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**Paper for the House Committee meeting on 9 June 2023**

**Report of the Subcommittee on Matters  
Relating to the Development of Smart City**

**Purpose**

This paper reports on the deliberations of the Subcommittee on Matters Relating to the Development of Smart City (“the Subcommittee”).

**Background**

2. The Administration published the first edition of Smart City Blueprint for Hong Kong (“the Blueprint”) and the updated version, i.e. Smart City Blueprint for Hong Kong 2.0 (“Blueprint 2.0”), in 2017 and 2020 respectively. Blueprint 2.0 sets out over 130 smart city initiatives. In addition to the six smart areas under the Blueprint, namely “Smart Mobility”, “Smart Living”, “Smart Environment”, “Smart People”, “Smart Government” and “Smart Economy”, the initiatives that dealt with the epidemic and the Smart Village Pilots have also been included in a bid to build Hong Kong into a more advanced and livable smart city bringing convenience to the public and businesses. The Administration has said that it will continue to actively implement the various measures set out in Blueprint 2.0 with a view to facilitating the public and the business sector to enjoy further convenience and benefits that smart cities as well as innovation and technology (“I&T”) would bring to their daily lives.

3. The Administration promulgated the Hong Kong Innovation and Technology Development Blueprint (“I&T Blueprint”) on 22 December 2022 to establish a clear development path and formulate systematic strategic planning for Hong Kong’s I&T development over the next five to 10 years, charting Hong Kong in moving full steam towards the vision of an international I&T centre. I&T Blueprint sets out four broad development

directions, including “to enhance the I&T ecosystem and promote ‘new industrialization’ in Hong Kong”, “to enlarge the I&T talent pool to create strong impetus for growth”, “to promote digital economy development and develop Hong Kong into a smart city”, and “to proactively integrate into the overall development of the country and consolidate our role as a bridge connecting the Mainland and the world”.

4. The Administration has said that it will strive to drive and implement digital government initiatives. Apart from launching the Next Generation Government Cloud Infrastructure Services, Big Data Analytics Platform and “iAM Smart” one-stop personalized digital services platform, the Government will conduct a service-wide e-Government audit by end-2023, and put forward recommendations for enhancing the information technology (“IT”) systems and services of government departments. The aim is to turn all government services online by 2024 and provide one-stop digital services by fully adopting “iAM Smart” by 2025 so as to realize the goal of “single portal for online government services”. The Government will also leverage advanced technologies, e.g. big data analytics, artificial intelligence (“AI”), blockchain and geospatial analytics technologies, etc., to implement 100 digital government initiatives before the end of 2025 to provide more convenient services for the general public and the business sector.

### **The Subcommittee**

5. On 8 April 2022, the House Committee appointed the Subcommittee to study matters relating to smart city development. Ms Elizabeth QUAT and Dr Johnny NG served as the Subcommittee’s Chairman and Deputy Chairman respectively. The terms of reference and membership of the Subcommittee are set out in **Appendices 1** and **2** respectively.

6. The Subcommittee has held a total of nine meetings<sup>1</sup> since the commencement of its work in May 2022, and has received views from organizations/individuals on matters relating to smart city development at one of the meetings. Eight deputations/individuals have attended the meeting to present their views, and two other organizations have made their submissions. In addition, the Subcommittee has posted a notice on the website of the Legislative Council to invite submissions on the relevant issues. A list of organizations and individuals which/who have presented their views and made submissions to the Subcommittee is in **Appendix 3**.

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<sup>1</sup> The first meeting was held on 16 May 2022 to elect Chairman and Deputy Chairman as well as discuss the schedule of meetings and items for discussion for the Subcommittee.

## **Deliberations of the Subcommittee**

### Smart Mobility

#### *Progress of smart mobility initiatives*

7. Members have requested the Administration to expedite the introduction of various smart mobility initiatives, devise a specific timetable for implementing the various smart mobility plans under the Traffic and Transport Strategy Study (“TTSS”), and expeditiously implement the work of relevant legislative amendments. Members have also requested the Administration to set out the future vision and specific targets for the Smart Mobility Roadmap for Hong Kong published in 2019.

8. The Administration has advised that in the Smart Mobility Roadmap for Hong Kong, the Transport Department (“TD”) has devised a timetable for the various smart mobility initiatives, some of which would involve legislative amendments. In addition, TD is conducting TTSS, seeking to optimize the use of limited road resources through I&T, enhance road carrying efficiency and divert traffic on congested road sections. The authorities would also explore ways to make use of technology to provide mobility-on-demand traffic matching services. The Government intends to promulgate in 2025 a long-term Transport Strategy Blueprint.

#### *Smart motorways, autonomous driving and unmanned aircraft*

9. Members supports the Administration’s efforts on promoting smart motorways in Hong Kong and riding on the “vehicle-to-everything” technology to facilitate autonomous driving and the interaction and information transfer between vehicles and road facilities. Members have enquired about and raised suggestions on the initiatives of smart transport infrastructure, co-operation with the Mainland in promoting the construction of cross-boundary smart motorways, the development of the “vehicle-to-everything” and autonomous vehicle (“AV”) technologies, as well as optimizing the communications technologies and information sharing for travelling between the Mainland and Hong Kong, etc.

10. The Administration has advised that when taking forward strategic major road projects as well as the “Strategic Studies on Railways and Major Roads beyond 2030”, it would explore the introduction of smart mobility elements in the course of planning and design, and would also enhance transport connectivity with other cities in the Guangdong-Hong Kong-Macao Greater Bay Area (“GBA”) and conduct topical studies on cross-

boundary transport services, including the technical standards and systems for autonomous driving and “vehicle-to-everything”, etc.

11. Members are of the view that a legal framework compatible with the introduction of AV technologies should be developed to allow wider and more flexible trial and use of AVs by the industry in Hong Kong. The Administration has advised that TD published in 2017 a “Guide on the Application for Movement Permit for Test, Trial and/or Demonstration of AVs on Roads within Designated Sites in Hong Kong” and subsequently published a new set of “Guidance Notes on the Trials of AVs” in December 2019 to provide guidance to individuals and organizations interested in conducting AV trials. When vetting and approving the locations for AV trials, consideration will be made as to whether the locations proposed are safe and controllable and do not affect other road users.

12. Members hold that the Administration should map out plans for the air travelling mode using unmanned aircraft in the Smart City Blueprint for Hong Kong 3.0 (“Blueprint 3.0”), and should particularly explore the feasibility of carrying passengers with unmanned aircraft in the Northern Metropolis, the San Tin Technopole, Lau Fau Shan and the Hong Kong Science Park (“Science Park”). The Administration has advised that it will further discuss issues relating to the application of unmanned aircraft etc. with relevant departments (e.g. the Civil Aviation Department).

#### *Popularization of electric vehicles*

13. Members have enquired whether the Administration, when formulating the Smart Mobility Roadmap for Hong Kong and Blueprint 2.0, has incorporated into them the long-term policy objectives and plans in relation to the promotion of electric vehicle (“EV”) usage as well as the necessary ancillary facilities to promote the popularization of EVs. Members have also requested the Administration to review and refine the relevant policy when appropriate and step up publicity to facilitate the installation of EV charging-enabling infrastructure (“EVCEI”) at more eligible private residential buildings and estates.

14. The Administration has advised that according to the Hong Kong Roadmap on Popularisation of Electric Vehicles, new registration of fuel-propelled private cars (including hybrids) will be stopped in 2035 or earlier to attain zero vehicular emissions before 2050. To encourage the provision of charging-enabling infrastructure at parking spaces of new private buildings, the Administration has tightened the arrangement of gross floor area concessions to only provide concession to underground car parks that have EVCEI installed at each car parking space. As regards public charging

facilities, the installation of medium chargers at government car parks has been completed, and preparation is being made to convert some existing petrol and liquefied petroleum gas filling stations gradually into quick charging stations.

*The “HKeMobility” mobile application*

15. Members have commented that the Administration should step up publicity for the “HKeMobility” mobile application and enhance its functions, including providing the information on parking vacancy and data on estimated time of arrival for rail trains as well as adding the function of message board to collect users’ views.

16. The Administration has advised that TD will continue to enhance the functions of “HKeMobility”. The real-time vacancy information for nearly half of the hourly parking spaces in Hong Kong is currently released via “HKeMobility”. The Lands Department has also added terms in relevant land leases of private developments, requiring operators of public car parks within the developments to provide real-time parking vacancy information to TD.

