

**For discussion
on 15 July 2022**

Legislative Council Panel on Transport

Legislative Proposals for Establishing Regulatory Framework for Autonomous Vehicles

PURPOSE

To enable a wider industry testing and further use of autonomous vehicles (“AVs”) in the future, the Government proposes the establishment of a new regulatory framework to accommodate the development of AV technologies in Hong Kong. This paper invites Members’ views on the Government’s legislative proposals set out below.

BACKGROUND AND CURRENT SITUATION

2. With the promising advantages of enhancing road safety by eliminating human errors and optimising the use of limited road space, AV technologies have considerably advanced in recent years with various road testing being conducted worldwide. To plan for the development of AV technology in Hong Kong, the Government released the “Hong Kong Smart City Blueprint” in December 2017, which set out one of the Smart Mobility initiatives being the facilitation of AV trial. The vision of materialising AV trial on public roads was further set out in the Smart Mobility Roadmap for Hong Kong published by the Transport Department (“TD”) in July 2019.

3. Since 2017, to facilitate AV trials by the industry, the TD has been issuing Movement Permits in accordance with the Road Traffic (Registration and Licensing of Vehicles) Regulations (Cap. 374E) to authorise each AV trial while customised conditions are individually imposed on a case-by-case basis. The TD also published in 2017 a “Guide on the Application for Movement Permit for Test, Trial and/or Demonstration of Autonomous Vehicles on Roads within Designated Sites in Hong Kong” to provide guidance to organisations interested in conducting AV trial. A new set of “Guidance Notes on the Trials of Autonomous Vehicles” was then published in December 2019 and further updated in December 2020 to enable interested organisations to safely conduct AV trials under the existing regulatory framework. As at end June 2022, Movement Permits were issued to 12 AVs to conduct trials at eight locations, covering university campus, air cargo terminal, cultural district, Science Park and industrial estate, etc.

LEGISLATIVE AMENDMENTS

4. In May 2021, we consulted the Legislative Council (“LegCo”) Panel on Transport (“the Panel”) on preliminary proposals for establishing a regulatory framework for AVs, explaining that the main objective of the legislative amendments is to provide a flexible regulatory regime for research into, testing and evaluation of AVs, with a view to embracing the evolving AV technologies and accommodating the emergence of AVs as a new mode of transportation, at the same time ensuring public safety.

5. We also pointed out the limitations under the existing regulatory regime then. For instance, the design, construction and operation of AVs often differ from the technical standards and/or driving rules of conventional motor vehicles and, as such, AVs cannot be registered and licensed by the TD under the existing regulatory framework, nor obtain other relevant licences for providing passenger services. In addition, under specific circumstances, an AV and/or its operator may fail to meet certain existing legal requirements, and thus the AV concerned is not allowed to run on roads in Hong Kong. To overcome these limitations, the regulatory regime has to be brought up-to-date to allow wider and more flexible trial of AVs on Hong Kong roads. Overall speaking, having considered the situation in Hong Kong with reference to the experience of other jurisdictions, we propose adopting a “trial/pilot approach” for the legislative framework to provide a more flexible regulatory regime for research into, testing and evaluation of AVs, thereby paving the way for wider use of AVs in Hong Kong in the future.

6. Members generally supported the introduction of a new regulatory regime to facilitate wider trial and use of AVs by the industry in Hong Kong. They advised the Government to consider the implications of the use of AVs in Hong Kong for drivers, road users and relevant stakeholders in a holistic manner, and map out a strategy for the development of AVs in Hong Kong.

LEGISLATIVE PROPOSAL

7. Upon consideration of the views of the Panel and having conducted further studies, we propose to introduce legislative amendments to the Road Traffic Ordinance (Cap. 374) (“the RTO”) and empower the Secretary for Transport and Logistics (“the Secretary”) to make new subsidiary legislation, with details set out below.

