For discussion on 8 April 2024

LEGISLATIVE COUNCIL PANEL ON INFORMATION TECHNOLOGY AND BROADCASTING

Enhancing digital infrastructure and support to the development of the artificial intelligence ecosystem

PURPOSE

This paper updates Members on Government's work progress in respect of enhancing digital infrastructure and the support to the development of the artificial intelligence ("AI") ecosystem, and briefs Members on the AI funding scheme and its proposed implementation arrangements.

DIGITAL INFRASTRUCTURE

- 2. Innovation and technology ("I&T") is the major driver to spur economic development and new quality productive forces. The Government promulgated the Hong Kong I&T Development Blueprint ("the I&T Blueprint") in end-2022, setting out four development directions and eight major strategies including acceleration of the development of new digital infrastructure, thereby promoting Hong Kong's development as digital economy and smart city. In a bid to strike a balance between promotion of data usage and proper data management, we also published the Policy Statement on Facilitating Data Flow and Safeguarding Data Security in Hong Kong ("the Policy Statement") in end-2023, which proposes 18 specific action items under five categories to promote data flow and safeguard data security through, inter alia, bolstering digital infrastructure.
- 3. The latest development for major digital infrastructure is at <u>Annex</u>, with highlights as set out below –

Hardware facilities

- AI Supercomputing Centre: The 2023 Policy Address announced that Cyberport would set up an Artificial Intelligence Supercomputing Centre ("AISC") in phases from 2024. Cyberport is preparing for the AISC's establishment to meet the strong local demand for computing power, with an aim to enhance research and development ("R&D") capabilities in different fields and promote industry development. The first-phase facility is expected to come into operation within this year at the earliest.
- ➤ <u>5G Network</u>: The network coverage of the fifth generation ("5G") mobile services in Hong Kong has now reached over 90% of the Hong Kong population. The Government will continue to implement various facilitation measures to expand the 5G networks, enhance the mobile communications infrastructure and facilitate Hong Kong's development into a smart city.
- Data centre: Data centres and related data industries form part of the essential digital technology infrastructure that support the sustained growth of Hong Kong's digital economy. According to the "2023 Global DataCenter Market Comparison", Hong Kong's data centre market is ranked fourth in the world and second in Asia Pacific.

Digital identity

- ➤ "iAM Smart": As at March 2024, there are over 2.6 million registered users on the "iAM Smart" platform, which supports more than 340 online services provided by the Government and public and private organisations. We are now working on the comprehensive upgrade of the "iAM Smart" platform, enhancement of user experience and development of more services which are convenient and beneficial to the public and businesses, including enhanced service categorisation and step-up identity authentication service, etc. that will be rolled out progressively from this year onwards. Our target is to provide one-stop digital services by fully adopting "iAM Smart" by 2025, thereby realising the objective of "single portal for online government services".
- CorpID": The 2024-25 Budget proposes to set up a Digital Corporate Identity platform, akin to the corporate version of "iAM Smart". We will put forward the proposal to this Panel in the second quarter this year.

Facilitating data exchange

Consented Data Exchange Gateway (CDEG): We launched the function of linking the CDEG with Commercial Data Interchange of the Hong Kong Monetary Authority in end-2023 to facilitate data sharing among government departments and financial institutions upon authorisation of their enterprise clients. We aim to extend the functions to bureaux/departments ("B/Ds") by end-2024 to promote data sharing within the government for the convenience and benefit of the public and the business sector.