*Real-time adaptive traffic signal systems*

17. Members have requested the Administration to provide the specific timetable and targets for installing real-time adaptive traffic signal systems, and illustrate whether it will develop an intelligent traffic management system to achieve proper traffic management and reduce the occurrence of traffic accidents. The Administration has advised that TD is installing an area-wide real-time adaptive traffic signal system to cover multiple linked signalized junctions in Tung Chung town centre, and will install the system in other suitable signalized junctions across the territory. At present, staff of TD’s Operation Centres will adjust traffic lights during traffic incidents in order to maintain traffic order on the roads. In the long run, the authorities will learn from the relevant experience of implementing real-time adaptive traffic signal systems and consolidate other smart transport technologies to look into ways to improve the existing traffic management systems, and at the same time enable the simultaneous dissemination of relevant information to road users through “HKeMobility”.

*Automated parking systems*

18. Members have raised concerns about the inadequate supply of parking spaces in Hong Kong and hence suggested that the Administration should consider introducing automated parking systems and encourage private

developers to adopt such systems and increase car parking spaces in their developments. The Administration has advised that it is proactively taking forward automated parking systems in appropriate public works projects and short-term tenancy car parks.

### *Smart Traffic Fund*

19. Some members are concerned whether research projects subsidized by the Smart Traffic Fund are most needed by members of the public or in the market. Members have enquired about the approval and vetting procedures of the Fund, its fairness as well as how to ensure an optimal use of the funding, etc., and called for a review of the conditions of granting higher amounts of subsidy for collaboration between enterprises and public bodies. The Administration has explained that the Fund aims at bringing in expertise by motivating different sectors of the community to participate in promoting smart mobility. According to the conditions of the Fund, the maximum amount of subsidy for the public sector will be 90% of the estimated project cost, while that for enterprises will be 50% of the estimated project cost. It will ensure that the funded projects can achieve the anticipated policy objectives.

### *Smart airport initiatives*

20. Members have noted that the Airport Authority Hong Kong has added a number of innovative designs to enhance the efficiency of operation at the Hong Kong International Airport (“HKIA”), and “Smartlane”, a new smart passenger security check system, will progressively be installed at HKIA from end 2024. Members have suggested organizing briefing sessions on the new facilities at HKIA for the tourism industry to familiarize practitioners with the usage of the new facilities as early as possible. Some members have expressed concern as to whether new immigration measures have been proposed to enhance the experience of inbound passengers. The authorities have advised that they plan to organize briefing sessions for the industry after the resumption of more flights to familiarize practitioners with the operation of the new facilities, and will further improve the efficiency and convenience in respect of the handling of arrival baggage at HKIA and optimize the flow of and facilities for air transfer.

### *Making use of technology to improve the travel arrangements for the visually impaired*

21. The Subcommittee received public views on issues relating to smart city development in the meeting on 28 March 2023. Members and some deputations exchanged views on how to support visually impaired

individuals in coping with the difficulties encountered in their daily lives. Some members have suggested that the Administration should provide economic incentives or introduce legislation to encourage or require organizations to install and use barrier-free digital technologies (such as indoor positioning and navigation facilities) to improve accessibility for persons with disabilities. Members have also suggested that the Administration should take the lead in providing barrier-free facilities, such as indoor positioning and navigation, at government premises.

22. The Administration has responded that various funding schemes have been launched to encourage organizations to develop barrier-free facilities, and efforts will continue to be strengthened to promote the use of I&T by the industry to help people with special needs (such as the visually impaired).

### *Protection of privacy*

23. As the implementation of smart mobility initiatives involves the collection, usage and sharing of a large amount of personal data, members have enquired how the Administration would protect the privacy of members of the public. The Administration have advised that TD conducts its analysis mainly by making reference to data not involving personal data. It will elucidate, among others, the laws and regulations upon which the data are analysed and how the personal data of members of the public will be protected so as to allay their concerns.

### Smart Living

24. Members have noted that the Common Geographic Information System Platform (“CGISP”) allows stakeholders to access and share data containing geographic information. In 2015, the Commission on Strategic Development<sup>2</sup> pointed out that the information available on CGISP could facilitate the planning for new development areas (“NDAs”) (e.g. the Northern Metropolis). Members have enquired about the Administration’s specific plan for CGISP development.

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<sup>2</sup> The Commission on Strategic Development (“Commission”) is an important advisory body established in 1998 to explore the way forward for Hong Kong’s long-term development strategies. The Commission is chaired by the Chief Executive, and there are three ex-officio members (the Chief Secretary for Administration, the Financial Secretary and the Head of the Central Policy Unit) and 32 non-official members. Given the re-organization of the Central Policy Unit as the Policy Innovation and Co-ordination Office by then Chief Executive Carrie LAM, the Commission was scrapped with effect from 1 July 2017.

25. The Administration has informed members that the Development Bureau is developing the Common Spatial Data Infrastructure portal (“CSDI portal”) to provide an information infrastructure for government departments as well as public and private organizations for promoting the sharing of spatial data and supporting the development of various smart city applications. The CSDI portal aims to offer reliable spatial data services to achieve effective use of resources, smart city construction and sustainable development. The CSDI portal and relevant spatial data have been made available for use by the industry and members of the public by the end of 2022. On members’ suggestion that the Administration should provide high-definition digital roadmaps to promote the development and application of AVs, the Administration has advised that it will follow up related matters with the relevant government departments.

*Promoting digital inclusion and rehabilitation technology<sup>3</sup>*

26. Members have urged the Administration to be more proactive in promoting digital inclusion and rehabilitation technology, and suggested that the Information and Communications Technology Outreach Programme for the Elderly be extended to the elderly persons residing in Mainland cities in GBA.

27. The Administration has advised that it will promote digital inclusion for the elderly on various fronts to enhance their ability of and interest in learning and using digital technologies. It will join hands with the Guangdong Provincial Government to look into the introduction of cross-boundary e-Government services. In addition, the Government has launched the “Innovation and Technology Fund for Application in Elderly and Rehabilitation Care” to encourage applicant institutions to identify appropriate research and development (“R&D”) companies for collaboration to try out newly developed technology products specifically designed to meet the care and rehabilitation needs of the elderly or persons with disabilities so as to improve their quality of life.

*Extending Wi-Fi services to remote areas*

28. Some members have pointed out that the progress of rolling out fibre-based networks for many villages in remote areas is slow, as more than 100 villages are still not covered by fibre-based networks. For villages where fibre-based networks are available, the speed of Internet connection is unsatisfactory and many users are still not given access to basic network

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<sup>3</sup> The discussion on promoting digital inclusion and promoting the learning of science is separately illustrated in paragraphs 108 to 109 of this report.



services. Members have suggested that the Administration should require network suppliers to enhance the rate of mobile telecommunications network coverage for villages in remote areas and hiking trails to allow public access to the Internet through mobile telecommunications services. The Administration has responded that the Government is promoting 5G development on various fronts through installing radio base stations and encouraging deployment of 5G technology, etc. Free Wi-Fi services have been available at more than 70 village premises as of September 2022, and will gradually be extended to more than 100 village premises within 2023.

### *Telehealth services*

29. Members have enquired the Administration about the provision of telehealth services for the elderly living in villages in remote areas or residential care homes for the elderly (“RCHEs”), as well as issues relating to the delivery of medicine under telehealth services. The Administration has informed members that the Hospital Authority (“HA”) has been providing pilot telehealth services for patients at its specialist clinics since April 2021. Telehealth and medication dispensing services have been provided at designated clinics for COVID-19 confirmed cases during the epidemic. In addition, through Smart Village Pilots, HA, together with the Office of the Government Chief Information Officer (“OGCIO”), would offer services for selected patients who reside in Cheung Chau and need to attend follow-up consultations at Pamela Youde Nethersole Eastern Hospital. HA also provides telehealth services for the elderly living in Tai O and Mui Wo.

30. The Administration has further explained that with the launch of the “Multi-disciplinary Outreaching Support Teams for the Elderly” by the Social Welfare Department (“SWD”), the outreaching teams pay visits to RCHEs to provide on-site consultation and medication services. Furthermore, funding applications have been approved under the Innovation and Technology Fund for Application in Elderly and Rehabilitation Care for projects relating to video communication and remote training devices to enable RCHE staff to consult professionals through the use of video where necessary. SWD will also explore the feasibility of building smart RCHEs, such as the Kwu Tung North Multi-welfare Services Complex, which will commence service in the third quarter of this year and comprise seven RCHEs. To support the application of smart systems at the Complex in the future, the Architectural Services Department has also provided additional infrastructure at the Complex to facilitate connection with Wifi networks and 5G mobile telecommunications systems in the future. In addition, the RCHEs at the Complex will also be equipped with gerontechnology facilities, including contactless vital sign monitoring systems, monitoring

systems with alarms for bed exit and fall detection, as well as intelligence robots for conducting scheduled room patrols and supporting virtual visits.