(I) Vehicle registration and licensing

8. To facilitate wider trial and use of AVs in Hong Kong, having considered the uniqueness of AVs, their differences from conventional motor vehicles as well as the existing regulatory requirements on vehicles, we propose the addition of a new part under the RTO to regulate AV trial and pilot schemes, and to incorporate the AVs under these schemes into the existing registration and licensing regime of the RTO. We propose to make new subsidiary legislation to prescribe the requirements for approval of AV schemes and other details, including –

- (a) Approval requirements for trial/pilot scheme: A person who intends to test or use AVs on Hong Kong roads must first apply for TD's approval in the form of a "trial/pilot scheme". The applicant must be capable of operating the relevant trial/pilot project. The TD will vet the details of the scheme (including third party liability insurance, requirements on vehicles, drivers/operators, etc.) in accordance with the legislation and Code of Practice for AVs ("the Code", see paragraph 9(c) below). If the application meets the relevant requirements, the project will be issued with an "autonomous vehicle pilot licence" ("AV pilot licence") by the Commissioner for Transport ("the Commissioner"). In the ensuing paragraphs, the person who is issued such licence is regarded as a "pilot proprietor".
- (b) Regulation on AV certificate, registration and licensing: Upon the granting of the AV pilot licence, AVs under the respective project will be required to obtain an "autonomous vehicle certificate" ("AV certificate") under the new legislation, and will be registered and licensed in accordance with the existing regulatory framework before proceeding with the test or usage on the road.
 - (i) Registration and licensing: As in the case of a conventional motor vehicle, an AV applying for registration and licensing must belong to a prescribed class of vehicles under Schedule 1 to the RTO (e.g. private car, public/private light bus, public/private bus, goods vehicle, etc.), and the classification, registration and licensing of which all rest with the TD.
 - (ii) "AV certificate": The operation of an AV must comply with the legal requirements and the Code in such aspects as safety and technical requirements, designated operating area/route, maximum speed, designated driver, number of passengers, etc. Upon consideration of all the relevant factors (e.g. the testing

needs of pilot proprietor), the TD will specify customised operational conditions when issuing individual AV certificate.

9. We will specify the following major provisions in the new subsidiary legislation –

- (a) AV pilot licence and AV certificate: We propose specifying in the new subsidiary legislation the application procedures for a pilot licence/certificate, the procedures for attaching or varying the conditions for a pilot licence/certificate, and the procedures for refusing or suspending a pilot licence/certificate, etc. We also propose specifying the factors that the Commissioner may take into account when making the aforesaid decisions.
- (b) Review mechanism: We propose specifying in the new subsidiary legislation the review of the Commissioner's decisions on the approval, issue of AV pilot licence or certificate, etc. of an AV project to be conducted by a Transport Tribunal. The applicant or pilot proprietor may apply in writing to the Commissioner, within a specified period upon receipt of the Commissioner's decision, for a review against the decision by a Transport Tribunal. The application will be processed under the statutory powers of the Transport Tribunal in accordance with its standing practice and procedures.
- (c) Code of Practice: We propose to empower the Commissioner to issue and amend the Code to illustrate to the industry the detailed technical and operational requirements for the trial of AVs on vehicle design and construction, network system security, vehicle maintenance, training and record-keeping, etc. The TD will keep abreast of the latest development of AV technology and update the Code from time to time as necessary. If the operation of the concerned AV or the pilot proprietor fails to meet the requirements of the Code, the Commissioner may reject any application for the AV certificate, cancel the AV certificate for individual vehicle or even the AV pilot licence for the pilot proprietor.
- (d) Risk management: To ensure road safety, we propose specifying the liabilities of the holder of the pilot licence or certificate in respect of risk management, including provisions on matters such as insurance coverage, record keeping of journey data, reporting of incidents or accidents, and investigation, etc.

