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Panel on Information Technology and Broadcasting

Meeting on 13 May 2024

**Background brief on the Administration's initiatives
for promoting 5G development**

Purpose

This paper provides background information on the Administration's various measures for promoting the fifth generation mobile communications ("5G") development. It also gives a brief account of the views and concerns expressed by Members when relevant issues were discussed by the relevant committees of the Legislative Council ("LegCo") in recent years.

Background

Overview of the development of the fifth generation mobile services in Hong Kong

2. Since the launch of commercial 5G services in Hong Kong in 2020, 5G coverage has already reached more than 90% of the population. As of September 2023, there were six million 5G users, representing nearly 80% of the population. Despite having one of the highest 5G penetration in the world, there is still room to improve 5G coverage and capacity in some areas, such as remote locations, new development areas and old districts in Hong Kong. Meanwhile, owing to the characteristics¹ of 5G, the Administration considers that more radio base stations ("RBSs") are required to be installed to provide better 5G network coverage and network transmission.

¹ Spectrum at higher frequency bands for provision of high speed and high capacity services (e.g. 5G) generally has a lower penetration power and smaller coverage range.

Strengthening 5G infrastructure

3. The Telecommunications (Amendment) Bill 2023 was passed by LegCo on 21 February 2024, which aimed at amending the Telecommunications Ordinance (Cap. 106)² to ensure that appropriate space would be made available in new buildings for the installation of mobile communications facilities (“MCFs”) by mobile network operators (“MNOs”). The amended Cap. 106 provides that a licensee (i.e. MNOs) authorized by the Communications Authority (“CA”) has the right to access a specified building to place and maintain a radiocommunications installation in, over or on the specified building for the purpose of providing a radiocommunications service. The amended Ordinance, save for section 3, has come into operation since 1 March 2024.

Supply of spectrum

4. Between 2019 and 2023, CA assigned a total of more than 2 100 MHz of spectrum in the high, mid and low frequency bands through market-based approach to enable the early launch of 5G services by MNOs. As advised by the Administration, major MNOs have at present been provided with sufficient spectrum for launching a variety of 5G services to meet different user demands.

Encouraging mobile network operators’ investments in telecommunications infrastructure by providing tax incentive

5. The Inland Revenue (Amendment) (Tax Deductions for Spectrum Utilization Fees) Bill 2023 was passed by LegCo on 10 January 2024. The Bill sought to amend the Inland Revenue Ordinance (Cap. 112) to provide tax deduction for the spectrum utilization fees (“SUF”) payable by MNOs on frequency spectrum acquired in future spectrum auctions. The objective

² In order to implement the proposals in the Telecommunications (Amendment) Bill 2023, the Building Authority will adopt the requirements under the Code of Practice for the Mobile Communications Facilities (“the Mobile CoP”) and update the relevant Practice Note issued pursuant to regulation 28A (access facilities for telecommunications and broadcasting services) of the Building (Planning) Regulations (Cap. 123F), so as to specify the floor space and ancillary facilities as required by the Mobile CoP in specified buildings for MCF installation. Separately, the Housing Department will reserve space and facilities at new public housing developments in accordance with the updated Practice Note to be published by the Buildings Department and formulate administrative arrangements to enable MNOs’ access to the reserved space therein for placing and maintaining radiocommunications installations. The Lands Department will also make appropriate provisions in new leases to allow for MCF installation in a private residential or non-commercial building without the need for any application for waiver.

is to encourage MNOs to invest more proactively in telecommunications infrastructure for providing better communications services to business sectors and the general public, with a view to further promoting the development of mobile communications services in Hong Kong. The amended Ordinance has come into operation since 19 January 2024.

Enhancing the 5G network capacity at venues of major events

6. Notwithstanding the existing high 5G coverage, the Administration has received quite a lot of views that the 5G network services at major public event venues (e.g. Central Harbourfront Event Space, Hong Kong Coliseum, Hong Kong Convention and Exhibition Centre and AsiaWorld-Expo) are unable to meet the service demand during events, resulting in low transmission speed and affecting audience/participants' overall event experience. In the light of the above and taking into account the importance of enhanced network capacity in ensuring the safety of large-scale events, relevant government departments will coordinate with host organizations to proactively invite MNOs to install RBSs and provide necessary assistance, so as to enhance the 5G network capacity at these venues.

Opening up more venues for the installation of radio base stations

7. The Office of the Communications Authority (“OFCA”) has all along assisted MNOs in setting up RBSs. In this regard, the Administration has launched a pilot scheme since March 2019 to open up suitable government premises with a streamlined application procedure and a nominal rent (\$1 per year) for MNOs to apply for the installation of RBSs for the rollout of 5G network. So far, some 1 500 premises managed by different departments have already been opened up. In addition, the Government has also established a mechanism to facilitate MNOs in the installation of RBSs at sheltered bus stops and public payphone kiosks. OFCA has indicated that it will continue to consider the views of MNOs and provide assistance for them to set up RBSs at suitable sites.

