

## GOVERNMENT STATUS REPORT OF JAPAN

**Hiroyuki INOMATA**

Director,

International Affairs Office,

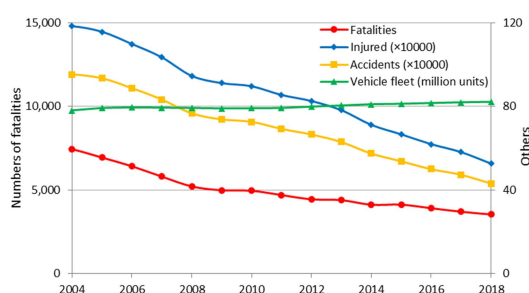
Engineering Policy Division,

Road Transport Bureau,

Ministry of Land, Infrastructure, Transport and Tourism of Japan (MLIT)

### 1. TRENDS OF THE ROAD TRAFFIC ACCIDENTS IN JAPAN

The number of fatalities (those who died within 24 hours) resulting from traffic accidents in 2018 was 3,532. This represents a great decrease compared to the previous year and is about one-fifth the 16,765 fatalities in 1970, which was the year in which the number reached its peak. In addition, both the number of accidents resulting in injury or death and the number of injured persons decreased for the 14th consecutive year in a row since 2004, when the numbers were at their worst.



**Figure 1. Recent trends of the road traffic accidents in Japan**

Japan has had a low rate of road traffic fatalities per 100,000 population, which was 2.8 in 2018, but as a further step, new targets were established in the 10th Fundamental Traffic Safety Program for 2016 - 2020: to

reduce the number of fatalities to below 2,500 (those who died within 24 hours) and to below around 3,500 (those who died within 30 days) by 2020.

The road transport environment is beginning to change greatly due to the aging society and the introduction of Advanced Safety Technologies. Therefore, on 24<sup>th</sup> June 2016 the Working Group on Technology and Vehicle Safety of the Council for Transport Policy of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) reported a target for 2020 to reduce the number of fatalities by 1,000 from the one for 2011 by implementing vehicle safety measures, evaluating their effect, and setting the policy for reaching the new targets.

### 2. Effective Vehicle Safety Measures

To spread active safety and other safety technologies and to enhance development, it is necessary not only to establish safety regulations, but also to implement various rational measures. These should be considered based on quantitative assessment of the effects and performance as well as the required costs. Therefore, the MLIT is promoting vehicle safety measures through effective linkage between the safety regulations, the Advanced

## Safety Vehicle (ASV) project and the New Car Assessment Program (NCAP).

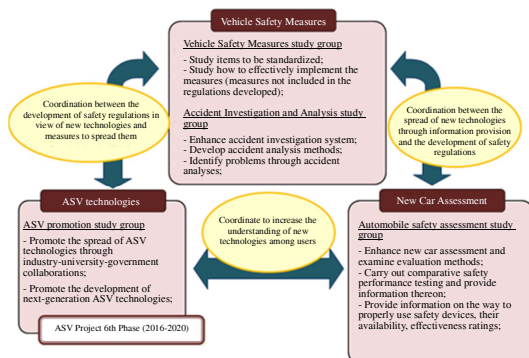


Figure 2. Vehicle safety measures promotion system

### 2.1. Enhancement of Safety Regulations

With regard to the expansion and enhancement of safety regulations, the MLIT has been considering the introduction of UN regulations and UN GTRs mainly for advanced safety technologies with the harmonization of international regulations in mind.

Recent amendments to safety regulations:

- 2018 Introduction of amendment to UN R79 on automated lane-change functions; introduction of UN R144 on Accident Emergency Call Systems;
- 2017 Introduction of amendment to UN R79 on automated lane-keep functions; extension of seats to be covered by seatbelt reminder (UN R16)

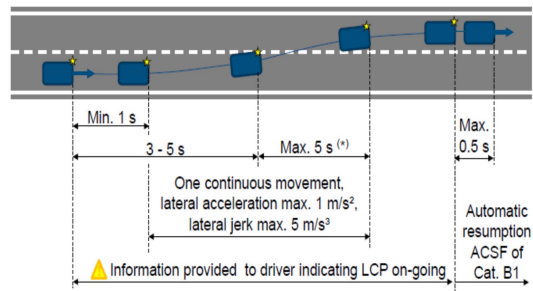


Figure 3. Outline of the international regulation on automated lane-change functions

