6 [https://www.mlit.go.jp/report/press/jidosha07\\_hh\\_000504.html](https://www.mlit.go.jp/report/press/jidosha07_hh_000504.html)

7 <https://www.mlit.go.jp/jidosha/content/001746489.pdf>

8 <https://www.mlit.go.jp/jidosha/content/001746487.pdf>

9 Abbreviation for Bus Rapid Transit.

10 <https://www.tb.mlit.go.jp/tohoku/content/000334947.pdf>

11 [https://www.jreast.co.jp/press/2024/20241028\\_ho01.pdf](https://www.jreast.co.jp/press/2024/20241028_ho01.pdf)

edition of its White Paper on Information and Communications in Japan on July 5, 2024.<sup>12</sup> With regard to ensuring the reliability of the communications systems required for safe and effective autonomous driving, the plan is to develop a collection of models which can be referenced by regions that are considering the introduction of autonomous driving sometime in 2024. (As of December 2024 there is no information regarding the completion thereof). The models will be based on the results of the ongoing Regional Digital Infrastructure Utilization Promotion Project (Autonomous Driving Level 4 Verification). This process will support the development of information and communications environments in these various regions, in line with these models.

- **Trends in the Industry**

On November 12, 2024, the Japan Automobile Manufacturers Association, comprised of 14 domestic automotive manufacturers, released explanatory materials on the priority items in the Automotive Industry Cybersecurity Guidelines first published in 2022.<sup>13</sup> These materials set out the matters that should be addressed first among the level 1 (the minimum that should be implemented in the automobile industry) security measures, which include, among other things, the development of procedures for responding to security incidents and the gathering of information on prior server attacks.

Also, on September 13, 2024, VicOne Corporation (a subsidiary of Trend Micro Inc.), which supplies the automotive industry with cybersecurity software, released a report summarizing the most recent cybersecurity trends in Japan's automotive industry.<sup>14</sup> This report addresses the results of investigations of domestic and international cybersecurity attacks

and the risk countermeasures that can be put in place on the software side.

#### 4. Are there any recent updates in the 5G space related to autonomous vehicles?

- **2024 government trends and examples of 5G utilization**

In June 2024, the Japanese government formulated the National Comprehensive Digital Lifeline Development Plan in an effort to accelerate the public implementation of autonomous driving and other digital lifelines. Under this plan, the establishment of "autonomous driving service support roads" (road sections where a safe operating environment for autonomous vehicles is provided and where driving data can be shared) was slated to be promoted in 2024, and the development of 5G SA and other V2N communication environments or local 5G communications was scheduled to be advanced for the establishment of these roads.<sup>15</sup>

As part of this plan, Hitachi City in Ibaraki has been designated as a region for the advance introduction of "autonomous driving service support roads," and in December 2024, verification testing was conducted in Hitachi City to ensure safe spacing between pedestrians and self-driving buses at narrow intersections that utilize local 5G communications.<sup>16</sup>

Additionally, the Japanese government is targeting the nationwide development of region-restricted level 4 autonomous driving services (with a target of 50 locations in 2025), and on April 23, 2024, the MIC announced that the verification group had been selected for the Regional Digital Infrastructure Utilization Promotion Project for the achievement of these goals.

12 <https://www.soumu.go.jp/johotsusintokei/whitepaper/r06.html>.

13 [https://www.jama.or.jp/operation/it/cyb\\_sec/cyb\\_sec\\_guideline.html#reference2](https://www.jama.or.jp/operation/it/cyb_sec/cyb_sec_guideline.html#reference2).

14 <https://vicone.com/jp/company/press-releases/vicone-japan-automotive-cybersecurity-report-2024>.

15 [keikaku.pdf](#).

16 [https://jpn.nec.com/press/202410/20241021\\_01.html](https://jpn.nec.com/press/202410/20241021_01.html).

The verification group is conducting verification testing for level 4 autonomous driving utilizing communications systems, including 5G, in seven municipalities across Japan. For example, in September 2024, verification of a communication system that proactively switches to the optimal connection destination from among multiple network services in anticipation of predicted degradation in the wireless quality, utilizing 5G communications provided by carriers and local 5G communications, was conducted in Yokohama City in Kanagawa.<sup>17</sup>

- **Future utilization of 5G**

In response to the delay in the commercialization of autonomous driving services in Japan, on June 21, 2024, the Mobility Working Group at the Digital Agency compiled the Mobility Road Map 2024 as the measures that should be taken by individual government agencies.<sup>18</sup> This roadmap positions 2025 and 2026 as the “advance commercialization stage,” and places emphasis on the advancement and implementation of technology in the data linkage and communications sector. Future trends regarding the utilization of 5G for automated driving need to be closely monitored.