### *Using satellite system technologies*

31. Referring to the development of low-orbit satellite and mobile communications network, some members hold that the Administration should explore more advanced use of technology, set an example and establish network connections with the Mainland when rolling out new satellite system applications so as to facilitate the use of cross-boundary e-Government services by members of the public.

32. The Administration has advised that the Mainland's BeiDou Navigation Satellite System has already covered most of the areas in the Mainland (except Hong Kong and Taiwan). The satellite systems of other countries (e.g. the United States of America, Europe and Russia) are currently used in Hong Kong. The Administration hopes that the BeiDou Navigation Satellite System can cover Hong Kong as soon as possible so that the public and enterprises will be provided with more choices.

### Smart Environment

#### *Installation of multi-functional smart lampposts to collect environmental data*

33. Members have enquired whether the Administration will carry on the Multi-functional Smart Lampposts Pilot Scheme ("Pilot Scheme") and consider installing high-definition video cameras on smart lampposts to enhance enforcement efficiency. The Administration has advised that smart lampposts are important infrastructure for promoting smart city development in Hong Kong and facilitating 5G network construction, and the Government will continue to take forward the Pilot Scheme. As regards the installation of video cameras, relevant departments are exploring the technology solutions for using different smart devices in respect of detecting vehicle speed and identifying vehicle types.

34. Members have noted that the Environmental Protection Department ("EPD") is currently installing sensors at smart lampposts at various urban locations to collect relevant air quality data. Members have enquired whether the Administration has plans to install smart lampposts at other locations, and whether remote sensing devices are among the standard accessories fitted to smart lampposts. The Administration has advised about its plans to launch a pilot project to install remote sensing devices at NDAs,

such as Tung Chung, Fanling North and Kwu Tung North, for air quality monitoring.

35. Members are of the view that the Administration should consider installing the smart lampposts and sensors at all NDAs. The Administration has said that it is reviewing the way forward for the Pilot Scheme. The smart lampposts can support the installation of more innovative applications and smart devices by policy bureaux/departments (“B/Ds”). It intends to take forward the scheme for installing smart lampposts at NDAs in full force, and remote sensing devices will be installed at NDAs as far as possible, subject to the availability of resources. Members have requested the Administration to expedite the implementation of pilot schemes which are technically well-established.

#### *Combating fly-tipping activities*

36. Some members have expressed concerns that illegal dumping of waste at vacant sites has affected environmental hygiene, and enquired how the Administration would make use of technology to protect the environment and how it would follow up the matters relating to illegal dumping of waste, etc.

37. The Administration has advised that EPD has resorted to the “Smart Drones” to monitor remotely any activity of illegal dumping and filling of construction and demolition waste to expose the whereabouts of the polluters and enable investigators to intercept them more efficiently and effectively. Furthermore, more than 200 surveillance cameras have been installed across the territory, which operate on a 24-hour basis with infrared night vision function and can be flexibly deployed to different locations on a need basis. EPD would analyse the information collected by the surveillance cameras to identify black spots of illegal dumping for taking enforcement or other follow-up actions accordingly.

38. Members have noted that the Food and Environmental Hygiene Department (“FEHD”) has implemented the Internet Protocol (“IP”) Camera Scheme at illegal refuse deposit blackspots across the territory. Some members have pointed out that members of the public are concerned about the privacy issues involved in the use of IP cameras. The Administration has advised that the IP camera system is mainly used to record the situation at illegal refuse deposit blackspots and does not have any facial recognition function. IP cameras with AI functions can capture the registration information of vehicles, which are especially effective in tackling direct deposit of refuse from vehicles or unloading of refuse from vehicles by offenders at such blackspots. As for the delivery and deposit of refuse at

blackspots by handcarts, IP cameras have certain deterrent effects. As it is likely for offenders to keep dumping refuse on the same spots illegally, enforcement officers can plan and take their actions based on the footage to gather evidence from and prosecute those engaged in illegal refuse deposit.

*Enhancing the refuse collection facilities in rural areas*

39. Members have noted that to improve the refuse collection facilities in rural areas, FEHD has been actively developing fully-enclosed refuse collection facilities equipped with a solar sensor. Members have enquired about the specific locations of such facilities, whether the new refuse collection facilities in rural areas will all be equipped with a sensor-activated compactor, and whether a central management system will be set up to facilitate the monitoring of the sanitary conditions of the refuse collection facilities in remote rural areas.

40. The Administration has replied that starting from 2023-2024, FEHD would progressively put in place fully-enclosed refuse collection facilities with new design at 500 priority rural locations. It has currently identified more than half of the rural locations suitable for setting up such facilities, and will continue to communicate with villagers and village representatives to identify suitable locations for setting up relevant facilities. In addition, it will set up adequate refuse collection facilities based on the volume of refuse at individual rural locations to improve environmental hygiene.

*Recycling and treatment of food waste*

41. On members' suggestion that more food waste treatment facilities should be built to enhance Hong Kong's capacity in this regard, the Administration has advised that the Organic Resources Recovery Centre ("ORRC") Phase 1 (O-PARK1), which commenced operation in 2018, adopts a biological process of anaerobic digestion and composting to convert food waste into biogas as renewable energy and compost. ORRC Phase 2 (O-PARK2), which has commenced construction and is anticipated to start operation in 2024, will convert food waste into electricity and fertilizer with anaerobic digestion technology to recycle food waste into renewable energy. In the meantime, EPD works with the Drainage Services Department to examine the use of existing and planned sewage treatment works ("STWs") to take forward the "food waste/sewage sludge anaerobic co-digestion" technology in order to expedite the enhancement of the overall food waste recycling capacity in Hong Kong. The Administration will extend the application of the technology to other STWs where sewage sludge anaerobic digestion facilities are or will be available.

42. As regards the collection of domestic food waste, the Administration has advised that EPD, in collaboration with the Housing Department and the Hong Kong Housing Society, has launched an 18-month trial scheme on food waste collection at public rental housing (“PRH”) estates using smart recycling bin technology. The first phase, covering a total of about 30 blocks in five PRH estates, has commenced. The scheme is targeted to be extended to a total of 100 PRH blocks in 2023-2024, and will help the Administration conduct tests on some more cost-effective food waste collection models. Separately, Food TranSmarter, developed by the Hong Kong Productivity Council (“HKPC”), can automatically convert food waste into slurry without the need for food waste separation. The Administration will continue to promote the system to local eateries and shopping malls.

#### *Smart Public Toilet System*

43. Members have noted that to improve the hygiene and services standards of public toilets, FEHD has developed a Smart Public Toilet System (“SPTS”) to conduct real-time monitoring of the usage of public toilets and transfer real-time data to the backend computer system through Internet of Things (“IoT”) technology for analysis, and follow up with service contractors on individual operational issues. Members have enquired about the public views in using SPTS, the Administration’s measures to continuously improve the environmental hygiene and odour of public toilets, as well as how it will improve the service standards of other public toilets in the light of the experience in piloting SPTS, etc.

44. The Administration has said that members of the public have expressed their concerns on the usage, sanitation and comfortability of public toilets in Hong Kong from time to time. The Government will conduct timely reviews and take follow-up actions based on the views on public toilet services collected from users. In addition, FEHD staff can inspect the data collected about the operation and problems of public toilets on a real-time basis (such as consumables not being replenished, odour problem or damaged electrical and mechanical equipment) and take follow-up actions accordingly, and at the same time monitor the service performance of contractors. FEHD will install appropriate equipment subject to the location and usage of the public toilets concerned, and also continue to review and optimize SPTS as well as introduce it to refurbishment projects or new public toilets as appropriate with a view to enhancing the overall management and service quality of public toilets.

### *Rodent Control Pilot Project*

45. Members have enquired about the effectiveness of the Rodent Control Pilot Project implemented at Yeung Uk Road Market in Tsuen Wan on a trial basis. The Administration has advised that FEHD had respectively placed about 160 motion detection sensors and 100 rodent traps and T-shaped bait boxes at Yeung Uk Road Market. The devices are connected to the Government Wide IoT Network to enable real-time monitoring by FEHD of rodent activities in the market, large-scale deployment of such devices by FEHD staff to difficult-to-reach locations where rodents frequently access, as well as speedy collection of rodents caught in traps to make improvement to the situation. Meanwhile, through a web-based management platform, data collected can be systematically analysed for providing useful intelligence for strategic deployment of target-specific rodent control measures and timely adjustment of the control programme.