AI DEVELOPMENT

- 4. AI is a crucial component for the development of digital economy and smart city. Its accelerated development is reshaping the technological edge, industry structure and economic pivot of various economies. The development of AI also has an increasing impact on the planning and positioning of digital infrastructure. Several researches suggest that AI could bring significant economic benefits and will be the foci of economic and technological competition among states. For example, a study¹ shows that generative AI could raise global gross domestic product ("GDP") by 7% and productivity by 1.5 % within 10 years. Another study ² suggests that AI could generate about USD 13 trillions of additional output to the global economy by 2030, hence raising global GDP by about 1.2% per annum. According to an estimate by the China Academy of Information and Communications Technology³, every dollar invested in computing power will lead to a GDP growth of three to four dollars.
- 5. AI brings about gigantic new opportunities for the global economic development and scientific research. It has become a mega trend that we must embrace. Under the principle of "One Country, Two Systems", Hong Kong is endowed with its unique advantages and qualities of "having the strong support of the country and being closely connected to the world", and has edges in AI such as solid research foundation and vibrant R&D atmosphere. The Government has been developing and investing in the AI ecosystem under a holistic approach, with relevant resources and measures set out below —

¹ According to a study published in April 2023 by Goldman Sachs.

² According to a study published in September 2018 by McKinsey and company.

³ According to the White Paper on China Arithmetic Power Development Index published by the China Academy of Information and Communications Technology in 2022.

Policies, guidelines and regulations

- The Ethical Artificial Intelligence Framework formulated by the Government, the Guidance on the Ethical Development and Use of Artificial Intelligence published by the Office of the Privacy Commissioner for Personal Data, and the Policy Statement published by the Government last year all provide guidelines for the industry and government departments in developing AI technologies and managing related projects.
- We closely monitor the development of society and the policies, regulations and initiatives formulated by other economies regarding AI development, with an objective of enhancing the overall strategy for promoting AI development in Hong Kong in a timely manner. For example, we have commissioned the InnoHK R&D centre specialised in generative AI to examine and suggest appropriate rules and guidelines on the accuracy, responsibility and information security aspects of the generative AI technology and its applications.
- In addition, in view of the copyright issues arising from the rapid development of AI technology, the Government will conduct a consultation this year to explore further enhancement of the relevant protections provided by the Copyright Ordinance.

Technology and R&D

- We are committed to resource matching, strengthening research capabilities, acceleration of result transformation, and advancing industrial development, etc. Efforts include the 15 AIR@InnoHK R&D centres under InnoHK focusing on AI and robotic technologies. The communities at Cyberport and Science Park now comprise more than 600 AI and big data companies, including top-notch AI companies nurtured locally and a number of leading companies from the Mainland and other regions, which set up R&D centres or expand their businesses in Hong Kong.
- In addition, the 2024-25 Budget proposes to allocate \$3 billion for the implementation of the Frontier Technology Research Support Scheme to support the eight funded universities, on a matching basis, in procuring relevant facilities and carrying out research projects covering areas such as AI, quantum information, integrated circuits, etc.

Talent

To enlarge the talent pool, we will continue to nurture and attract I&T talents to R&D and related works in Hong Kong, covering fields such as AI, through a series of measures including the Research Talent Hub and the Technology Talent Admission Scheme. InnoHK also brings together over 2 500 leading researchers around the world, including 1 300 researchers in AI and Robotics.

<u>Infrastructure</u>

- ➤ Cyberport's preparation for AISC is at full steam and in good progress. The first-phase AISC facility is expected to commence operation in the second half of 2024 at the earliest. Upon completion of the Cyberport 5 expansion project, the AISC will be able to provide a computing power of 3 000 petaFLOPS⁴ in early 2026 at the earliest.
- As its major digital infrastructure, Cyberport will operate AISC under a market model. Cyberport is planning for the relevant operational arrangements.

AI SUBSIDY SCHEME

- 6. The AISC will further strengthen Hong Kong's digital infrastructure and computing resources. With AISC's establishment, we need to promote the local AI computing power, algorithms and applications in terms of breadth and depth on all fronts, so as to maximise the potentials of the supercomputing facilities and inject the largest impetus to the local scientific research and AI sectors.
- 7. As estimated by the consultant of the Office of the Government Chief Information Officer ("OGCIO"), the AISC is expected to bring about a growth in Hong Kong's GDP in the range of \$6 billion and \$16 billion in the next three to five years, alongside some 700 to 1 300 professional jobs, and at the same time attract overseas and Mainland talents and enterprises to Hong Kong, hence helping to lift Hong Kong's research level and digital economy development. The international and regional cooperation that the AISC fosters will also facilitate Hong Kong's development into an international innovation and technology hub.

