Efforts of Road Transport Bureau, MLIT For the Realization of Automated Driving

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Cabinet Office

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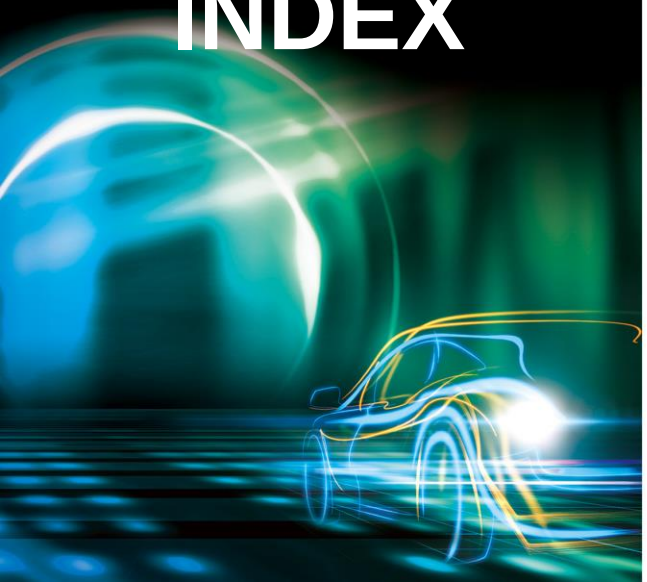

1. Efforts by Automated Driving Strategy Headquarters, MLIT

Main effort

1. Improving the environment to realize automated driving

(1) Safety regulations formulation and system development related to cars

(2) System / environment improvement to realize the automated driving

2. Promoting the development and spread of automated driving technology

(1) Car technology

(2) Road and cars cooperation technology

3. Demonstration experiments and social implementation to realize automated driving

(1) Improvement of moving services

(2) Improvement of logistics productivity

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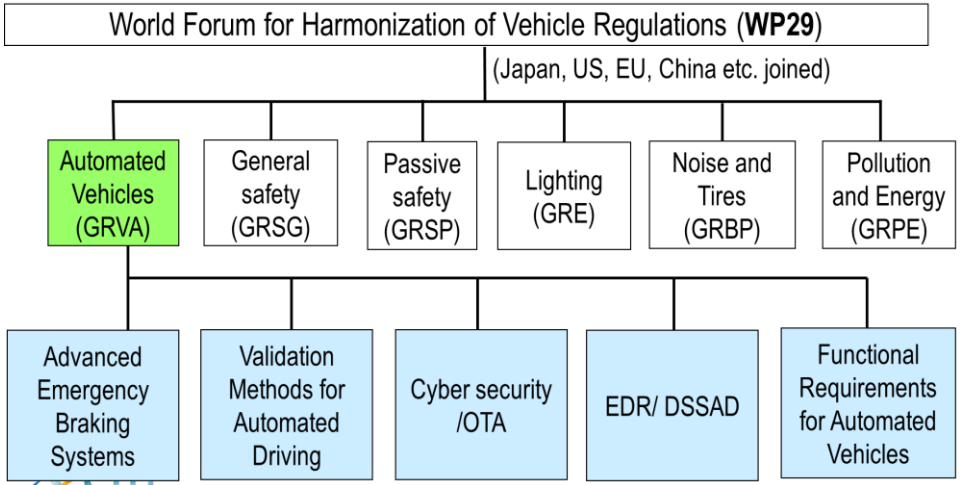
2. Overview of International Regulations Consideration System

○ At the World Forum for Harmonization of Vehicle Regulations (WP29), co-chair or vice-chairperson from Japan led the discussion on international standards for automated driving. In June last year, standards for automated lane keeping, cyber security and others were established.

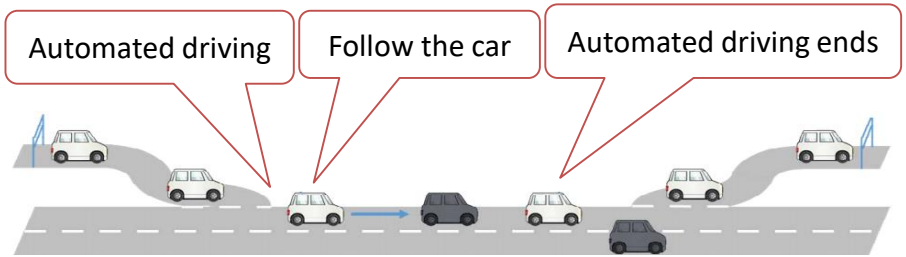
International standards review system and the considered items for automated driving technology



Standards developed in June 2020

Level 3: -Automated Lane Keeping System

For all levels: -Cyber security and software update



3. Partial amendment of the Road Transport Vehicle Act

○ To promote the safe development of and the practical and widespread use of automated driving vehicles and to ensure their safety during the processes of their designing, manufacturing and use, the Road Transport Vehicle Act was amended and took effect in April 2020.