### *Green Tech Fund*

46. Members have enquired about the objectives of the Green Tech Fund and the effectiveness of the approved projects, as well as whether the Administration will consider refining the assessment criteria of the Fund to subsidize more organizations to participate in green technology R&D.

47. The Administration has advised that the Government established the Green Tech Fund in 2020 to provide better and more focused funding support to R&D projects which can help Hong Kong decarbonize and enhance environmental protection. Projects in the four areas of Net-zero Electricity Generation, Energy Saving and Green Buildings, Green Transport and Waste Reduction will be given priority. The R&D projects approved cover a wide range of topics, including the promotion and development of new energy and renewable energy, the promotion of transport electrification, the promotion of a circular economy and turning waste into resources, low-carbon waste management technologies, smart waste management, and smart air quality monitoring, etc. The Fund has been open for the third-round application towards the end of 2022. Members have urged the Administration to encourage more universities and private research institutes to apply for the Green Tech Fund and provide appropriate guidelines and assistance to the applicant institutes.

## Smart Economy

### *Promoting the development of Fintech and nurturing Fintech talent*

48. Members have requested the Administration to step up efforts in promoting business digital transformation, and in particular, expedite the implementation of financial technology (“Fintech”) and re-industrialization to further enhance the local I&T ecosystem and support the application of I&T by various sectors. Members have expressed concerns that in Hong Kong’s bid to develop Fintech and drive economic development through Fintech, professionals on various fronts, such as cybersecurity and AI, are needed. In this connection, they have enquired how the Administration would nurture and attract Fintech talent.

49. The Administration has advised that the Talent List of Hong Kong currently comprises experienced Fintech professionals. The Government has been maintaining close liaison with the industry to ensure that the job descriptions and qualification requirements of experienced Fintech professionals in the Talent List are up-to-date so as to meet the latest development needs of the industry. On nurturing Fintech talent, many of the local universities and tertiary institutions have already introduced Fintech-related programmes, and around a thousand students graduate from these programmes each year.

### *Development of the virtual asset market*

50. Members have enquired how the Government would drive the sector in integrating the development of virtual assets (“VAs”). The Administration has advised that the definition of VA is broad, encompassing cryptocurrencies, “non-fungible tokens” (commonly known as “NFTs”) and virtual items used in digital games, etc. Given the extensive application of NFT, ranging from art creation and trading to product concepts, etc., the sector is optimistic about its development. Since the Government’s issue of the Policy Statement on Development of VAs in Hong Kong, many VA and metaverse related enterprises have expressed their intention to establish their presence or seek development opportunities in Hong Kong.

51. Members have pointed out that in the face of fierce competition in the market, business of the licensed virtual banks in Hong Kong has been affected. Members have enquired how the Administration would strike a balance between regulating and developing VA trading platforms with a view to facilitating the development of the sector. The Administration has explained that the two current licensed VA trading platforms have submitted their licence applications to the Securities and Futures Commission (“SFC”)

under the opt-in regime. Under the licensing regime for VA service providers, there is no limit to the number of licenses granted to VA trading platforms.

52. Members are of the view that given the differences between VA service providers and traditional financial institutions in terms of service users as well as actual and potential risk tolerance, the Administration should avoid excessive regulation on the VA service industry and maintain close communication with the VA sector to create a facilitating environment. The Administration has advised that the regulators have adopted the regulatory principle of “same business, same risk, same rules”. VA exchanges must comply with the requirements and fulfil the obligations currently applicable to traditional financial institutions, as well as the regulatory requirements on investor protection, such as ensuring proper asset custody and financial soundness, etc. The Administration would review the VA market development from time to time and make timely adjustments to the implementation of the regulatory regime.

#### *Promoting electronic payment*

53. Members have pointed out electronic payment (“e-payment”) can be further popularized in Hong Kong. Members have enquired whether the Administration will mandate the use of e-payment by traders for daily transactions. In addition, members have also pointed out that there are still various difficulties in using e-payment while travelling between Hong Kong and the Mainland. For example, some e-payment platforms widely used in Hong Kong are used by just a very small number of traders in the Mainland. Members have enquired how the Administration will further promote e-payment and address the difficulties encountered by members of the public.

54. The Administration has advised that members of the public are used to shopping with credit cards. Despite the Government’s promotion of other e-payment options for commercial transactions in the past, such payment options have not yet been popularized. Therefore, the Administration has set aside funding in the Budget of the current year for Cyberport to launch a Digital Transformation Support Pilot Programme in support of the use of e-payment transaction or management systems by the small and medium enterprises (“SMEs”) of specific sectors, such as catering and retail, for achieving digital transformation with a view to improving the efficiency of their business operations. In addition, the Hong Kong Monetary Authority (“HKMA”) has announced the launch of the “Commercial Data Interchange” platform in October 2022 to give financial institutions access to more commercial data under the authorization of enterprises (especially SMEs) and facilitate SMEs’ access to financing services.



### *Stablecoins and e-HKD*

55. Members have expressed concerns about the Administration's policy on stablecoins as well as the impact of the circulation of stablecoins on the local legal tender. The Administration has advised that investors are generally required to convert stablecoins before they can conduct VA trading. Generally speaking, as stablecoins are issued by private institutions, the absence of regulation may result in a certain degree of risk to users as well as the stability of currencies and the financial system. The Government is looking into ways to regulate stablecoins.

56. The Administration has advised that HKMA is preparing and laying the foundation for the possible implementation of e-HKD in the future through a three-rail approach: Rail 1 aims to lay the technology and legal foundations for supporting the implementation of e-HKD. Under Rail 2, which will run in parallel to Rail 1, HKMA will examine in details actual cases, as well as application, implementation and design issues relating to e-HKD. It will also conduct a series of pilots in close collaboration with various stakeholders to gain practical experience. Rail 3 is concerned with launching e-HKD, and HKMA will consolidate the outcomes of Rail 1 and Rail 2 for more thorough implementation planning and set the timeline for launching e-HKD. Furthermore, the Government is now exploring the launch of a series of pilot schemes, including a pilot issuance of tokenized green bonds under the Government Green Bond Programme.

### *Promoting the sharing of financial data*

57. Some members have commented that the Fintech initiatives introduced by the Administration mainly focus on e-payment and virtual banks. Members have enquired about the Administration's specific plans to help Fintech enterprises and companies promote their business through the use of financial data, and whether it will consider setting up a central databank and opening up more data for building a more active Fintech ecosystem.

58. The Administration has advised that HKMA launched the Open Application Programming Interface ("API") Framework for the Hong Kong Banking Sector in 2018 to facilitate collaboration between the banking sector and third-party service providers in a secure and controllable environment, thereby promoting the development of innovative banking products and enhancing customer experience. With Open API, financial institutions may open up their internal systems and data for programmatic access by third-party service providers. For instance, upon the implementation of Open API, data pertaining to the products and services of different banks can be

aggregated under the same website/application, making it easier for users to compare and conduct financial planning. On cross-boundary exchange and application of financial data, the Administration has said that it will continue to maintain close liaison with Mainland regulators and various stakeholders to strike for greater policy room.

*Cross-boundary “one-stop” platform on Fintech*

59. Members support HKMA’s introduction of the cross-boundary “one-stop” platform on Fintech. Members have enquired about the progress of the platform, including the pilot for the platform, as well as HKMA’s plans to conduct tests for new cross-boundary Fintech projects.

60. The Administration has advised that HKMA and the People’s Bank of China (“PBoC”) provide a connected one-stop platform for financial institutions and technology companies to conduct pilot trials of cross-boundary Fintech initiatives concurrently in the two places, allowing them to obtain early feedback from regulators and users, thereby expediting the launch of new products and lowering the costs. Members have called on the Administration to expedite the conclusion of various implementation details with PBoC.

*Promoting environmental, social and governance and the development of green finance and carbon markets*

61. Members have suggested that the Administration should proactively promote the development of green finance and carbon markets, and draw reference from the practice of Singapore by imposing a carbon tax on enterprises or allowing them to offset their taxable emissions in lieu of paying carbon tax by purchasing international carbon credits. Members have commented that Hong Kong should serve as the bridge connecting the Mainland and places around the globe to contribute to carbon market development.