(II) Exemption Power

10. Under specific circumstances, an AV and/or its operator may be unable to comply with certain existing legal requirements, for instance –

- (a) Regulation 44(1) of the Road Traffic (Traffic Control) Regulations (Cap. 374G) prohibits a person in charge of a motor vehicle on a road from vacating the vehicle without having stopped the engine and set the brake. Therefore, the operator of an AV cannot get off the AV for a change from manual to autonomous operation without first switching off the engine and applying the brake;
- (b) Part III of the Road Traffic (Safety Equipment) Regulations (Cap. 374F) requires the installation of seat belts at the drivers' seats of different classes of vehicles and the wearing of seat belts by drivers. If the driver/backup operator of an AV is not present in the vehicle, the driver cannot meet the relevant seat belt wearing requirement; and
- (c) Section 14 of the Tai Lam Tunnel and Yuen Long Approach Road Bylaw (Cap. 474C) stipulates that if a fire occurs on or in any vehicle, the driver of the vehicle shall stop and immediately vacate the vehicle, and activate the nearest fire alarm if it is safe to do so. In case of absence of the driver in an AV, the person operating the AV in a remote control room will not be able to activate a fire alarm as required by the law even though he may communicate with the tunnel company about the fire situation.

11. In view of this, we propose making legislative amendments to allow a certain degree of flexibility in AV trial or use, so that such trial and use will not be hindered by the technical incompatibilities between the existing legal provisions and the development of technology and operation mode of AVs. Regarding road-transport-related ordinances¹, we propose empowering the Commissioner to grant exemption to individual trial/pilot scheme or AV on a need basis, so that certain provisions of the ordinances concerned shall not apply to such AVs. We plan to stipulate in the law the factors (including the safety of other road users, etc.) that the Commissioner has to take into account when exercising the exemption power. The Commissioner will also make reference

¹ Road-transport-related ordinances include the Road Traffic Ordinance (Cap. 374) and its subsidiary legislation, Road Tunnels (Government) Ordinance (Cap. 368), the Fixed Penalty (Traffic Contraventions) Ordinance (Cap. 237), etc.

to the views of a vetting committee² with due consideration given to the necessity and proportionality of exercising such power. In the meantime, to enhance transparency to the public, we propose adopting suitable administrative measures, including publishing the exemption granted in the Gazette as well as the details on the TD's website³.

12. As for cases involving Ordinances that are not directly related to roads and transport but exemptions may be required for individual AVs, the Government will consider the need for a separate exemption mechanism⁴ with reference to other jurisdictions' experiences in regulating AVs.

(III) Liabilities/offences and penalties

13. As mentioned above, we propose that the existing registration and licensing regime for motor vehicles shall also apply to AVs. On this premise, the liabilities of registered owners and licensees under the existing legislation⁵ will also apply in the case of AVs.

14. Despite the change in the modes of operation and driving, in principle there will still be legal liability on the driver in the context of AVs. In this connection, there is no requirement for a "driver" as defined under section 2 of the RTO⁶ to be inside a vehicle. Therefore, we consider that the definition

² Our preliminary proposal is to set up a vetting committee, which comprises members from relevant government departments, to advise the TD on the applications for exemption in respect of each pilot scheme.

³ We will also consider setting out certain specific conditions under which the Commissioner is expected or frequently required to consider granting an exemption. For example, if the main purpose of using AVs is to test whether such vehicles can provide more efficient carriage services, most of the AVs involved in the projects may be confined to certain class of vehicle (e.g. public light buses). Therefore, we may consider stipulating in the law that the regulation on the number of vehicles to be registered under section 23 of the RTO shall not apply to AVs, or that AVs belonging to certain prescribed classes of vehicles in Schedule 1 shall be allowed to provide passenger services for reward.

⁴ For instance, if a power of exemption is not expressly stated in such non-road-transport-related ordinances, we are considering amending the RTO to empower the Secretary for Transport and Logistics to grant such an exemption by legislation after consulting relevant bureaux/departments.

⁵ For instance, section 24 of the RTO specifies that a vehicle in registration must fall within the meaning of "roadworthy" as defined in section 2 of the RTO. The owner must ensure that the vehicle meets the legal requirements for a successful vehicle registration.

