Speech by STL at Smart Mobility Forum (English only)

Following is the speech by the Secretary for Transport and Logistics, Mr Lam Sai-hung, at the Smart Mobility Forum organised by Invest Hong Kong today (March 1):

Director-General Alpha (Director-General of Investment Promotion at Invest Hong Kong, Ms Alpha Lau), distinguished guests, ladies and gentlemen,

May I start by commending Invest Hong Kong for organising the Smart Mobility Forum here today. This forum provides an invaluable opportunity for different stakeholders, including policymakers and industry leaders, to sit together, have a chat, and think about the future of Hong Kong's smart mobility landscape. It is my pleasure to be here with you today and share my thoughts on the subject.

In recent years, the development of smart cities has become a global trend. Many cities have been making greater efforts towards this end. What we could do to make the transportation and commuting experience safer, smarter and greener has been an important question that I hold dear to my heart. Under the Smart City Blueprint for Hong Kong 2.0 published in 2020, it is the Government's ambition to embrace innovation and technology to build a world-renowned smart Hong Kong, characterised by a strong economy and high quality of living. Transportation, as an integral part of our daily lives, plays a vital role in improving the economic well-being of Hong Kong. To this end, smart mobility is particularly critical to the smart city development.

I am an engineer by training and I have been practicing engineering for over 40 years. Whenever I come across and go deep into smart mobility, the imagination and crazy ideas always keep me, an engineer, awake for a whole night. Hong Kong is a small and densely populated city with ever-increasing transport and traffic demands. Over the years, we have taken pride in our highly efficient road and railway networks, which have been able to handle over 12 million public transport trips every day. By leveraging on innovation and technology, and making reference to the experience of Mainland and overseas cities, smart mobility development enables more-effective traffic management, facilitates journeys of the public, and makes the best use of public transport. Not only do these alleviate road traffic congestion and reduce overall carbon emissions, but also protect the environment and promote sustainable development in Hong Kong.

The success of Hong Kong's public transport system is attributed to the collaborative and enduring efforts of the Government and various stakeholders who, throughout the development history, have consistently embraced innovation. To name just a few, we had Asia's first cable funicular, the Peak Tram, in 1888. In the 1970's, we developed Southeast Asia's first Area Traffic Control System, and in 1997, the Octopus was put into the market, which set a model for contactless payment for many other cities. When we

talked about the area traffic control, I remember when I worked in the Transport Department, the Government sent its first batch of locally trained engineers working in the Government to the UK (United Kingdom) to receive training in advanced traffic and transport management. After that, the area traffic control took root in Hong Kong.

No doubt, these examples could all be considered as smart mobility initiatives when they were first introduced many years ago. However, innovation is a never ending journey of pushing the limits and exploring new frontiers. We shall never be complacent about what we have already achieved.

Transportation, in particular, calls for constant innovations. Continuing to expand our physical transportation infrastructure might be one possible way out in the short run, but we all know that it is definitely not a sustainable solution, given the limited size of Hong Kong. To propel the efficiency of our transportation system to new heights, we must seek innovative solutions that can address our future needs, and the Government has been sparing no effort in implementing various smart mobility initiatives since the release of the Smart Mobility Roadmap for Hong Kong in 2019.

One of the major initiatives under smart mobility is the implementation of the free-flow tolling service, or HKeToll in short, which enables motorists to pay the tunnel tolls remotely using toll tags at the government tolled tunnels and Tsing Sha Control Area. With HKeToll fully implemented last year, including the three road harbour crossings, drivers no longer need to stop and wait at toll booths anymore. This brings a smoother traffic flow, thereby improving the road traffic in the vicinity of tunnels. Moreover, the commuting public would also be benefitted after the existing toll booths at toll plazas are demolished, freeing up space for other transport-related purposes such as enhancement of existing bus stops or bus interchanges. Together with the traffic flow optimisation of the three road harbour crossings through the implementation of a time-varying toll plan in December last year, I am sure that this will bring you all an elevated driving experience.

We implemented the time-varying tolls since December 17 last year, so we are talking about basically two and a half months. Some of you may not be too familiar with the cross-harbour tunnels. Hong Kong Island is connected to Kowloon through three cross-harbour tunnels. In the past, some of my friends were divided into two groups. For one group, they considered that there were only two effective tunnels because one of the tunnels was extremely expensive. Basically they would not use that. The other group only used one tunnel because the other two tunnels were too congested. So with the implementation of time-varying tolls, I think the three tunnels are now fully utilised for the well-being of Hong Kong. Of course, I have to be prudent because the current success may not last but we will do whatever we can to make sure that the infrastructure can perform its functions properly and effectively.

Harnessing big data is the key to success for many businesses, and it is also crucial for supporting our smart mobility initiatives. To enhance traffic management and transport efficiency through the application of big

data analytics, the Office of the Government Chief Information Officer and the Transport Department, with the assistance of the Hong Kong Observatory, jointly developed the Traffic Data Analytics System, which is a model with a good range of historical and instantaneous data including the amounts of rainfall, traffic incidents, and journey times of different road sections of Hong Kong. The model can then produce forecast of a journey time in the coming 90-minute period, taking into account factors of traffic and weather conditions. This keeps road users informed of the road traffic and weather conditions, and assists them in better planning their routes ahead. In case traffic congestion happens at a certain road section, road users will be able to get early alerts and prepare alternative route plans. Meanwhile, the big data collected and analysed by the Traffic Data Analytics System also helps strengthen the Transport Department's ability in preparing for traffic management and contingency measures.