### 2.2. Advanced Safety Vehicle (ASV) project

Regarding the ASV Promotion Project which is to promote the development and commercialization of Advanced Safety Vehicles (ASV), the MLIT has been promoting ASV toward automated driving, the theme of the 6th Phase of the project, such as the study of technical requirements of Emergency Driving Stop System, the spread of automated driving technologies including ASV technologies that have already been achieved. Regarding large vehicles such as trucks and buses, we are promoting the introduction of advanced safety technologies such as Advanced Emergency Braking System (AEBS), Emergency Driving Stop System, and Blind Spot Information System through tax incentives and budget distribution.

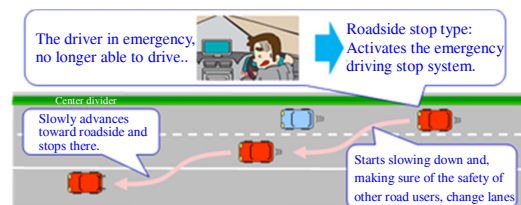


Figure 4. Emergency Driving Stop System in the event that the driver is incapacitated

### 2.3. New Car Assessment Program (NCAP)

To allow motor vehicle users to select safer

vehicles and promote the development of safer motor vehicles by auto manufacturers, the New Car Assessment Program (NCAP), which assesses and publishes the safety performance of motor vehicles, has been in place since 1995 (Fiscal year; hereinafter the same in this chapter). Since 2011, the collision safety performance assessment has been carried out that assesses each vehicle's performance in both occupant protection and pedestrian protection, and publishes the results with one to five stars. To further improve the collision safety performance, study is now under way to take the safety of elderly occupants into account.

Meanwhile, the preventive safety performance assessment of AEBS or other preventive safety systems has been conducted since 2014, enhancing the assessment by gradually increasing systems to be assessed.

The assessment of acceleration control systems for pedal misapplication was added in 2018 and the assessment will start in 2019 of AEBS to avoid collision with pedestrians under night-time no-streetlight conditions.

From 2020, we will integrate the assessment and publication of the results of collision safety performance and preventive safety performance, which has been conducted separately.

In order to improve the awareness of NCAP among consumers, efforts are being made to spread knowledge and information in cooperation with National Agency for Automotive Safety and Victims' Aid (NASVA) and Regional Transport Bureaus.



Figure 5. Assessment of AEBS to avoid collision with pedestrians (under night-time)

### 3. Efforts toward the realization of automated driving

Automated driving is expected to have great effects in solving problems such as reducing traffic accidents, relieving traffic jams, ensuring the means of transport for the elderly, etc. As the objectives of the whole government, it aims at realizing highly automated driving on expressways, unmanned autonomous mobility service in specified areas, etc. by around 2020. To this end, the MLIT set up Automated Driving Strategy Headquarters and works to make automated driving a reality, i.e., to (i) develop and improve an environment (regulations and legal systems) for, (ii) promote the development and deployment of, and (iii) carry out field operational testing and social implementation of these technologies.