## **5. Have any new laws/regulations been passed within the last year that have affected the deployment of autonomous vehicles?**

The RTA and related laws and regulations were revised in April 2022 to make level 4 (full system driving control under specific conditions (including emergency responses, etc.)) autonomous driving a possibility. This revision took effect from April 2023, and no subsequent revisions that have a material impact on the development of autonomous vehicles have been made to the RTA and related laws.

Meanwhile, now that level 4 autonomous driving is a possibility, the manuals and other documents setting out practical operations have been undergoing revisions and updates in 2024.

For example, the Guidelines on Safety Assurance Measures for Autonomous Vehicles<sup>19</sup> were revised in June 2024. (The Guidelines on Safety Assurance Measures for agricultural equipment<sup>20</sup> were also revised in March 2024). Additionally, the standards for the granting of this permission<sup>21</sup> were revised in September 2024 (In Japan, obtaining permission to use public roads is required for engaging in verification testing on public roads unless a driver is seated in the vehicle’s driver’s seat to regularly monitor the surrounding traffic conditions and the vehicle’s status, and to take control in emergencies or when otherwise required to ensure safety).

Furthermore, on May 31, 2024, the Sub-working Group on the Review of Social Rules for Autonomous Vehicles in the Age of AI established under the Mobility Working Group under the Digital Society Promotion Council at the Digital Agency, released a report setting out issues (short-term issues and medium to long-term issues) regarding the state of social rules related to autonomous vehicles and compiling the results of reviews on the direction that should be taken.<sup>22</sup> This report is likely to have a certain degree of influence on the future enactment or revision of regulations.

Continued attention will have to be paid to regulatory trends.

## **6. What advancements in autonomous vehicles should we expect in Japan in 2025?**

- **Advancement of self-driving truck technology for expressways**

The Japanese government is promoting the introduction of autonomous driving technology

17 <https://www.nttdata-strategy.com/newsrelease/240930/>

18 [https://www.digital.go.jp/assets/contents/node/basic\\_page/field\\_ref\\_resources/2415ad00-6a79-4ebc-8fb1-51a47b1b0552/53e634ee/20240621\\_mobility-working-group\\_main\\_01.pdf](https://www.digital.go.jp/assets/contents/node/basic_page/field_ref_resources/2415ad00-6a79-4ebc-8fb1-51a47b1b0552/53e634ee/20240621_mobility-working-group_main_01.pdf)

19 <https://www.mlit.go.jp/jidosha/content/001749839.pdf>

20 <https://www.maff.go.jp/j/kanbo/smart/attach/pdf/index-172.pdf>

21 <https://www.npa.go.jp/bureau/traffic/selfdriving/roadtesting/2409dourosiyoukyokakijun.pdf>

22 [https://www.digital.go.jp/assets/contents/node/basic\\_page/field\\_ref\\_resources/1fd724f2-4206-4998-a4c0-60395fd0fa95/9979bca8/20240523\\_meeting\\_mobility-subworking-group\\_outline\\_04%20.pdf](https://www.digital.go.jp/assets/contents/node/basic_page/field_ref_resources/1fd724f2-4206-4998-a4c0-60395fd0fa95/9979bca8/20240523_meeting_mobility-subworking-group_outline_04%20.pdf)

to achieve level 4 autonomous driving on expressways by 2025<sup>23</sup>, and major technological advancements for the practical implementation of self-driving trucks are expected in 2025. This will be backed by demands for the resolution of logistics personnel shortages and the improvement of logistics efficiency. In Japan, the 2024 revision of the Labor Standards Act and other working hour regulations will place a cap on overtime hours for truck drivers, and there are concerns that logistics will bottleneck with the accompanying reduction in manpower.<sup>24</sup> Accordingly, the Japanese government is working with truck manufacturers and logistics companies to vigorously pursue the practical and social implementation of self-driving trucks on expressways.

- **Implementation of verification testing for self-driving trucks on expressways**

The Japanese government is promoting verification testing on public roads for the practical and social implementation of self-driving trucks. In November 2024, autonomous vehicle lanes were installed on an expressway between Tokyo and Nagoya for verification testing, and the plan is to install autonomous vehicle lanes and conduct verification testing in six more sections from 2025 and beyond.<sup>25</sup> Such tests are conducted to verify risk avoidance associated with autonomous driving<sup>26</sup>, and the commercialization of self-driving trucks is accelerating.