Extending fibre-based networks to villages in remote areas

8. The Subsidy Scheme to Extend Fibre-based Networks to Villages in Remote Areas was launched in 2018 with a view to encouraging fixed network operators (“FNOs”) through provision of financial incentives to extend fibre-based networks. HGC Global Communications Limited and Hong Kong Telecommunications Limited are rolling out the fibre-based networks in phases to 235 villages under the six tender projects, benefiting approximately 110 000 villagers. At present, fibre-based networks have been rolled out to more than 150 villages under the Subsidy Scheme, which will facilitate the current and future installation of mobile network facilities.

Encouraging wider application of 5G technology

9. The Administration launched the Subsidy Scheme for Encouraging Early Deployment of 5G in May 2020 to encourage early deployment of 5G technology for improving operational efficiency and service quality through subsidy³. The application period was extended several times until December 2022. Over 170 projects (involving a subsidy amount of around \$78 million) were approved, covering innovative applications in various sectors.

Major views and concerns expressed by Members

10. At the meetings of the Panel on Information Technology and Broadcasting (“the Panel”) and the Bills Committee on Telecommunications (Amendment) Bill 2023, Members had had discussions on the development of 5G and the expansion of mobile network infrastructure in rural and remote areas. The major views and concerns expressed by Members are summarized in the ensuing paragraphs.

Encouraging wider application of 5G technology

11. While the current 5G network coverage in Hong Kong had already exceeded 90% of the local population, Members expected the extension of 5G services to cover the entire territory following the amendments to Cap. 106 and relevant guidelines. The Administration advised that it would promote the development of 5G on various fronts, which included, among others, supplying spectrum in high, mid and low frequency bands; and opening up suitable government premises for base station installations, with a view to meeting the future demand of the telecommunications market. Aside from securing new spectrum, MNOs would have the flexibility to re-farm some of their existing spectrum originally intended for 2G/3G/4G services to provide 5G services. The Administration added that the amendments to Cap. 106 and relevant guidelines would ensure that appropriate space be made available in new buildings for the installation of MCFs, thereby facilitating the further expansion of 5G network coverage.

Extending fibre-based networks to villages in remote areas

12. Members enquired about the Administration’s plan to improve the 5G mobile communications service coverage in some remote areas and old districts. According to the Administration, subsidized FNOs under the

³ Subject to a cap of \$500,000 for each project.

Subsidy Scheme to Extend Fibre-based Networks to Villages in Remote Areas were taking forward the network extension works in an orderly manner. As regards a certain number of old buildings in the urban areas currently without access to fibre-based networks, OFCA would assist residents in need to follow up with MNOs.

Providing fibre-based fixed network broadband service coverage to “three-nil” buildings

13. Members raised enquiries on how the Administration would liaise and discuss with the owners and stakeholders of “three-nil” buildings (i.e. buildings which did not have owners’ corporations or residents’ organizations, and had not engaged any property management companies) and old buildings, so that MNOs would be allowed to arrange for MCF installations in such buildings.

14. The Administration acknowledged that contacting stakeholders of “three-nil” buildings and old buildings was difficult, and that had resulted in slower progress in installing fibre-based network systems in such buildings. However, even for some old buildings in urban areas that currently lacked access to fibre-based networks, households could still opt for residential wireless broadband services that were supported by 5G networks offered by MNOs. These services were competitively priced, and provided an alternative to fixed broadband services for residential users. Meanwhile, the Telecommunications (Amendment) Bill 2023 and the proposed amendments to and relevant guidelines would significantly improve Hong Kong’s overall telecommunications infrastructure, facilitating the extension of mobile network coverage and benefiting old buildings located near the newly built ones.

Facilitating the installation of radio base stations by mobile network operators

15. Referring to the initiative to assist MNOs in installing RBSs, Members suggested that the Administration should provide related supporting facilities (e.g. making available electrical power connection) in those government venues which were considered suitable to be opened up for RBS installations, so as to reduce the MNOs’ costs. The Administration advised that relevant bureaux/departments would further collaborate to refine the arrangements for the provision of premises for installing RBSs and ancillary facilities.

16. Members requested the Administration to consider enhancing the functionalities of street lights to facilitate the installation of RBSs by MNOs, with a view to promoting the development of smart city (including

autonomous technology). The Administration advised that with the launch of the Multi-functional Smart Lampposts pilot scheme by the Office of the Government Chief Information Officer, MNOs might install small cells in such smart lampposts; those lampposts were designed to make available space and loading capacity for the installation of 5G RBSs by MNOs. Given that ordinary street lighting systems were mainly used for illumination purpose, their design and loading capacity might not be optimal for the installation of RBSs.

Responsibilities in relation to the placement and maintenance of mobile communications installations

17. Members expressed concern about the responsibilities in relation to the installation and maintenance of mobile communications installations, in particular the installation and maintenance issues involving the reserved floor space under the newly amended Ordinance, as well as the responsibility for repairing damage to buildings as a result of the installation of such facilities. Members urged OFCA to help reconcile disputes between building owners and MNOs.

