

Telecommunications Regulatory Affairs Advisory Committee

New Policy Initiatives to Promote 5G Development

PURPOSE

This paper updates Members on the new policy initiatives to promote 5G development as announced in the 2023 Policy Address.

BACKGROUND

2. Since the commercial launch of the fifth generation (“5G”) mobile services in April 2020, 5G has been developing rapidly in Hong Kong. With the active network implementation and expansion by the mobile network operators (“MNOs”), 5G network coverage in Hong Kong has now reached more than 90% of the Hong Kong population, covering major locations in urban areas and all 98 stations along the Mass Transit Railway lines. The coverage in core business districts has even reached 99%. As of September 2023, there were about 6 million 5G users, representing about 80% of the population.

3. The advent of 5G technology has opened up vast potential for various commercial and innovative applications such as smart surveillance, construction safety, remote operation, telemedicine, intelligent transport, etc. benefiting various trades and Hong Kong society as a whole. With a view to further enhancing the development of 5G network infrastructure, the Office of the Communications Authority (“OFCA”) is implementing a number of new policy initiatives as announced in the 2023 Policy Address¹ to further promote 5G development in Hong Kong.

¹ Please refer to page 18 of
https://www.policyaddress.gov.hk/2023/public/pdf/policy/policy-full_en.pdf.

NEW POLICY INITIATIVES TO PROMOTE 5G DEVELOPMENT

Enhancing Coverage of 5G Networks in Rural and Remote Areas through Subsidies

4. At present, coverage of 5G networks in rural and remote areas is comparatively less extensive. The Government has been monitoring the situation and considers it important to provide reliable mobile coverage for these areas despite the higher costs for establishing mobile network infrastructure there. In this regard, a new initiative has therefore been announced in the 2023 Policy Address aiming at expediting the expansion of 5G network infrastructure in rural and remote areas through the provision of subsidies. The Government will actively coordinate with MNOs to provide subsidy to speed up the extension of mobile network infrastructure facilities in rural and remote areas. The new initiative aims to encourage MNOs to accelerate the roll-out of mobile infrastructure and extend 5G coverage in these areas thereby promoting economic development, improve the quality of life and ensure the safety of countryside activities in these underserved areas.

5. OFCA is now collecting from MNOs technical information in respect of the establishment of radio base stations in rural and remote areas for consideration. These inputs will be essential to OFCA in planning the implementation and formulating the technical details and operational arrangement for the new initiative. OFCA targets to launch the scheme within 2025.

Enhancing the 5G Network Capacity at Major Public Event Venues

6. While Hong Kong has extensive 5G mobile coverage, mobile users may experience a decrease in mobile connection speed at certain venues, such as exhibition centres, concert halls, etc. during major public events when a large crowd of participants or audience are simultaneously using mobile services.

7. Therefore, the provision of sufficient network coverage and capacity to the major public event venues is important to the success of organising major public events in Hong Kong. In light of the foregoing,

the Chief Executive announced in the 2023 Policy Address² that the Government would promote 5G development by co-ordinating proactively with relevant organisations to enhance 5G network capacity at the major public event venues such as –

- Central Harbourfront Event Space;
- Hong Kong Coliseum;
- Hong Kong Convention and Exhibition Centre;
- AsiaWorld-Expo, etc.

8. OFCA would take lead in implementing this policy initiative. Since November 2023, OFCA has formed a Technical Working Group (“TWG”) with four MNOs and is reviewing the current status of provision of mobile services at these major public event venues. The TWG is currently seeking the inputs of MNOs and other stakeholders to identify the target list of venues at which enhancement of 5G coverage is necessary.

9. OFCA will continue to coordinate with the relevant venue owners/managers and MNOs through the TWG in order to facilitate MNOs’ network enhancement or development works at the target venues. OFCA will arrange meetings/visits to the relevant venues for venue owners/managers and MNOs to agree on the technical arrangements of enhancing the 5G network capacity at these venues. OFCA will monitor and facilitate the development of the network enhancement works accordingly.

Supplying More Spectrum to MNOs by Auctions

10. Between 2019 and 2023, the Communications Authority (“CA”) assigned a total of more than 2 100 MHz of new spectrum in the high, mid and low frequency bands, namely 700 MHz, 3.3 GHz, 3.5 GHz, 4.9 GHz, and 26/28 GHz, to facilitate the development of 5G services in Hong Kong. At present, major MNOs have acquired sufficient spectrum in different frequency bands for providing 5G services to meet different

² Please refer to page 29 of https://www.policyaddress.gov.hk/2023/public/pdf/measure/measure-04_en.pdf.

users' demands.

11. In order to meet the growing needs of innovative 5G applications and usages in terms of speed, capacity and coverage, OFCA will continue to support the CA to make available additional spectrum in different frequency bands to the industry. OFCA will conduct two auctions around November and December 2024 respectively to assign a total of 510 MHz of spectrum (including 110 MHz of spectrum in the 850/900 MHz and 2.3 GHz bands, and 400 MHz of spectrum in the 6/7 GHz band) for provision of public mobile communications services.

12. As announced in a Joint statement of the CA and the Secretary for Commerce and Economic Development ("SCED") published on 2 May 2023³, a total of 110 MHz of spectrum in the 850/900 MHz and 2.3 GHz bands will be put to auction using the simultaneous multiple-round ascending format in which bidders may bid on multiple individual frequency blocks at the same time.

13. OFCA will also assist the CA in making available 400 MHz of spectrum in the 6/7 GHz band to facilitate timely release of the spectrum to the market in early 2025. The 400 MHz of spectrum is proposed to be put to auction under a clock auction format consisting of a quantity stage and an assignment stage, as stipulated in the Consultation Paper jointly issued by the CA and SCED on 18 July 2023⁴. Under the proposal, bidders will bid for the number of frequency blocks they wish to acquire in the quantity stage, followed by the assignment stage to determine the contiguous frequency blocks that may be assigned to them. Clock auction format, as adopted in the auctions for 3.3 GHz and 3.5 GHz bands in 2019, is better suited for enabling contiguous frequency blocks assignment to all bidders when there is a large number of frequency blocks to be auctioned. The CA and the SCED target to publish their decisions on the arrangements for the assignment of the 6/7 GHz band in a joint statement in the first quarter 2024.

³ The joint statement is available at:
https://www.coms-auth.hk/filemanager/statement/en/upload/621/joint_statement_20230502.pdf.

⁴ The consultation paper is available at:
https://www.coms-auth.hk/filemanager/en/content_711/cp20230718.pdf.

14. Similar to the auctions conducted in the past, OFCA will publish application details of both auctions in the respective information memoranda to be issued nearer the time of the auctions in the later half of 2024.

15. With suitable spectrum being and to be put in use and the specific measures adopted to assist expansion of 5G networks, MNOs are expected to further expand their network capacity in the urban and rural areas to meet with the increasing data traffic demands. Benefiting from the ubiquitous availability of 5G in Hong Kong, mobile users can enjoy improved 5G services with higher speed, higher capacity, higher reliability, better connectivity and lower latency of communications.

VIEWS SOUGHT

16. Members are invited to take note of the content of this paper. Any views and comments from Members are welcome.

**Office of the Communications Authority
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