62. Members have commented that environmental, social and governance (“ESG”) elements will govern the development of smart economy in the future. The Administration should factor in ESG elements in preparing Blueprint 3.0 in order to promote the development of green and sustainable finance. Given that ESG performance has become an important indicator for measuring enterprises’ performances in their business operations, members have urged the Administration to offer assistance to SMEs in achieving the goal of carbon neutrality before 2050.

63. The Administration has advised that to support the establishment of a green and sustainable finance talent pool in Hong Kong, the Government has already introduced the Pilot Green and Sustainable Finance Capacity Building Support Scheme, which seeks to provide subsidies for local eligible practitioners and prospective practitioners to participate in training related to green and sustainable finance and obtain relevant professional qualifications. It is noteworthy that there is a positive relationship between ESG ratings and the net share values of enterprises. In addition, SFC and the Stock Exchange of Hong Kong Limited have formed a joint working group with a view to developing proposals that are aligned with the International Sustainability Standards Board standards for Hong Kong-listed issuers.

64. The Administration has advised that the Hong Kong Exchanges and Clearing Limited (“HKEx”) has launched the Core Climate, a voluntary carbon trading platform which provides an effective and transparent platform for the trading of voluntary carbon credits and instruments. HKEx will continue to proactively explore an ecosystem for carbon trading and endeavour to develop Hong Kong into an international carbon trading centre.

#### *Application of technology in court proceedings*

65. Members have expressed concerns that the Judiciary lags far behind its counterparts in certain jurisdictions in the application of technology, and pointed out that the COVID-19 epidemic has seriously impeded the conduct of court proceedings physically, and that the Judiciary should accelerate the application of technology in court proceedings to improve the efficiency of relevant proceedings.

#### Smart Government

66. The Subcommittee is concerned about the effectiveness of the various smart government initiatives taken forward by the Administration. Members have enquired about the timetable for the Administration’s plan for the full provision of e-Government services, whether it will promote the full implementation of e-Government services by means of legislation, as well as the achievement of data interchange, etc.

#### *Division of work in respect of taking forward smart government initiatives*

67. Members have noted that the Innovation, Technology and Industry Bureau (“ITIB”) plays the role of co-ordinator in promoting smart city development, including the work relating to data interchange among departments. Members are of the view that to effectively achieve various objectives, ITIB needs to be conferred with sufficient powers to ensure co-

operation by various departments in the execution of plans. In response, the Administration has pointed out that government departments are fully co-operative in implementing various smart city initiatives without any hindrance.

68. Members have enquired about the roles of and division of work between OGCI and individual departments in promoting the development of smart government and the work of system development. The Administration has advised that OGCI takes the lead in promoting the development of smart government. OGCI supports B/Ds in their IT initiatives, including working with service development contractors to rationalize the design of departmental computer systems, developing common e-Government services and providing support for the management of central IT infrastructure and services, etc.

69. Members have urged the Administration to increase manpower to expedite the digital transformation of public services and at the same time relieve the work pressure of civil servants. The Administration has informed members that the manpower required for tasks such as system development will be met with the support provided by OGCI through internal deployment of civil servants and engagement of contract staff or contractors. Such an arrangement enables B/Ds to cope with fluctuations in their IT manpower requirements properly.

#### *Establishing a “Big Data Bureau”*

70. Members have asked if the Administration will consider establishing a “Big Data Bureau” to handle issues in relation to data collection and update, data quality, protection of privacy, data interchange among departments as well as trading of data, etc. in a centralized manner. The Administration has advised that it keeps an open mind on the establishment of a “Big Data Bureau”. Regarding data management and usage, ITIB will continue to play the roles of coordinator and advocate.

#### *Setting IT standards and usage of open source software*

71. Members have enquired whether the Administration will formulate policies on the usage of open source software (“OSS”) and set technical standards for the selection of OSS to reduce reliance on certain companies or products. The Administration has explained that the Government had been driving the use of OSS among various B/Ds. OGCI will update the technical standards from time to time and issue technical guidelines to various B/Ds. On the selection of technology products, while taking into consideration factors such as product safety and compliance with

international and national standards, the Administration will also conduct global procurements to avoid purchasing incompatible equipment or products that may be subject to supply restrictions.

*Enhancing and promoting the “iAM Smart” platform*

72. Members have noted that the Administration is proactively promoting the provision of e-Government services via the “iAM Smart” platform, which supports over 220 electronic services offered by public and private organizations so far. It aims to achieve the full implementation of e-Government services within two years, as well as the full adoption of “iAM Smart” by all government departments for the provision of e-Government services within three years to realize the goal of “single portal for online government services”. To this end, OGCIO strives to drive and facilitate various departments to upgrade their IT systems. The Administration has added that government departments are committed to achieving data interchange among themselves. At present, most of the data sharing initiatives can be implemented through administrative arrangements and technological options, and departments will take appropriate follow-up actions when there is a need to pursue legislative amendments in the future.

73. Members have commented that continuous publicity should be conducted and regular enhancement should be performed for the “iAM Smart” platform so that members of the public can experience more convenient services using “iAM Smart”, thus attracting them to register for and use the platform. Members have enquired how the Administration would encourage more government departments as well as public and private organizations to adopt “iAM Smart” to provide their online services with a view to boosting usage by members of the public.

74. The Administration has advised that OGCIO has plans to upgrade “iAM Smart” to enable government departments to integrate their existing online services with “iAM Smart” in a more convenient and simple manner, simplify the workflows and develop more services that can bring convenience to the public. It would also allow members of the public to enjoy the use of various online government services more conveniently and swiftly. Furthermore, the Government has been proactively promoting the adoption of “iAM Smart” by public and private organizations in their electronic services. OGCIO has launched a sandbox programme in collaboration with Cyberport, enabling public and private organizations to conduct Proof-of-Concept tests through the sandbox programme. OGCIO will progressively extend the sandbox programme to more sectors such as culture and sports in order to drive the development of more innovative online services by different industries with “iAM Smart”.

75. Members have expressed that only a few banks, insurance companies and financial institutions have adopted “iAM Smart” for service login, identity verification or online account opening. Members have enquired about the Administration’s incentives for financial institutions to develop more innovative online services with “iAM Smart”. The Administration has advised that the provision of online services by financial institutions via “iAM Smart” can save the cost of developing and building up a new platform and enhance service quality. The Government has been proactively promoting the use of “iAM Smart” by financial institutions in their electronic services.

*Opening up government data*

76. Members have noted that the Administration has already introduced a number of policy initiatives on open data since several years ago. Various B/Ds and public bodies, etc. have already opened up over 5 000 datasets via the Public Sector Information (“PSI”) Portal, and the Administration envisages that further 200 datasets can be opened up this year to support smart city development.

77. Members have expressed that although many departments have already opened up their datasets, not all of them can meet the actual needs of the public and the sector. Members have requested the Administration to identify the types of data the public and the sector actually need in a more scientific manner before requiring the departments concerned to provide the relevant data.

*Facilitating data exchange among government departments*

78. Members have pointed out that at present, data are being collected, stored and managed separately by various government departments without any centralized co-ordination or a uniform policy for determining what data should be collected, what the data standards should be, which data can be made available to the public and what kind of API should be provided for public or group use. Members have suggested that the Administration should set up a unified platform and establish a central databank to achieve genuine data interchange. The Administration has explained that to tie in with the

implementation of the Consented Data Exchange Gateway (“CDEG”)<sup>4</sup>, departmental IT systems will be updated to enable mutual exchange of data among various departments in a standardized manner with a view to realizing the goal of the “single portal for online government services”.

79. Members have enquired whether the Administration will consolidate, analyse and disseminate the data obtained through different channels, and provide more appropriate services to the public through the use of data. Members have also enquired how the Administration will tackle the lack of data connectivity among the service platforms of government departments. The Administration has advised that OGCIO is now implementing CDEG to enable members of the public to opt to authorize the exchange of their personal data among relevant systems of government departments. This will help address the lack of connectivity in respect of system data among departments.

80. Members have expressed concerns as to how the public’s privacy would be protected when CDEG is implemented. Some members have also enquired whether separate authorization is needed before relevant data can be shared among departments. Members have suggested that the Administration should draw reference from the laws of overseas countries, under which the provision of data by members of the public to a government would entail authorizing the use of such data by other departments without the need for any separate authorization.