18. The Administration advised that according to section 14(2) of Cap. 106, FNOs must pay full compensation to owner(s) of a building if there was any physical damage to the building attributable to the placement and maintenance of the telecommunications facilities or other associated activities. The Telecommunications (Amendment) Bill 2023 amended section 14(2) of Cap. 106 to cover MNOs and the arrangements for the access to specified buildings for the placement and maintenance of MCFs. The Code of Practice for the Mobile Communications Facilities (“the Mobile CoP”) would also set out the corresponding responsibilities to be borne by MNOs. As regards the day-to-day repair and maintenance of the reserved space, the Administration pointed out that OFCA would proactively step in by taking up the coordinating role in case of any disputes between MNOs and FNOs over the installation of communications facilities in existing premises, and past experiences showed that the problems could usually be resolved through coordination.

19. On the placement and maintenance of radiocommunications installations, Members expressed concern about which of the legal instruments would have overriding effect in case the requirements under the amended Ordinance or the Mobile CoP were in conflict with the Deed of Mutual Covenant and Management Agreement (“DMC”) of buildings. Members had also requested the Administration to provide an explanation on the specific implementation arrangements for the authorization for MNOs to access specified buildings under Cap. 106 and the Mobile CoP, as well as the respective roles of CA and OFCA.

20. According to the Administration, a DMC was a document which defined the rights, interests and responsibilities among all the co-owners of a building. Generally speaking, the DMC should not contravene Hong Kong laws. The amended section 14(4) of Cap. 106 stipulated the rights of MNOs who were authorized to enter specified buildings. If a person (including incorporated owners or building management companies) prevented or obstructed the authorized MNO to enter the specified building, the MNO who were authorized could apply to a magistrate for an order to enter the specified building for installation of the necessary facilities. OFCA would step up publicity to enhance the understanding of incorporated owners and building management companies about the access rights of authorized MNOs. As FNOs had all along been entering buildings to place and maintain telecommunications facilities in a smooth manner under the aforesaid mechanism for many years, incorporated owners and building management companies should be familiar with the relevant requirements, and there should be no problem or difficulty in complying with similar requirements in the future. The Administration stressed that as OFCA played the role of a coordinator, it was by no means above developers, telecommunications operators and owners. OFCA's dedicated team would liaise with the relevant stakeholders and provide appropriate assistance and coordination as necessary.

Radiation safety of radio base stations

21. Highlighting the public's grave concern over radiation safety of mobile communications installations retrofitted in buildings, Members commented that the Administration should take the initiative to conduct inspections and site tests to address public concerns. Besides, Members requested the Administration to step up public education on radiation safety of RBSs.

22. The Administration advised that CA would vet the applications for bringing RBSs into operation strictly in accordance with the non-ionizing radiation ("NIR") safety standard recognized by the World Health Organization. In short, MNOs must strictly adhere to the requirement of observing the NIR safety limits as set by the International Commission on Non-ionizing Radiation Protection (ICNIRP) before obtaining CA's approval for bringing their RBSs into operation. Besides, OFCA would proactively conduct site visits at RBSs to measure radiation levels and conduct radiation measurements in relevant premises at the requests of members of the public. OFCA would continue to step up publicity and education on radiation safety of RBSs to address public concerns.

Legislative Council Questions

23. In recent years, Members had raised questions relating to 5G development at various Council meetings. The hyperlinks to the relevant questions and the Administration's replies are in the **Appendix**.

Latest development

24. The Administration will update the Panel on the new initiatives related to 5G development and the latest progress at the meeting on 13 May 2024.

Relevant papers

25. A list of relevant papers is set out in the **Appendix**.

Council Business Division 1 and Public Complaints Office
Legislative Council Secretariat
7 May 2024

Appendix

The Administration's initiatives for promoting 5G development

List of relevant papers

Committee	Date of meeting	Papers
Panel on Information Technology and Broadcasting	20 March 2023	Agenda Item IV: Proposed amendments to the Telecommunications Ordinance (Cap. 106) and relevant guidelines to enhance 5G infrastructure Minutes of meeting
	13 November 2023	Agenda Item III: Briefings by the Secretary for Innovation, Technology and Industry, the Secretary for Commerce and Economic Development and the Secretary for Culture, Sports and Tourism on the Chief Executive's 2023 Policy Address Minutes of meeting
Bills Committee on Telecommunications (Amendment) Bill 2023	19 February 2024*	Report of the Bills Committee presented to the Legislative Council

* Date of issue

Council meeting	Paper
6 July 2022	Question 9 : Subsidy Scheme for Encouraging Early Deployment of 5G
19 April 2023	Question 12 : Coverage of mobile phone and mobile networks in remote areas
20 March 2024	Question 14 : Development of mobile communications services