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⁴ Computing power is measured in terms of one thousand trillion floating-point operations (i.e.10¹⁵) per second (PFLOPS).

8. To support the AI ecosystem development in Hong Kong, the 2024-25 Budget announced the allocation of \$3 billion to implement a multi-pronged three-year AI Subsidy Scheme ("Subsidy Scheme"), which include (i) subsidising eligible users to make the best use of the computing power by Cyberport's AISC, (ii) enhancing AISC's cyber and data security, and (iii) attracting AI experts, enterprises and R&D projects from the Mainland and overseas to Hong Kong, so as to promote the development of AI technology and industry. Details are set out below –

(i) Subsidising eligible users to leverage computing power

- 9. The consultancy study commissioned by OGCIO suggests that there is pressing demand for supercomputing power in Hong Kong, with over 90% of the demand coming mainly from local universities, R&D institutes, etc. With the establishment of the AISC, the consultant recommends that funding support be provided to the industry so that R&D projects and relevant teams having the potential to make significant contributions to scientific research and AI innovation in Hong Kong can leverage the computing power resources of the ASIC (hereafter "computing power subsidies").
- 10. In line with the consultant's recommendation, out of the \$3 billion funding for the Subsidy Scheme, we will earmark \$2,856 million to subsidise eligible users to make use of up to 90% of the AISC's computing resources (based on the expected scale of the computing power facilities to be provided by the AISC). The proposed arrangements for the relevant computing power subsidies are as follows –

Eligibility

- 11. Taking into account the overseas and local experience as well as recommendations of the consultant, we will provide financial support to eligible users such as local universities, R&D centres, government departments, AI-related enterprises through the computing power subsidy, so that they can optimise the computing power of the AISC and achieve more breakthroughs in scientific research. Eligible users for the computing power subsidies include:
 - (a) <u>Local institutions</u>: including the eight universities funded by the University Grants Committee and the self-financing local degree-awarding institutions registered under the Post Secondary Colleges Ordinance (Cap. 320), etc.;

- (b) <u>R&D Centres</u>: including the government-funded R&D centres⁵, R&D Centres under the InnoHK Clusters, Hong Kong Productivity Council, and Hong Kong Institute of Biotechnology, etc.;
- (c) <u>Government departments</u>: departments can leverage the power of the AISC's computing services to build big data models to further enhance public services in areas such as planning, land administration, buildings, construction works, population, transportation, meteorology, and environment;
- (d) <u>AI start-ups</u>: including incubatees and alumnus of Cyberport and Hong Kong Science and Technology Parks Corporation, start-ups under the Technology Start-ups Support Scheme for Universities, and the Research, Academic and Industry Sectors One-plus Scheme, etc.; and
- (e) <u>Strategic enterprises</u>: applicants are required to submit information to demonstrate that their project can contribute to R&D and AI innovation in Hong Kong, and undertake to land in Hong Kong and employ a specified number of professionals, etc., so as to drive the development of the local AI ecosystem.
- 12. Cyberport will be asked to set up an independent committee, the members of which will be appointed by the Government, to determine the details on the beneficiaries and terms for disbursement of the subsidies, etc. The independent committee will comprise representatives from the AI industry, academia, I&T sector and the Government, and will vet and approve applications for the computing power subsidies as well as make recommendations on the overall operation of the Subsidy Scheme.

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⁵ The Government currently maintains five government-funded R&D centre including the Hong Kong Automotive Platforms and Application Systems R&D Centre, Hong Kong Research Institute of Textiles and Apparel, Hong Kong Applied Science and Technology Research Institute, Logistics and Supply Chain MultiTech R&D Centre, and Nano and Advanced Materials Institute.

