

LCQ18: Autonomous vehicles

Following is a question by Dr the Hon Hoey Simon Lee and a written reply by the Secretary for Transport and Logistics, Mr Lam Sai-hung, in the Legislative Council today (March 13):

Question:

The new regulatory regime for autonomous vehicles (AVs) came into effect on March 1 this year, providing a regulatory framework for the trial and use of AVs in Hong Kong. In this connection, will the Government inform this Council:

(1) as the aforesaid regulatory framework mainly regulates the conduct of AV trials, whether the authorities have plans to establish vehicle design standards for AVs running on public roads in the future;

(2) whether it has plans to progressively open up more public roads to allow the conduct of larger-scale AV trials under more authentic road conditions; if so, of the details; if not, the plans in place to promote the trial and use of AVs; and

(3) whether it will consider stepping up communication with members of the autonomous driving industry for providing in the road infrastructure the requisite vehicle-to-everything and infrastructural facilities for the application of autonomous driving technology?

Reply:

President,

The Smart City Blueprint for Hong Kong and the Smart Mobility Roadmap for Hong Kong published by the Government in 2017 and 2019 respectively promulgated, among others, the facilitation of trials of autonomous vehicles (AVs) in Hong Kong. In the Smart City Blueprint for Hong Kong 2.0 published in December 2020, one of the smart mobility initiatives is to facilitate the technology advancement and industry development in AVs and Vehicle-to-Everything (V2X) with a vision of realising the trial and use of AVs on public roads in Hong Kong. Since 2017, the Transport Department (TD) has been issuing movement permits for the purposes of AV trials. To facilitate wider trials and application of AVs by the industry in Hong Kong, the Transport and Logistics Bureau and the TD amended the Road Traffic Ordinance (Cap. 374) and made a new piece of subsidiary legislation to provide a flexible regulatory framework for AVs. The new AV regulatory regime has come into operation on March 1 this year.

In consultation with the TD, my consolidated reply to the question raised by Dr the Hon Hoey Simon Lee is as follows:

(1) When making the new legislation for AVs, the Government has taken into

account the technological development on the Mainland and in other regions across the world, and has adopted relevant AV standards, such as the national standard on Taxonomy of Driving Automation for Vehicles (GB/T 40429-2021) as well as the SAE International's J3016 standard. In tandem with the AV regulatory framework which comes into effect on March 1 this year, the TD has issued the Code of Practice for Trial and Pilot Use of Autonomous Vehicles (the CoP). The CoP sets out the detailed technical, safety and operational requirements of trial and use of AVs. The CoP also provides guidance on the requirements of vehicle design and construction of AVs (e.g. software update of the AV system, the switching between manual mode and autonomous mode and failure warning of the AV, etc). Besides, the construction of the AV must comply with the requirements of the vehicle class as provided in the Road Traffic Ordinance and its subsidiary legislation. As technology continues to develop, vehicle design standards of AVs may also evolve. The TD will update the CoP in a timely manner and review relevant laws to tie in with the latest development of the AV technology.

(2) and (3) The TD set up the Technical Advisory Committee on the Application of Autonomous Vehicle Technologies in Hong Kong in 2019 to explore with the industry, representatives of relevant research institutions and experts how best to draw up an appropriate regulatory framework for the wider trial and application of AVs in Hong Kong.

To ensure that the regulatory regime is flexible and be able to cope with the technological development, the new AV legislation does not limit the area or scale of AV trials. Applicants may consider and propose the area or scale of trials based on their objectives of trial and use of AVs and apply to the TD for an AV Pilot Licence.

The Government has all along been providing funding support to scientific research projects involving autonomous driving and relevant technologies in a proactive manner. We launched the \$1 billion Smart Traffic Fund (STF) in 2021 to provide funding support to local organisations or enterprises for conducting research and application on vehicle-related innovation and technology. To date, there are seven approved projects that are related to AV and V2X technologies. The road sections under trials cover public roads and various application scenarios, such as the West Kowloon Cultural District, the Hong Kong Science Park and individual private residential estates. In addition, it is expected that the Airport Authority Hong Kong will begin to deploy its autonomous transportation system from 2025 onwards and carry passengers on the AirportCity Link which connects the SKYCITY and the Hong Kong Port Island of the Hong Kong-Zhuhai-Macao Bridge.

Currently, the development of global AV technology can be divided into two main streams, one of which is the "Single Vehicle Intelligence" technology, which relies solely on different sensors such as cameras and radars installed on the AVs to make the vehicle itself capable of autonomous driving. The another technology is known as "Vehicle-Road Coordination", which achieves autonomous driving on the basis of "Single Vehicle Intelligence" and by means of V2X and roadside units. Through real-time information sharing in the V2X system, appropriate reports and warnings are

instantly generated to alert road users and AV systems, thus improving road safety and enhancing transport efficiency. With the support of the STF, the Hong Kong Applied Science and Technology Research Institute (ASTRI) has been conducting AV trials and application of advanced cellular V2X. The Innovation and Technology Fund under the Innovation and Technology Commission also provides funding for the ASTRI to conduct technical studies and field trial projects relating to V2X systems.

Last year, the Government proposed in the Traffic and Transport Strategy Study to promote the development of AVs. On the basis of the above regulatory framework and funding support for research projects, the Government will continue to closely liaise with members of the industry to promote the introduction of more trial and use of AVs and V2X related technologies, so as to provide the public with more opportunities to take a trial ride on AVs, thereby enhancing the public awareness of AVs.