81. The Administration has explained that personal data involving individual privacy concerns cannot be exchanged among departments. After the commencement of CDEG, members of the public may choose to grant one-off authorizations for the shared use of their personal data by the systems of government departments. The Office of the Privacy Commissioner for Personal Data will be consulted on the design of CDEG and details of its implementation arrangements, to ensure that relevant requirements on protecting personal data privacy will be met, authorizations by members of the public can be protected and data sharing among departments can be conducted in a proper and secure manner.

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<sup>4</sup> OGCIO is currently developing a “Consented Data Exchange Gateway” (“CDEG”) to allow citizens to opt for a one-off authorization through “iAM Smart” to retrieve their personal data collected by different B/Ds for performing automatic form-filling by means of “e-ME” functions when submitting applications for other government services, so as to obviate the need to input or submit the same information repeatedly. Through CDEG, citizens are also able to glance through their personal dealings with different government services via the “iAM Smart” mobile application in a convenient and effective manner.

*Enacting laws and regulations for the promotion of digital economy and e-Government services*

82. Members have suggested the Administration enact laws to promote digital economy and e-Government services, as well as review and amend the provisions under the existing laws that hinder the development of e-Government services. Members have taken the view that it is necessary for the Administration to enact forward-looking regulations; and to fully implement various smart city initiatives, the Government should first ensure data interchange among departments. Members have urged the Administration to review the laws restricting data interchange among departments and to alter departmental staff's mindset of being reluctant to share data with other departments.

83. Some other members have indicated that despite the Administration's progress in developing digital infrastructure, it is necessary to address the restrictions on collecting and using personal data imposed by laws and allay public concerns on the protection of privacy if Hong Kong is to develop management facilities like the Foshan "City Brain" system. The Administration should draw reference from the Data Security Law and Personal Information Protection Law enacted by the Mainland as well as Singapore's Digital Government Blueprint to achieve the goal of data sharing among departments.

84. In response, the Administration has advised that the Government has set up the Next Generation Government Cloud, enabling real-time data interchange via APIs among the systems and databases of various departments. Recently, OGCIO has briefed about the idea of and preparation for implementing smart government data development and interchange during the meetings with Heads of Department. The Administration has added that the Government is highly concerned about the issues relating to cyber and data security and emphasizes the need to strike a balance between protecting the privacy of members of the public and enhancing public service efficiency. The Administration is open-minded as to whether there is a need for enacting laws to regulate matters such as data collection and usage, etc., adding that it has not observed any situation where departments cannot implement e-Government services smoothly due to the restrictions imposed by laws at the current stage; but relevant legislation will be amended at an appropriate juncture to facilitate the development of e-Government services.

*Cross-boundary e-Government*

85. Members have enquired about the progress of and timetable for the introduction of the "Unified Identity Authentication Platform of Guangdong



Province”, and whether the general public will need to authorize the use of their respective personal data. The Administration has advised that OGCIO is exploring with the Government Services and Data Management Bureau of Guangdong Province in the use of “iAM Smart” as one of the means for real name identity authentication on the “Unified Identity Authentication Platform of Guangdong Province”, which will enable Hong Kong residents to use “iAM Smart” when registering on the Platform and using the government services of Guangdong Province. The two governments have been conducting technical testing on, among others, the interface between the digital infrastructure of Guangdong and Hong Kong, with a view to launching the relevant services as soon as possible.

*The e-Government Audit programme*

86. Members have enquired how the Administration will implement the e- Government Audit (“EGA”) programme. The Administration has advised that B/Ds will be categorized into different groups having regard to their respective policies and the scope of their businesses, and consultancy firms with relevant experience will be engaged to review the IT systems and services of the B/Ds in the same group. Recommendations on the enhanced IT solutions will be made to provide more convenient services to the general public and the business sector through leveraging advanced technologies. There are plans to implement 100 digital government initiatives by end-2025. The Administration will also connect departments with the local I&T industry through the Smart Government Innovation Lab, with a view to assisting departments in expediting the adoption and implementation of more I&T applications that enhance public services.

87. Members have expressed concerns that the establishment of a central databank and smart government may involve various legal issues, and the Administration, in conducting EGA, should engage consultants to examine the relevant areas specifically. The Administration has advised that the consultants, in conjunction with the conduct of EGA, will examine the legal issues concerned.

*Intellectual property rights over research and development deliverables*

88. Members are concerned that in taking forward smart government initiatives, the Administration has expended considerable resources to assist start-ups in achieving R&D deliverables. Members have commented that the intellectual property rights (“IPRs”) of relevant products should be owned by the Government; if the systems or products are sold in the market, the Government should also receive a share of the profits to subsidize the expenditure incurred during the R&D stage.

89. The Administration has explained that the assistance provided to start-ups is mostly advice on the application of such systems or products, and the Administration has introduced in 2010 the policy of opening up the IPRs of its IT systems to facilitate commercial exploitation, with a view to creating more business opportunities for the IT sector. Under the policy, the ownership of the IPRs created in new government IT systems will be vested in the contractor who has developed the system. The Government will obtain from the contractor a perpetual and royalty-free licence to use, modify and replicate the IT system. The contractors can exploit the IPRs to tap more business opportunities.

*Using technologies to enhance city management*

90. Members have asked if the Administration will model after the practice of Foshan to establish city command centres for collecting and using various data to enhance city management. The Administration has advised that it has set up a Big Data Analytics Platform and will install facilities, such as smart lampposts, in Hong Kong's NDAs to collect the required city data. It will also consider converting the existing lampposts in urban areas when necessary to collect the data needed as well as developing public management and related systems to enhance the capability of city management.

*Supercomputing centre*

91. Members have noted that the Administration is looking into the establishment of an AI supercomputing centre. Members have enquired whether there will be projected difficulties in respect of purchasing relevant hardware and software as well as recruiting manpower in the wake of the import/export restrictions imposed by overseas places. The Administration has responded that it is conducting a consultancy study on the establishment of an AI supercomputing centre, encompassing hardware and software requirements as well as issues relating to purchasing.

*Other smart government-related systems*

92. The Administration has briefed the Subcommittee on the automatic traffic enforcement system and smart traffic management system, smart water supply initiatives and the smart drainage monitoring system.

## Smart People

### *Promotion of STEAM education in primary and secondary schools*

93. Members welcome the Administration's promotion of STEAM (Science, Technology, Engineering, the Arts and Mathematics) education in primary and secondary schools. They have asked whether it has provided STEAM-related training programmes for teachers. The Administration has advised that schools have integrated STEAM education into the learning and teaching of the existing curriculum, and all publicly-funded primary and secondary schools have been required to designate co-ordinators to plan STEAM education holistically within and beyond the classroom; the Education Bureau ("EDB") has collaborated with Cyberport to launch a new Professional Development Programme on I&T for STEAM Co-ordinators of Schools from end-2022 to March 2023, and has earlier provided an Intensive Training Programme on STEAM Education to thousands of secondary and primary school teachers or headmasters/principals respectively, including collaborating with various I&T organizations, tertiary institutions and professional bodies, etc. to organize training programmes with I&T elements for STEAM co-ordinators and teachers. EDB will also provide professional support to schools by sharing the experience of promoting STEAM education.

94. Some members have suggested the Administration incorporate coding and AI into the regular courses of primary schools, as well as encourage primary students to acquire STEAM knowledge. The Administration should also formulate plans and performance indicators for nurturing future I&T talent.

95. The Administration have advised that EDB has introduced the "Enriched Module on Coding Education for Upper Primary Level" and "Module on AI for Junior Secondary Level" in the primary and secondary curricula. EDB will also continue to provide school-based support services to primary and secondary schools to assist them in planning their school-based curricula for STEAM education. The key performance indicators on STEAM education include: by the end of the 2024/2025 school year, at least 75% of publicly-funded schools should have implemented enriched coding education at the upper primary level and incorporated I&T learning elements, including AI, into relevant curricula at junior secondary level.

96. Members have emphasized the importance of promoting professional education and considered that EDB should support the complementary development of liberal arts education and professional education with a view to nurturing more I&T talent. The Administration has advised that it will

strengthen gifted education as well as identify and cultivate local gifted students. To nurture more students with potential, EDB has proposed to inject an additional \$600 million into the Gifted Education Fund to make use of the income from investment to enhance the support for the Hong Kong Academy for Gifted Education as well as the relevant extra-curricular advanced learning programmes, providing gifted students with more advanced learning opportunities.