Pricing and subsidy amount

- 13. We propose, under normal circumstances, to subsidise eligible users **up** to 70% of the service rates as the computing power subsidy. Cyberport will conduct a preliminary assessment of the subsidy applications and make recommendations to the independent committee regarding the level of subsidy and the conditions of use, etc. The independent committee will approve the specific amount and duration of the subsidy to be granted to ensure effective allocation and utilisation of the computing power resources, taking into account various factors including
 - (a) whether the project can meet the needs of I&T⁷ and AI development in Hong Kong;
 - (b) whether the computing power requirement of the project is reasonable with detailed justifications;
 - (c) the feasibility and expected outcome of the project, taking into account relevant factors such as track records and innovation potential of the applicant and its team; and
 - (d) the technical and financial capability of the applicant and its team, etc.

Depending on the uniqueness of individual cases and their significant impact on local AI innovation and application, etc., the independent committee may consider, in special and exceptional cases, subsidies up to 90% of the service rates.

14. Cyberport will conduct regular evaluation on market prices. Taking into account the various edges of local computing power services over that of the neighbouring regions, for example obviating the need for cross-boundary data flow, data security and privacy protection, safeguards for intellectual property, and speed of network data transmission, etc., as well as Cyberport's ancillary facilities and complementary services on talents, technology and capital, Cyberport will set the pricing range and introduce differential charging schemes for different types of services and level of computing power. Cyberport will propose the actual price and recommended subsidy level flexibly on a case-by-case basis and having regard to the market situation, subject to consideration by the independent committee.

⁶ Relevant expenditure items under an approved computing power subsidy application (i.e. the subsidised portion generally not exceeding 70%) shall not receive funding support from other Government sources. Generally, we expect that not-for-profit organisations such as local universities and R&D institutes to receive a higher subsidy.

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⁷ Such as whether the project can promote the development of strategic industries set out under the I&T Blueprint or the frontier technology fields under the Nation's 14-5 Plan.

15. Cyberport tentatively proposes an open invitation for applications for computing power subsidies throughout the year, with deadline on each batch. The independent committee will meet regularly to process the applications received.

Funding arrangements

- 16. At the beginning of each financial year, OGCIO will disburse to Cyberport the estimated funding for computing power subsidies, such that Cyberport could formulate a reasonable and competitive charging model and service rates to attract R&D teams and the industry to leverage the AISC's computing power resources.
- 17. If the demand from eligible users is lower than expected and in order to avoid idling the precious computing power resources, Cyberport may propose to the independent committee to re-deploy part of the computing power to other projects to be charged at market (non-subsidised) rates. On the other hand, if there is over-supply of the computing power, OGCIO will require Cyberport to utilise the unused computing power subsidies for enhancing the AISC's publicity, talent cultivation and promotion of AI ecosystem development, with a view to generating more patronage of the AISC's services.

Monitoring arrangements

18. To effectively monitor and evaluate the effectiveness of the computing power subsidies, the Government will establish a set of performance indicators with Cyberport. Possible indicators include the number of R&D projects on AI models; the number of Mainland and overseas enterprises or R&D teams attracted; and the number of talents and professionals involved in the project. The Government will further discuss and finalise the relevant indicators with Cyberport.

(ii) Enhancing cyber and data security

19. As R&D projects using the AISC services may involve cutting-edge technologies, ground-breaking researches and sensitive user data, it is particularly important to safeguard the AISC's cyber and data security. We therefore propose to set aside \$100 million out of the \$3 billion funding to strengthen the cyber and data security provision of the AISC. Relevant works are set out below

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- (a) <u>data protection and security monitoring</u>: for implementation of data protection measures, including the costs of continuous monitoring and early detection of security vulnerabilities and misconfigurations in the network. The budget also takes into account the need for business continuity, including the costs of the required backup facilities for regular backup of critical data and information, and disaster recovery services;
- (b) <u>audit and risk assessment</u>: this mainly covers the conduct of regular and rigorous independent security audits and risk assessments, as well as inspection and monitoring of the security operation of the AISC; and
- (c) <u>training and education</u>: Cyberport will provide training and education on cyber and data security for users of the AISC's services to reinforce its cybersecurity protection.