Automated driving systems were added to devices covered by the safety standards.

※enforced in April 2020

出典：bosch

A system for licensing the wireless update of relevant software was established.

※enforced in November 2020

出典：bosch

3. Overview of Safety Regulations for Automated Operation Devices

○ In March 2020, the safety regulations for automated operation devices were formulated.

Safety regulations for automated operation devices

Performance	(1) There shall be no risk of interfering with the safety of passengers or other traffic within the operating environment. (2) It shall not be operated outside of the operating environment. (3) Safe operation shall be continued until the driver takes over, and the vehicle shall be stopped safely if he or she does not take over. (4) The vehicle shall be equipped with driver monitoring to monitor the driver's condition. (5) Measures shall be taken to ensure cyber security to prevent unauthorized access, etc.
Operation status recording equipment	➢ ON / OFF time of the automated operation device ➢ Time when the alarm was triggered to take over driving ➢ Time when the driver became unable to respond, etc. must be able to be recorded for 6 months (or 2,500 times).
ExternalIndication	- A sticker indicating that the vehicle is an automated driving vehicle shall be attached to the rear of the vehicle (request made to the manufacturer).

4. 【Private vehicles】Type designation of automated driving vehicles (level 3)

○ In November 2020, the type designation of level-3 automated driving vehicles was implemented for the first time in the world. Their sale began in March 2021.

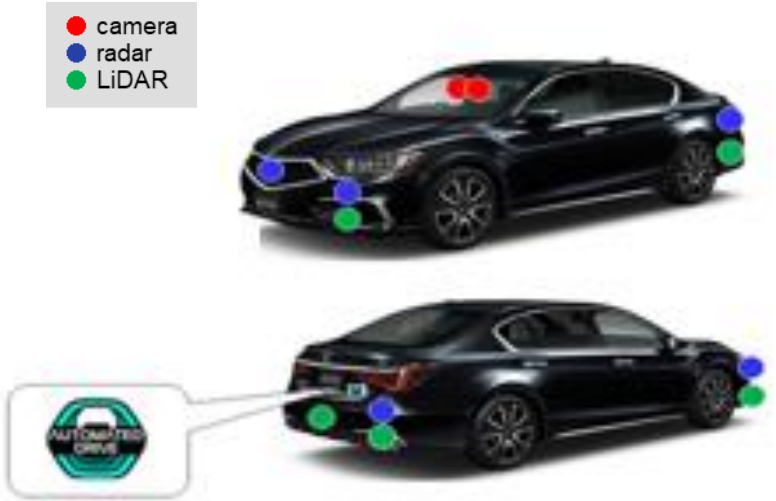
Major Operating Design Domain

●Road sections
National expressways, urban expressways and highways

●Excluded sections/locations
Sections where two lanes (a driver's traffic lane and the opposite lane) are not structurally divided by a median strip (sharp curve, service area, parking area, tollgate, etc.)

●Runningspeed
The speed must be less than 30 km/h before the automatic driving device starts to operate and about 50 km/h or less after it starts to operate.

●Runningcondition
The vehicle must correctly obtain information from the high-precision map and the Global Navigation Satellite System GNSS).



* Provided by Honda Motor Co., Ltd.

5. 【Mobility service】 Licensing of last-mile automated driving vehicles (level 3)

- In March 2021, we approved vehicles equipped with automated driving systems(level 3).
- The automated driving systems mounted on the vehicles make it possible for the vehicles to run along an electromagnetic induction wire installed on roads (exclusively for bicycles and pedestrians) and to detect and respond to a pedestrian, bicycle or obstacle.

Major Operating Design Domain

- **Road sections**
  Eiheiji Mairodo (My Road), Yoshida-gun, Fukui Prefecture: Site of the now-defunct Eiheiji line of the Keifuku Electric Railroad Co., Ltd (about 2 km).
- **Road conditions**
  Travel routes equipped with electromagnetic.
- **Running speed**
  The running speed of a vehicle equipped with the automatic operation device must be 12 km/h or less.
- **Running condition**
  The vehicle must run along the electromagnetic induction wire, and the presence of magnetism detectable by the car is necessary. The road must not be in an unstable condition such as a frozen road surface.

One remote-monitoring operator controls three unmanned automated driving cars.

Thank you