- **Commercialization of self-driving trucks and technical issues**

In 2025, some Japanese enterprises aim to realize the commercialization of self-driving truck services compatible with level 4 autonomous driving.<sup>27</sup> Of course, large vehicles face a variety of unique issues, including the need for a large number of sensors and cameras to widen their detection range.<sup>28</sup> Companies are competing to develop technologies to resolve these issues, and significant technological advances and even the commercialization of self-driving trucks are expected in Japan in 2025.

- 7. **Aside from Robotaxis, do you see any other developments in the commercial space regarding AVs, including farming, commercial trucking, food delivery, etc.?**

- **Self-driving agricultural machinery**

The Safety Assurance Guidelines for Self-driving Agricultural Machinery<sup>29</sup> established in March 2017 were partially revised in March 2024.<sup>30</sup> In anticipation of the commercialization of robotic agricultural machinery used by remote monitoring<sup>31</sup>, this revision adds the safety assurance measures, etc. required for this machinery.

- **Autonomous delivery robots**

With the revision of the RTA having come into effect in April 2023, autonomous delivery robots are now able to travel on public roads as “remotely operated small vehicles” (RTA Article 2, Paragraph 1, Item (11)-5) if they meet certain

23 MLIT, Trends in the Realization of Autonomous Driving (2022 1st Review Meeting on Ensuring Safety, etc. in Vehicle Transportation Business utilizing Autonomous Vehicles), p. 3.

24 MLIT, Policy on the Use of Autonomous Vehicles, etc. that Contribute to the Resolution of Social Issues, p. 7.

25 MLIT, Testing of Self-driving Trucks on Expressways, p. 5.

26 NPA, Current Status and Issues for Social Implementation of Self-driving Trucks.

27 <https://t2.auto/company/>.

28 Others include the need for multiple communications means and antennas/detection equipment for covered cargo, and the need for the recognition of greater distance information due to difficulties in sudden stopping and steering. NPA, Current Status and Issues for Social Implementation of Self-driving Trucks.

29 Notification of the Director-General of the Production Bureau, Ministry of Agriculture, Forestry and Fisheries (MAFF), No. 28 seisan 2152, dated March 31, 2017. (<https://www.maff.go.jp/j/press/nousan/gizyutu/attach/pdf/240327-2.pdf>).

30 <https://www.maff.go.jp/j/press/nousan/gizyutu/240327.html>.

31 Referring to vehicle-type agricultural machinery that incorporates sensors, combined intelligent control systems and drive systems (robotic technology) that is used in fields and other locations for agricultural work. (Safety Assurance Guidelines for Self-driving Agricultural Machinery, preamble 4).

conditions. In February 2024, METI established Guidelines for the Use of Autonomous Delivery Robots to provide a centralized understanding of the processes and actions that need to be taken prior to the initial use of autonomous delivery robots, as well as the relevant laws and regulations.<sup>32</sup> Additionally, Uber Eats Japan G.K. introduced delivery robots in Tokyo and Osaka in 2024.<sup>33</sup>

- **Moving toward the automation of cargo delivery at domestic airports**

The MLIT Civil Aviation Bureau is promoting public-private collaboration in verification testing for the transportation of luggage, cargo and passengers within restricted airport areas, and the first test run of a level 4 self-driving<sup>34</sup> towing tractor<sup>35</sup> was conducted at the Tokyo International Airport between July 1 and 19, 2024. The goal is to launch level 4 autonomous driving operations in airport restricted areas within 2025.<sup>36</sup>

## 8. Have any AI laws impacted deployment?

At present, Japan has yet to adopt an approach for the development of comprehensive regulatory laws and regulations regarding AI.

Regulations envisioning the use of AI are incorporated in the existing regulations for each sector, and for autonomous driving, the regulations regarding the use of AI and autonomous driving technologies are incorporated in the RTA, RTVA and other existing regulations for automobiles.

To date, we have yet to see any regulations that restrict the types of AI or the AI training methods that can be used in autonomous driving, but the possibility cannot be ruled out that some type of regulations will be put in place in the future based on the discussions and the like in other sectors.

Continued attention will have to be paid to regulatory trends.

32 <https://www.meti.go.jp/policy/economy/distribution/deliveryrobot/guidance.html>.

33 <https://www.uber.com/ja-JP/newsroom/osaka-robot-2024/>.

34 Under certain conditions, the system performs all driving tasks without a driver in the vehicle.

35 Vehicles that tow trailers loaded with luggage or cargo, containers and other items at airports and other locations.

36 [https://www.mlit.go.jp/report/press/kouku09\\_hh\\_000254.html](https://www.mlit.go.jp/report/press/kouku09_hh_000254.html).

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