(iii) Promoting the development of AI ecosystem

- 20. A comprehensive ecosystem cannot rely solely on the support of hardware facilities. We propose to earmark \$44 million out of the \$3 billion provision to enhance the interface and collaboration between the upstream, midstream and downstream components of the AISC and AI ecosystem development, including the following key aspects
 - (a) nurturing talents (including talents in the areas of AI, data science, computer science and programming) and facilitating research or application contexts related to AI and computing power;
 - (b) inviting local and overseas AI enterprises to land in Hong Kong and Cyberport, and facilitating result transformation and market interface, such as promoting partnership between enterprises, local R&D teams and start-ups vide cross-sectoral projects at AISC, and creating collaboration and business opportunities to the local ecosystem; and
 - (c) conducting promotional and educational activities in Hong Kong, the Mainland and overseas to step up industry exchanges, promote the AISC as a catalyst for AI development n Hong Kong, and publicise the opportunities for local AI development, etc.

Execution and monitoring arrangements

- 21. A funding agreement will be signed between OGCIO and Cyberport for the Subsidy Scheme, setting out details of the financial arrangements and use of funds. Cyberport will be required to submit reports to OGCIO on an annual basis covering the performance, security audit and financial position of the Subsidy Scheme. In addition, the Government will require Cyberport to set performance indicators, covering the utilisation of the AISC's services, R&D achievement, talent promotion, operation, and promotion of cybersecurity and environmental protection, etc., for monitoring and evaluating the effectiveness of the Subsidy Scheme. Successful applicants of the computing power subsidy will also be required to sign an agreement with Cyberport, including the submission of regular progress reports for review by Cyberport and the independent committee.
- 22. We plan to review the overall operation and effectiveness of the Subsidy Scheme in 2026 when the AISC commences full operation.

FINANCIAL IMPLICATIONS

23. Taking into account the resource requirements for the above measures, we need to create a new commitment of \$3 billion under OGCIO. The estimated cash flow requirement is set out below –

Item	(\$ million)			
	2024-25	2025-26	2026-27	Total
Computing power subsidy	857	857	1,142	2,856
Enhancing cyber and data security	42	32	26	100
Promoting the development of	6	16	22	44
AI ecosystem				
Total	905	905	1,190	3,000

TIMELINE

24. Upon the passage of the Appropriation Bill 2024, OGCIO and Cyberport will enter into a funding agreement and set up an independent committee to ensure that the Subsidy Scheme can tie in with the implementation timeline for the AISC which will come into operation in the second half of 2024. Cyberport will also announce the details of the Subsidy Scheme and carry out publicity and promotion, so as to press ahead the development of the AI ecosystem.

ADVICE SOUGHT

25. Members are invited to advise on the Government's efforts in strengthening the digital infrastructure and supporting the development of the AI ecosystem, and to endorse the Government's allocation of \$3 billion for the implementation of the AI Subsidy Scheme.

Innovation, Technology and Industry Bureau Office of the Government Chief Information Officer March 2024

Latest progress of major digital infrastructure

HARDWARE FACILITIES

AI Supercomputing Centre (AISC)

In the light of the findings of the consultancy study conducted by the the Office of the Government Chief Information Officer ("OGCIO")'s consultant (hereafter the consultant) in 2023, Cyberport had been invited to actively consider the consultant's recommendations on the establishment and operation of a supercomputing centre. Cyberport had accepted the recommendations and will establish the AISC in phases from 2024 onwards. The first-phase facility is expected to commence operation in the second half of 2024 at the earliest. Upon completion of the Cyberport 5 expansion works, the AISC will be able to provide a computing power of 3 000 petaFLOPS in early According to the consultant's estimation, Cyberport's 2026 at the earliest. AISC is one of the large-scale supercomputing facilities in the region when compared with other regional supercomputing centres, and will be able to meet Hong Kong's short-to-medium term demand for computing power.