Another smart mobility initiative is to facilitate technological advancement and industry development of vehicle-to-everything (V2X) and autonomous vehicles (AVs) with a vision to realise wider trials and use of AVs on public roads in Hong Kong. AV technology has developed rapidly in recent years and trials have been carried out around the world. This new mode of transport could bring huge benefits to us, such as promoting road safety, avoiding traffic congestion, enhancing the mobility of citizens, reducing exhaust emissions caused by traffic congestion, etc.

To allow wider and more flexible trials and usage of AVs in Hong Kong, we have recently introduced a suitable and flexible regulatory framework for the use of AVs, at the same time ensuring public safety, paving the way for the long-term development of AVs in Hong Kong. Coincidently, the regulatory framework comes into effect today. We have been continuously promoting the development of Cellular V2X (or C-V2X) technology in Hong Kong. Researches and field trials on public roads have been conducted.

Let me try to give a pledge here – by the end of this year, Hong Kong citizens will have the opportunity to experience the first tested AVs on open roads, of course with full insurance coverage. There are many trials happening on the Mainland and other parts of the world. The AV trials on the Mainland focus on taxis or private cars. I think differently for Hong Kong. I would try to push AV for some sort of minibuses or the equivalent. Those minibuses may not be the one we perceive like the green or red public minibuses in Hong Kong. What I am talking about is a small bus that can carry more than 10 passengers or so and covers a fixed route. We will give a trial for that purpose so that Hong Kong citizens can have an opportunity to ride on this kind of AV on fixed routes. In Hong Kong it makes it a bit difficult if an AV is a taxi because we can't define the routes beforehand and passengers may need to go to areas like downtown, which may be a bit difficult at the start of the trial run. That's why I would try to put the focus on small bus trials.

On the other hand, the Government will continue to strengthen the exchanges and connections with other cities on the Mainland, in particular, within the Guangdong-Hong Kong-Macao Greater Bay Area, in respect of recognising the experience of trials and use of AVs as well as standardising

relevant technical requirements and industry practices for AVs.

The technological advancements in recent years, for example Internet of Things, 5G communication network, sensing technologies and autonomous vehicles, have established a fertile ground for further development of smart mobility solutions. In order to tie in with economic and social development and enhance Hong Kong's competitiveness, we commenced the Traffic and Transport Strategy Study, or TTSS in short, in December 2021 to map out a long-term strategy blueprint, with a view to maintaining a reliable, safe, smart, environmentally friendly and highly efficient overall transport system for Hong Kong.

Based on the vision of "Transforming Travel to People-centric, Efficient and Green Journeys Connecting Daily Lives", we have put forward nine transport strategy recommendations as the initial recommendations of the TTSS in the end of last year. These recommendations can be subsumed under three main strategies, namely "Enjoyable Journeys", "Well-connected City" and "Healthy Mobility". Examples of the recommendations include:

(1) Building a new generation of transport interchange hubs at strategic locations, which will integrate various transport facilities and amenities in a one-stop manner;

(2) Developing smart motorways, which, with adequate traffic detectors and lane control signals etc, will allow conversion of hard shoulders to regular lanes where traffic flow demands or use of the hard shoulders in emergency situations, and;

(3) Promoting autonomous vehicles, which have the advantage of eliminating human error, preventing driving misbehavior and resolving operational issues caused by different driving rules in Hong Kong and the Mainland.

When we talk about AVs, I always say that it is quite easy if all the vehicles are autonomous vehicles. But the most complicated area is on the hybrid, where some of the vehicles are driven by human beings and some by computers. This is the most difficult phase that we have to tackle and I don't know how long this transition will be. May I appeal to all of you in the audience today to help think about this – how we can achieve phase two full automation when we have to face the more difficult phase one first.

At the same time, we are collaborating with the Environment and Ecology Bureau in the promotion of electric and new energy vehicles. We are working on the necessary preparation works for the smart and green mass transit systems in East Kowloon, Kai Tak and Hung Shui Kiu/Ha Tsuen New Development Area. The smart and green mass transit systems are recommended under the Hong Kong Major Transport Infrastructure Development Blueprint, which was promulgated in December last year, to serve as a light and green feeder service to nearby railway stations and major public transport interchanges in areas with limited space or lower transport demand, with a view to suitably and effectively utilising public resources to meet the transport demand arising from local developments.

Smart mobility is a rethinking of the transportation infrastructure utilised in daily life and business, connecting many aspects of technology and mobility. The initiatives I outlined above are by no means exhaustive. We will continue to promote smart mobility along three key dimensions, namely, the active provision of smart transport infrastructure, facilitation of data sharing and analytics, as well as the launch of user-friendly applications and services.

Looking ahead, we target to promulgate the Transport Strategy Blueprint in next year to map out our visions up to 2050. Nevertheless, our effort to promote smart mobility initiatives never stops. With the ever-evolving technology, achieving our vision requires the concerted effort of government departments, the transportation industry and, of course, all of your innovative contributions.

Ladies and gentlemen, I sincerely invite everyone to join us and put forward your innovative solutions to meet Hong Kong's transport and traffic needs for the many more years to come, and transform Hong Kong into a smarter, more livable and sustainable city.

Last but not least, may I extend my best wishes for the success of this event and a fruitful day ahead for all participants. Thank you.