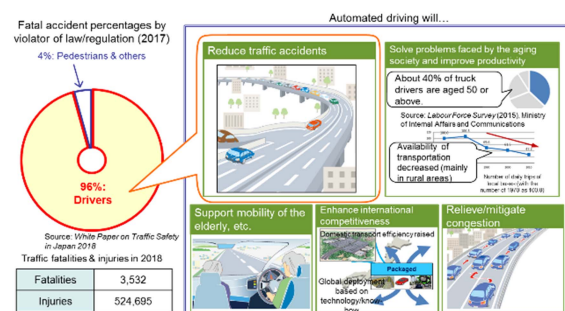


Figure 6. Importance of Automated Driving

#### 3.1. Develop and improve an environment for realizing automated driving

Regarding the development of safety

regulations for automated vehicles, the government, based on the agreement reached at the G7 meeting of ministers in charge of transport held in June 2017 in Italy that the member countries would cooperate at the international level at the United Nations World Forum for Harmonization of Vehicle Regulations (WP.29) to put more highly automated/autonomous driving technology (Level 3 and Level 4) into practical use, contributes to discussions at WP.29 for the development of international regulations on automatically commanded steering function, AEBS, cybersecurity, etc. Domestically, the MLIT developed the Guideline regarding Safety Technology for Automated/Autonomous Vehicles in September 2018 to promote the development and commercialization of safe automated/autonomous vehicles even before the implementation of international regulations on automated/autonomous vehicles of Level 3 and Level 4. This guideline sets the safety goal of “realizing society where traffic accidents caused by automated/autonomous driving systems resulting in injury or death become zero” for the first time in the world and defines ten safety requirements to be satisfied by automated/autonomous vehicles including the safety of the automated/autonomous driving systems, installation of data storage systems, and cybersecurity.

### 3.2. Promote the development and deployment of automated driving technology

Regarding promoting the development and deployment of automated driving technology,

the government set a new numerical target of increasing the rate of newly registered passenger vehicles with AEBS to 90% or more by 2020. To achieve this goal, the MLIT is multiplying efforts both in public and private sectors to promote the development and deployment.

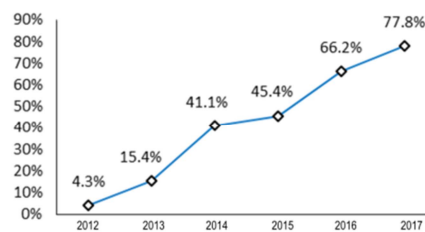


Figure 7. Evolution of the rate of newly registered passenger vehicles with AEBS

### 3.3. Field operational testing for automated/autonomous driving and its social implementation

The government is working on field operational testing of last mile automated mobility service that connects the nearest stations, etc. and final destinations with automated mini carts, buses, etc. and truck platooning. In the tests of last mile automated mobility service, a two-on-one remote control experiment started in November 2018 in which two vehicles are operated by a single remote monitor/driver.

Regarding truck platooning, a public-road test started in January 2019 on the Shin-Tomei Expressway in which the following vehicles were unmanned.



**Figure 8. Field operational testing of last mile automated driving and truck platooning**

**4. Promote the international harmonization of vehicle regulations in cooperation with various countries**

Regarding the promotion of the international harmonization of vehicle regulations, the MLIT makes all-out efforts to work on them as a major task, as mentioned in its growth strategy “Investments for the Future Strategy 2018” (adopted by the Cabinet on June 15, 2018).



**Figure 9. Structure of WP.29**

**4.1. Contribution to international discussion**

At the WP.29, in cooperation with other countries, the MLIT contributes to the development of international regulations on automated driving technologies such as automatically commanded steering function and AEBS as well as new technologies such as cybersecurity, detection and warning system for vulnerable road users in close proximity of the vehicle and so on.

**4.2. Promote International Whole Vehicle Type Approval (IWVTA)**

At the WP.29, an international regulation (UN R0) was adopted in November 2017 and entered into force in July 2018. The MLIT is

striving for the smooth operation of IWVTA and promote an active utilization thereof. We are currently studying how we could further enhance IWVTA in the future, including expansion of target devices.

**4.3. Promote emerging countries’ accession to UN Agreements, etc.**

The MLIT actively supports ASEAN and other emerging countries in their accession to UN Agreements, participation in the WP.29 and introducing IWVTA. Moreover, in order to promote the introduction of appropriate traffic safety/environmental preservation measures based on their own traffic and environmental conditions, the MLIT is cooperating with them making good use of its expertise and experience.

**CONCLUSION**

Measures that are being taken in Japan have been described above. When promoting these measures, the MLIT gathers and analyzes traffic data, and runs a PDCA cycle with the cooperation from various stakeholders.

**Furthermore, considering that motor vehicles are globally distributed products, international harmonization should be kept in mind when studying and discussing regulations.**

**The MLIT would like to continue contributing to international discussions by actively making proposals based on technical grounds.**