5G Network

- 2. The Commerce and Economic Development Bureau will continue to enhance the 5G network coverage and capacity, including implementing the following initiatives
 - (a) to implement the Telecommunications (Amendment) Ordinance 2024 and relevant guidelines to ensure that appropriate space is made available in new or redeveloped specified buildings for the installation of mobile communications facilities by mobile network operators ("MNOs");
 - (b) to implement the Inland Revenue (Amendment) (Tax Deductions for Spectrum Utilization Fees) Ordinance 2024 to provide for tax deductions for spectrum utilization fees payable by MNOs on radio spectrum acquired in the future;

- (c) to take forward the "Subsidy Scheme to Extend Fibre-based Networks to Villages in Remote Areas", under which the subsidised fibre-based networks will be extended to a total of 235 villages in phases by 2026;
- (d) through a pilot scheme to open up about 1 500 Government premises managed by different government departments with a streamlined application procedure and at a nominal rent (\$1 per year) to facilitate the installation of Radio Base Stations ("RBSs"); and to establish a mechanism to facilitate the installation of RBSs at sheltered bus stops and public payphone kiosks; and
- (e) to implement the announced measures of 2023 Policy Address to further enhance the capacity and transmission speed of Hong Kong's overall 5G networks, including expediting the expansion of mobile network infrastructure in rural and remote areas through subsidies, coordinating proactively with relevant organisations to enhance 5G network capacity at the major public event venues, and continuing to ensure that suitable spectrum is released in a timely manner for 5G development.

Data centres

- Data centre is an essential information and communications technology infrastructure that supports the continuous growth of Hong Kong's digital economy. According to market reports, the global data centre market will reach US\$2.1 billion in 2023 and is expected to reach US\$3.2 billion by 2028. The demand for data centre facilities in Hong Kong is huge. According to the "2023 Global Data Centre Comparison", Hong Kong's data centre market is ranked fourth in the world and second in Asia Pacific. Under the "One Country, Two Systems", Hong Kong has the unique advantages and conditions in pooling data from the Mainland and overseas.
- 4. OGCIO has been committed to promoting data centre development in Hong Kong by implementing various facilitation measures, including the provision of land, encouraging conversion of industrial buildings and use of industry lots, as well as providing one-stop support services. Hong Kong is estimated to have about 970,000 m² of data centre floor space in 2023, and the supply is expected to reach about 1.5 million m² by the end of 2026, which is sufficient to meet the short-term demand. For the medium to long term, the Government will consider increasing the supply of new land to support data centre development on a sustainable basis. Potential sources of land supply include the San Tin Technopole and Sandy Ridge, etc.

Multi-functional Smart Lampposts

- 5. The Multi-functional Smart Lampposts Pilot Scheme was completed in December 2023, with more than 400 multi-functional lampposts with smart devices in operation in Central and Admiralty, Wan Chai district, Yau Tsim Mong district and Kwun Tong / Kai Tak Development Area. The smart devices and applications of the lampposts collect real-time city data for relevant departments to enhance city management, provide open data and support the installation of 5G wireless network equipment by mobile network operators as necessary.
- 6. To further drive the smart city development in Hong Kong, smart lampposts will serve as a standard basic infrastructure in new development areas under planning or construction, facilitating bureaux/departments ("B/Ds") to install suitable smart devices and applications to enhance city management and develop innovative services.

DIGITAL IDENTITY

<u>"iAM Smart"</u>

- 7. "iAM Smart" mobile app provides the one-stop personalised digital services platform, which enables users to log in and use online services by their personal mobile phone in a smart and convenient way. As at March 2024, there are more than 2.6 million registered users of the "iAM Smart" mobile app, which supports about 340 online services provided by the Government and public and private organisations
- 8. OGCIO is upgrading the "iAM Smart" mobile app, optimising user experience and developing more user-friendly services for the public. In October last year, the design of the homepage of the "iAM Smart" mobile app was revamped so that members of the public can access a range of useful information relevant to their daily lives by opening the "iAM Smart" mobile app, such as real-time local weather, traffic conditions, Accident and Emergency Department waiting time, locations of automated external defibrillators, real-time tolls of cross-harbour tunnels, and Scameter.
- 9. Other upgrades including enhanced user experience, more citizencentric service categorisation and step-up identity authentication service, etc. will be rolled out progressively from 2024 to 2025. Our target is to provide one-stop digital services by fully adopting "iAM Smart" by 2025 so as to realise "single portal for online government services".