⁶ Section 2 of the RTO stipulates that "*driver, in relation to any vehicle (other than a rickshaw), vehicle of the North-west Railway, or tram, means any person who is in charge*

could also apply to the operator who stays inside or nearby the AVs, or in a remote control room operating the AV. In this connection, we propose that such persons shall also assume the existing liabilities of a “driver” when operating the AVs. When approving applications for AV certificate, the TD will carefully consider on a case by case basis whether conditions shall be imposed (see paragraph 8(b) above), including the requirements for AV trial to be conducted only at a designated place and time, for road testing to be conducted under the monitoring of a qualified driver/operator on site, and for AV being properly maintained and in good condition, etc., so as to ensure that holders of AV certificate or operators understand and assume the relevant liabilities.

15. We also propose empowering the Secretary to make subsidiary legislation on prohibiting any person from obstructing or hindering a trial or use of AV, or interfering with any equipment/device on an AV under trial or in use.

16. We will continue to keep abreast of the development of international technical standards for AVs, and draw on the experience and knowledge gained from a wider trial and use of AVs in Hong Kong for a timely review on the needs for updating the regulatory regime for AVs.

SUMMING UP

17. The new regulatory framework will allow for a wider and more flexible trial or use of AVs on Hong Kong roads. The new legislation aims to break through the limitations of the existing regulatory regime. For example, as AVs will be incorporated into the existing registration and licensing regime, they will be allowed to conduct more extensive and longer-term trials or uses on a wider range of roads or areas, instead of simply operating on a “point-to-point” basis under the existing mechanism. In addition, the new legislation will more systematically regulate the design, construction and operation of AVs through the Code, rather than following the technical standards of conventional motor vehicles. Moreover, the proposed exemption mechanism under the new legislation will also allow the AVs concerned to be exempted from certain legal requirements for the purpose of conducting more extensive and longer tests without compromising road safety, so as to cater for the development of the technology and operating mode, as well as the demand for daily use of AVs to carry goods or passengers in Hong Kong, etc.

of or assisting in the control of it and, in relation to a rickshaw, means any person pulling a rickshaw.”

18. The proposed regulatory framework is particularly important to facilitating the industry to conduct AV trial or use, including the autonomous transportation system that the Airport Authority Hong Kong is planning to build for use on the “AirportCity Link”. This relatively large-scale project may therefore be tested and operated under the proposed regulatory framework, without being subject to the restrictions of the existing laws. Also, the vehicles in this system may be allowed to provide passenger services after the Commissioner has exercised the relevant exemption power.

19. As mentioned in paragraph 17 above, AV trial must not affect road safety. At present, AV technology is still evolving. Before AVs can be widely and safely used, we must continue to ensure road safety while facilitating the industry to carry out projects for different trials or uses. This process will facilitate the sharing and accumulation of knowledge and experience between the TD and the industry, so that when the AV technology becomes more mature and ready to be more widely use in Hong Kong, our regulatory framework can be updated in a timely manner and ensure the wide use of AVs then is safe.

STAKEHOLDER CONSULTATION

20. The TD has set up the “Technical Advisory Committee on the Application of Autonomous Vehicle Technologies in Hong Kong” in November 2019 to explore with the industry, representatives of relevant research institutions and experts how best to draw up an appropriate regulatory framework for a wider trial and use of AVs in Hong Kong. Committee members supported our proposals, noting that they would be beneficial to the development of AVs in Hong Kong. The Government will continue listening to the views of the stakeholders to refine the proposals and finalise the details of the regulatory framework.

WAY FORWARD

21. The law drafting exercise is in progress. Upon its completion, we aim to introduce the Bill into the LegCo within 2022 at the earliest.

ADVICE SOUGHT

22. Members’ views are invited on the legislative proposals for establishing a regulatory framework for AV trial and usage set out in the paper.

Transport and Logistics Bureau
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