*Encouraging senior secondary students to take mathematics, science and technology related subjects*

97. Members have expressed concerns that the current number of senior secondary students taking the subjects of Biology, Chemistry and Physics in secondary schools is relatively low, and universities have encountered difficulties in student recruitment for STEAM-related subjects. Members have suggested the Administration review and optimize the curricula of the Hong Kong Diploma of Secondary Education Examination subjects, as well as review and reform the university admission system in order to attract more secondary students to take STEAM-related subjects. The Administration has remarked that EDB has implemented the optimizing measures for the four senior secondary core subjects in the 2021/2022 school year. EDB will also strengthen the professional training for teachers and enhance the professional capacity of school leadership and co-ordination on STEAM education.

98. Members have enquired the Administration about the effectiveness of implementing both the “IT Innovation Lab in Secondary Schools” and “Knowing More about IT” programmes and whether it will consider regularizing the “IT Innovation Lab in Secondary Schools” programme as well as increasing the amount of funding under the “Knowing More about IT” programme. Members have suggested the Administration implement both the “IT Innovation Lab in Secondary Schools” and “Knowing More about IT” programmes in collaboration with GBA cities and overseas economies.

99. The Administration has advised that students in general have indicated that the programmes can raise their interest in IT and enhance relevant knowledge, and it keeps an open mind towards the suggestion of regularizing the “IT Innovation Lab in Secondary Schools” programme and increasing the amount of funding under the “Knowing More about IT” programme. The relevant funding programmes can support schools’ participation in local and international competitions. OGCIO has also subsidized local awardees to take part in the competitions held on the Mainland and overseas.

### *Introducing a science subject at the primary level*

100. To nurture students' interest and capabilities in science and technology learning from an early age and cultivate future talent of R&D and I&T for Hong Kong, members have commented that the Administration should integrate science-related topics in the primary General Studies curriculum into a science subject. The Administration has advised that EDB launched the Pilot Scheme on "Enhancing Science and Technology Learning at Upper Primary Level" in the 2022/2023 school year to enrich the learning contents of science and technology in the existing primary General Studies curriculum. Depending on the feedback to the scheme, EDB will explore the feasibility of introducing a science subject at the primary level in the long run.

### *The "STEM Internship Scheme"*

101. Members have noted that the Administration launched the "STEM Internship Scheme" in 2020 to subsidize local undergraduates and postgraduates taking university full-time STEM-related (Science, Technology, Engineering and Mathematics) programmes funded by the University Grants Committee to enroll in short-term internships. Members have enquired whether consideration will be given to allowing students taking non-STEM-related programmes to participate in the internship scheme.

102. The Administration has said that it will handle applications for the "STEM Internship Scheme" in a flexible manner. For applicants taking non-STEM programmes, as long as considerable STEM elements are included in the content, they may be eligible to participate in the Scheme. On the other hand, it intends to expand the "STEM Internship Scheme" to offer local I&T internship opportunities to university students studying STEM-related programmes at GBA campuses established by designated local universities. The Innovation and Technology Commission will co-ordinate the efforts of the five government-funded R&D centres and HKPC in offering local I&T-related internship opportunities to STEM students of local and non-local universities.

### *The Research Talent Hub scheme*

103. Members have enquired whether the Research Talent Hub ("RTH") scheme will cover technology companies conducting R&D activities outside the two technology parks, namely the Hong Kong Science & Technology Parks Corporation ("HKSTPC") and Cyberport, the R&D outcomes

achieved by such research talent and the social benefits brought to Hong Kong by these funded technology companies.

104. The Administration has replied that the former Researcher Programme and Postdoctoral Hub schemes have been consolidated into the RTH scheme to provide funding support for companies/organizations undertaking R&D projects funded by the Innovation and Technology Fund, incubatees and I&T tenant of HKSTPC and Cyberport as well as other technology companies conducting R&D activities outside the two technology parks, to engage up to four graduates in STEM-related disciplines from a local university or a well-recognized non-local institution to conduct R&D work.

105. The Administration has further pointed out that the RTH scheme aims at encouraging university graduates to pursue a career in I&T and nurturing more I&T talent. A vast majority of the funded research talent have indicated an interest in pursuing a career in scientific research in the future, and quite a number of them have found jobs in R&D-related areas.

#### *Enhancing accommodation support*

106. Members have noted that to attract I&T talent, the Administration will build more accommodation facilities for I&T talent. Members have enquired whether the Administration will consider providing accommodation and other supporting facilities outside the Science Park and the San Tin Technopole. Members have remarked that when designing and developing other I&T parks in the future, the Administration should consider planning for accommodation and relevant supporting facilities within the parks.

107. The Administration has explained that HKSTPC is now exploring the development of another InnoCell near the Science Park to provide residential units and other ancillary facilities; the Government will provide an InnoCell at the Hong Kong-Shenzhen I&T Park in the Lok Ma Chau Loop. In addition, the Government will allow greater planning flexibility to provide additional accommodation for I&T talent in support of the development of the San Tin Technopole.

#### *Promoting digital inclusion and science learning for all<sup>5</sup>*

108. Members have enquired about the Administration's concrete plans to promote the popularization of I&T application to drive Smart People development. The Administration has advised that OGCIO will continue its

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<sup>5</sup> See paragraphs 26 to 27 of this report for the deliberations on promoting digital inclusion and rehabilitation technology.

collaboration with district elderly centres in launching various activities to enhance elderly persons' ability of and interest in using digital technologies. Furthermore, the Government will collaborate with groups from different sectors and local organizations, hosting various promotional activities to foster the popularization of I&T.

109. Members have pointed out that amid Hong Kong's ageing demographic structure, many elderly people are still not conversant with the use of technology products for improving their daily lives. The Administration should empower people to use technology and help them appreciate the convenience and benefits that technology can offer. The Administration has advised that promoting digital inclusion involves the work of promoting popular science, which constitutes one of the eight major strategies proposed in I&T Blueprint promulgated by the Government earlier. Digital economy development is interwoven with enhancing literacy in science. The Government intends to allocate more resources to further promote popular science through co-operation with community groups.

#### Further smart city development in Hong Kong

110. Members have commented that the key to Hong Kong's smart city development lies in the integration of I&T into everyday life. In its next stage of work, the Administration should focus on using big data analytics, facilitating data interchange among government departments, implementing digital infrastructure projects and promoting co-operation among Hong Kong and Mainland cities, especially those within GBA to facilitate the development of smart city clusters within the area. Members have suggested the Administration draw reference from the Mainland's experience to draw up the smart city standards and relevant regulations for Hong Kong.

111. In response, the Administration has advised that it has already signed a co-operation agreement with the Government Services and Data Management Bureau of Guangdong Province for the joint smart city development between Guangdong and Hong Kong. Under the agreement's framework, the Governments of Guangdong and Hong Kong will introduce further measures conducive to the facilitation of smart city development, including the promotion of "iAM Smart" platform and electronic commerce activities through mutual recognition of electronic certificates, enabling members of the public to access various government services of Guangdong and Hong Kong as well as conduct electronic transactions and perform digital signing, etc. via "iAM Smart". The Administration has remarked that it will continue to promote digital economy development and big data application. Regarding these two aspects, the Administration has launched

various initiatives and promulgated the Blueprint, Blueprint 2.0 and I&T Blueprint.

*Smart City Blueprint for Hong Kong 3.0*

112. Pointing out that Blueprint 2.0 has been promulgated for over two years, members have enquired whether the Administration will formulate Blueprint 3.0 within this year to demonstrate the new directions and initiatives for Hong Kong's future smart city development. The Administration has explained that at present, the Government will prioritize the implementation of the various plans and initiatives under Blueprint 2.0 and I&T Blueprint, including the full implementation of e-Government services within 2024, realizing the "single portal for online government services" within three years (i.e. 2025), as well as launching CDEG by the end of 2024 to facilitate data sharing among departments. The Administration will also continue to review and assess the public demand for e-Government services and make improvements. With the implementation of smart city to a certain stage or the emergence of new ideas, as well as the need to formulate the development directions and initiatives for the next stage, appropriate arrangements will be made. Therefore, the Government has no plan to promulgate another Blueprint within this year.

113. Members have said that although the I&T Blueprint promulgated by the Administration earlier sets out the directions for Hong Kong's future I&T development, it is necessary for the Government to give a clear idea to the public of its specific targets, plans and timeframes for implementing Smart Government, Smart Mobility and Smart Living, etc. Members have also urged the Administration to set out work performance indicators to facilitate the public in following up on the progress of its work as well as monitoring the effectiveness.