"Digital Corporate Identity" platform

10. The 2024-25 Budget announced that \$300 million would be earmarked to set up a new Digital Corporate Identity platform, similar to the business version of iAM Smart, to enable authentication of identity and verification of signature of corporations using e-government services or conducting online business transactions in a secure, convenient and efficient manner without having to go through complicated procedures, thus saving time and reducing the risk of human error. Our goal is to roll out the Digital Corporate Identity platform for use by the industry progressively from end-2026. We are formulating the relevant details and will consult the Panel on the proposal in May this year.

E-GOVERNMENT SERVICES

<u>Digitalisation of government services</u>

11. The Government is committed to driving and expediting the digitalisation of government services. In this regard, the Chief Executive's 2022 Policy Address announced that all licences and government services involving application and approval will be digitalised by mid-2024, with exceptions due to law or international practice. As at end-2023, of some 1 450 licences and services, around 90% involving applications and around 80% involving collection of documents had met the digitalisation target. The remaining licences and services are expected to meet the target on or before mid-2024.

Government Cloud Infrastructure Services

12. We launched the new generation Government Cloud Infrastructure Service in September 2020 to provide a secure, stable and scalable infrastructure equipped with agile application development tools to enable B/Ds to develop and implement e-government services more quickly. As of December 2023, the new platform had supported over 450 e-government services and application systems.

Big Data Analytics Platform

13. The Big Data Analytics Platform was launched in September 2020 to support B/Ds to implement more AI and big data analytics projects through economies of scale and shared resources. So far, the platform had supported the implementation of more than 18 big data projects.

Shared Blockchain Platform

- 14. We launched the Shared Blockchain Platform in June 2022 in order to facilitate B/Ds to expedite the adoption of blockchain technology in developing blockchain application systems. Among others, the "Dealers in Precious Metals and Stones Registration System" developed by the Customs and Excise Department was rolled out in April 2023, being the first application system to connect to the Shared Blockchain Platform.
- 15. Besides, to support B/Ds in further issuing documents such as licences, permits and certificates, etc. by electronic means, we developed "e-Proof" as the common service and reference module on the Shared Blockchain Platform, with a view to making use of blockchain technology to verify the authenticity of these electronic documents. It is expected that the first batch of these electronic documents will be launched in 2024.

Electronic payment

- 16. Currently, the Government accepts citizens' payment made through a number of different electronic payment ("e-payment") tools. To further facilitate citizens in making payment for government services, the 2023 Policy Address announced the full implementation of e-payment option for all government fees by the third quarter of 2024 to provide the public with a choice to settle service payments both online and offline (including at service counters and self-service kiosks) through the Faster Payment System.
- 17. As at end-2023, of some 600 fee items, over 60% have achieved the relevant target. Furthermore, the Government will also provide an option for making payment by Mainland electronic wallets for government services commonly used by Mainland visitors (e.g. booking of various leisure facilities, application of immigration-related services and public medical consultation services, etc.) for their convenience, involving around 80 services.

FACILITATING DATA EXCHANGE

Consented Data Exchange Gateway (CDEG)

- 18. The Government is speeding up the implementation of the CDEG to enable citizens to authorise government departments to use their personal data collected by other departments, thereby minimising the citizens' need to submit information repeatedly and improving efficiency of government services. We have launched CDEG functions to link with Commercial Data Interchange of Hong Kong Monetary Authority in end-2023 to facilitate data sharing among government departments and financial institutions upon authorisation of their enterprise clients to promote more convenient services for doing business.
- 19. We will launch the CDEG functions to B/Ds in 2024 to promote data sharing within the Government. The Efficiency Office and OGCIO are proactively exploring with individual B/Ds on applications related to data sharing.