*Recruiting, retaining and nurturing talent*

114. Members have asked whether Hong Kong has sufficient talent to support its smart city development. Some members have said that the Administration should explore how to use technologies to alleviate the labour shortage while ensuring adequate protection for labour employment and wages, etc. at the same time. The Administration has advised that it attaches great importance to recruiting, retaining and nurturing technology talent. Apart from continuously introducing corresponding measures to enrich the local I&T talent pool, it has also encouraged the sector to propose specific requirements and recommendations regarding the talent needed to achieve effective interplay between supply and demand sides to resolve the talent shortage.



115. Members have pointed out that the Administration should step up publicity of the progress and outcomes in Hong Kong's smart city development. Members have suggested the Administration set up a dedicated gallery to showcase Hong Kong's progress and achievements in I&T and smart city development.

116. Members have noted the Administration's ongoing quarterly roving exhibitions across the districts to publicize the progress of smart city initiatives, with a particular theme set for each exhibition. The Administration has advised that publicity of a larger scale on certain areas will be conducted in its next stage of work to enhance public awareness of smart city development.

### **Visits conducted by the Subcommittee**

117. Furthermore, the Subcommittee has conducted seven visits regarding the abovementioned policy issues, including:

- (a) visiting the Hong Kong International Airport on 8 August 2022 to better understand the latest smart airport initiatives launched by the Airport Authority Hong Kong;
- (b) visiting the Smart Government Pavilion at the International ICT Expo 2022 on 13 October 2022 to learn about the Government's work progress in promoting smart city development in Hong Kong;
- (c) visiting the smart environment facilities in Shatin and Science Park on 5 December 2022 to observe on site the implementation of initiatives;
- (d) visiting Fintech and regulatory technology entities at Cyberport on 9 January 2023 to learn about the role of the related sectors in facilitating the development of smart economy in Hong Kong;
- (e) visiting the Smart Government Innovation Lab at Cyberport on 20 January 2023 to learn about the latest initiatives in facilitating the development of a smart government in Hong Kong;

- (f) visiting the HKSKH Bishop Hall Secondary School on 24 February 2023 to learn about the Government's achievement of the goal of Smart People through educational efforts; and
- (g) visiting the Geospatial Lab on 9 May 2023 to learn about its latest progress on promoting the development of spatial data.

## **Recommendations**

118. During deliberations, the Subcommittee has recommended the Administration to consider:

### Smart Mobility

- (a) formulating the future vision and targets for the smart mobility development in Hong Kong (please refer to paragraphs 7 to 8 above);
- (b) conducting timely review on and making refinement to the policies in relation to promoting the popularization of EVs, including increasing the supporting facilities for EVs and strengthening promotion (please refer to paragraph 13 above);
- (c) continuing to enhance the functionalities of "HKeMobility" mobile application and related data analytics (please refer to paragraph 15 above);

### Smart Living

- (d) providing high-definition digital roadmaps to promote the development and application of AVs (please refer to paragraph 25 above);
- (e) promoting digital inclusion and rehabilitation technology in a more proactive manner, as well as extending the Information and Communications Technology Outreach Programme for the Elderly to the elderly persons residing in Mainland cities in GBA (please refer to paragraph 26 above);
- (f) extending telehealth services to villages or residential care homes for the elderly in remote areas complete with relevant services, such as medicine delivery (please refer to paragraph 29 above);

- (g) continuing to enhance and promote wider adoption of “iAM Smart” (please refer to paragraph 73 above);

#### Smart Environment

- (h) installing multi-functional smart lampposts at all NDAs and expediting the implementation of some pilot schemes which are more technically well-established (please refer to paragraph 35 above);
- (i) establishing more food waste treatment facilities to enhance Hong Kong’s capability in treating food waste (please refer to paragraph 41 above);
- (j) encouraging more universities and private research institutes to apply for the Green Tech Fund, as well as providing applicant institutes with appropriate guidelines and assistance (please refer to paragraph 47 above);

#### Smart Economy

- (k) stepping up efforts in promoting business digital transformation, and in particular, expediting the implementation of Fintech and re- industrialization to further enhance the local I&T ecosystem (please refer to paragraph 48 above);
- (l) proactively promoting the development of green finance and carbon markets and offering assistance to SMEs in achieving the goal of carbon neutrality before 2050 (please refer to paragraphs 61 to 62 above);
- (m) strengthening efforts for promoting the development of Fintech ecosystem (please refer to paragraphs 48 and 57 above);
- (n) supporting various trades and industries such as the service industry to adopt I&T (please refer to paragraph 48 above);
- (o) accelerating the promotion of digitalization of courts (please refer to paragraph 65 above);

#### Smart Government

- (p) using “Single Portal for Online Government Services” to complete required services (please refer to paragraph 72 above);

- (q) facilitating cross-boundary e-Government services with GBA (please refer to paragraph 85 above);
- (r) establishing a “Big Data Bureau” dedicated to data management and usage (please refer to paragraph 70 above);
- (s) promoting data exchange among government departments (please refer to paragraphs 78 to 81 above);
- (t) establishing suitable security standards and protection regulations for data in Hong Kong (please refer to paragraph 78 above);
- (u) setting up a dedicated gallery to showcase Hong Kong’s progress and achievements in I&T and smart city development (please refer to paragraph 115 above);

#### Smart People

- (v) including coding and AI as standard subjects in primary and secondary schools (please refer to paragraph 94 above);
- (w) strengthening popular science education and promoting the popularization of I&T application to enhance the ability of members of the public in using technologies (please refer to paragraphs 108 to 109 above);
- (x) reviewing and optimizing the curricula of the Hong Kong Diploma of Secondary Education Examination, as well as reviewing and reforming the university admission system in order to attract more secondary students to take STEAM-related subjects (please refer to paragraph 97 above); and
- (y) when designing and developing other I&T parks in the future, drawing up the planning for accommodation and relevant supporting facilities within the parks with a view to attracting I&T talent (please refer to paragraph 106 above).

#### **Advice sought**

119. The House Committee is invited to note the Subcommittee’s deliberations and recommendations.

Council Business Division 1 and Public Complaints Office  
Legislative Council Secretariat  
7 June 2023

**Subcommittee on Matters Relating to the Development of  
Smart City**

**Terms of reference**

To review the implementation of the Smart City Blueprint for Hong Kong and Smart City Blueprint for Hong Kong 2.0, and make recommendations on issues relating to the promotion of Hong Kong's development into a smart city.

**Subcommittee on Matters Relating to the Development of  
Smart City**

**Membership list\***

<b>Chairman</b>	Hon Elizabeth QUAT, BBS, JP
<b>Deputy Chairman</b>	Dr Hon Johnny NG Kit-chong, MH
<b>Members</b>	Hon Paul TSE Wai-chun, JP Hon Frankie YICK Chi-ming, SBS, JP Hon CHAN Han-pan, BBS, JP Hon KWOK Wai-keung, JP Hon Jimmy NG Wing-ka, BBS, JP Hon LAU Kwok-fan, MH, JP Hon Kenneth LAU Ip-keung, BBS, MH, JP Hon Dominic LEE Tsz-king Hon LAM San-keung, JP Hon Andrew LAM Siu-lo, SBS, JP Hon YIU Pak-leung, MH Dr Hon Wendy HONG Wen Hon Dennis LEUNG Tsz-wing, MH Ir Hon CHAN Siu-hung, JP Dr Hon Kennedy WONG Ying-ho, BBS, JP Hon LAI Tung-kwok, GBS, IDSM, JP Hon Carmen KAN Wai-mun
	(Total: 19 members)
<b>Clerk</b>	Mr Daniel SIN
<b>Legal Adviser</b>	Mr Jonathan CHENG

\*Change in membership is shown in Enclosure to Appendix 2

## Enclosure to Appendix 2

### Subcommittee on Matters Relating to the Development of Smart City

#### Change in membership

<b>Member</b>	<b>Relevant date</b>
Hon Tony TSE Wai-chuen, BBS, JP	Up to 5 February 2023



**Subcommittee on Matters Relating to the Development of  
Smart City**

**List of organizations/individuals having presented their views and/or made  
submissions to the Subcommittee**

List of organizations/individuals having made oral representation to the  
Subcommittee

1. Smart City Consortium
2. Hong Kong Software Industry Association
3. Mr Jacky LAM Hon-wai
4. Young Liberal Party
5. Smart City Academy
6. WWF-Hong Kong
7. Hong Kong Blind Union
8. Hong Kong Public Key Infrastructure Forum

List of organizations having made submissions to the Subcommittee

1. The Association of Industries and Commerce of Hong Kong Southern District Limited
2. CarbonCare InnoLab