

LCQ19: Spectrum for provision of fifth generation mobile services

Following is a question by the Hon Charles Mok and a written reply by the Acting Secretary for Commerce and Economic Development, Dr Bernard Chan, in the Legislative Council today (June 20):

Question:

To tie in with the launch of the fifth generation (i.e. 5G) mobile service in the market in 2020, the Communications Authority (CA) has decided to re-allocate the radio spectrum in the 3.4 – 3.7 GHz band from fixed satellite service (FSS) to mobile service with effect from April 1, 2020. Moreover, in order to avoid radio interference with the existing earth stations for telemetry, tracking and control of satellites in orbit (TT&C Stations), CA has decided to set up restriction zones in Tai Po (which will cover areas including the entire Tai Po District, Shatin, Ma On Shan, Fanling, Sai Kung, and the core areas of scientific research activities in the Hong Kong Science Park and The Chinese University of Hong Kong) and Stanley, in which the installation of mobile base stations of public mobile services operating in the 3.4 – 3.6 GHz band (3.5 GHz band) is forbidden. Some members of the information and technology sector have relayed to me that the setting up of such restriction zones will render members of the public residing and working in the restriction zones unable to use 5G mobile service in future, directly affecting scientific research activities and smart city development. In this connection, will the Government inform this Council:

(1) of the respective populations of the two aforesaid restriction zones, and the respective numbers of households, courts/estates, industrial buildings, office buildings, shopping centres, schools, universities, companies and scientific research institutions (if any) covered by them (set out in a table);

(2) whether CA has assessed (i) the impact on the daily lives of the residents in the zones, (ii) the impact on the scientific research and economic activities in the zones and (iii) the losses to be sustained by the entire local economy (including the loss caused by the failure to provide 5G mobile service in the zones), to be brought about by the setting up of the two restriction zones; whether CA will remove the two restriction zones, or reduce their coverage; if CA will, of the details and the implementation timetable;

(3) whether CA had, before deciding to re-allocate the aforesaid spectrum, studied (i) the identification of alternative sites for relocating the existing TT&C Stations and (ii) the minimum area to be covered by the restriction zones; if CA had, of the details; if not, the reasons for that;

(4) apart from the two restriction zones, whether CA has studied forbidding the installation of mobile base stations of public mobile services operating

in the 3.5 GHz band in other areas or locations; if CA has, of the areas or locations involved and the reasons for that; and

(5) whether CA has plans to relocate the FSS-related facilities to avoid the impact of the setting up of the restriction zones on the use of 5G mobile service and scientific research activities; if CA does, of the details of the plans and the implementation table?

Reply:

President,

Consolidated reply to the five parts of the question is as follows.

Hong Kong and the Asia-Pacific region have been allocating the 3.4 – 4.2 GHz band for use by satellite services for years. Currently, there are two satellite companies in Hong Kong which operate a total of 12 satellites. These satellites are important external telecommunications facilities for Hong Kong as a telecommunications hub in the region. At present, the two satellite companies have set up earth stations for telemetry, tracking and control (TT&C Stations) in Tai Po and Stanley for the operation of the satellites in space orbit. In view of the development of mobile communications in recent years, upon frequency coordination with the Mainland authorities and completion of the relevant public consultation exercise, the Communications Authority (CA) decided in March 2018 to re-allocate the 3.4 – 3.7 GHz band from satellite services to mobile services, and to assign the 3.4 – 3.6 GHz band (3.5 GHz band) for public mobile services with effect from April 1, 2020. This arrangement provides an advance notice of about two years to the affected licensees so that they can make necessary changes and adjustment. Since the TT&C Stations will still need to make use of the 3.4 – 3.7 GHz band to operate the satellites already launched, and the base stations for mobile services may cause interference to the TT&C Stations, in making its decision on the re-allocation, the CA has to impose restriction zones around these TT&C Stations whereby future deployment of base stations for mobile services (including the fifth generation (5G) mobile services) operating in the 3.5 GHz band inside the restriction zones will not be allowed.

According to the "Projections of Population Distribution 2015-2024" published by the Planning Department, the population in these two restriction zones is roughly estimated to be around 740 000. However, we must point out that coverage of 5G services will be available in these restriction zones in future (as explained below). We do not have other breakdowns as requested in part (1) of the question.

To ensure that the current spectrum management is in line with the 5G development, apart from re-allocating the 3.5 GHz band for public mobile services (including 5G services), the CA also plans to allocate the 26 GHz band (24.25 – 27.5 GHz band) and the 28 GHz band (27.5 – 28.35 GHz band) for public mobile services. Such spectrum, which is planned for assignment in 2019-2020, amounts to a total of 4 300 MHz, seven times more than the aggregate amount of spectrum currently deployed for the second, third and

fourth generation (2G, 3G and 4G) mobile services. Hence, 5G services will be provided through a number of frequency bands, instead of relying on the 200 MHz of spectrum in the 3.5 GHz band alone. Besides, in accordance with the technology neutral principle, operators may refarm their existing 2G/3G/4G spectrum for 5G services. The CA will continue to identify more spectrum for 5G services. All the spectrum can be used for provision of 5G services to cover areas within the restriction zones applicable to the 3.5 GHz band.

In late May 2018, mobile network operators (MNOs) proposed to the Office of the Communications Authority (OFCA) some measures for reducing the size of the restriction zones. Whether the measures proposed by MNOs are feasible will need to be examined by way of in-depth technical analysis and/or field tests. OFCA has already set up a working group comprising satellite operators and MNOs in order to identify options which are technically feasible and acceptable to all operators. The working group already convened its first meeting in early June and will continue to conduct regular discussions.

As for MNOs' proposal to relocate the existing TT&C Stations, there is no legal basis for the CA to unilaterally request satellite operators to relocate their existing TT&C Stations which are legally set up, invested and put to use. In fact, the TT&C Stations concerned have been in operation for more than 20 years. Satellite operators indicated that the relocation of TT&C Stations will not only involve substantial investment, but will also disrupt their operation. That said, if satellite operators have plans to relocate their stations or set up new backup stations to reduce the constraints on employing spectrum in the 3.5 GHz band for 5G services, OFCA will provide full assistance.

In sum, any concern on 5G development and coverage in individual areas being affected due to the need to protect satellite services when using spectrum in the 3.5 GHz band is one-sided, and reflects that those having such concern may not have a full picture of the 5G development. As advised by the Commerce and Economic Development Bureau and OFCA on various occasions, the first batch of new 5G spectrum is primarily in the 26 GHz and 28 GHz bands which the CA plans to assign in early 2019, ahead of the assignment of spectrum in the 3.5 GHz band. Various areas of Hong Kong, including the restriction zones applicable to the 3.5 GHz band, can have 5G coverage by using spectrum in the 26 GHz and 28 GHz bands at an earlier stage.

Phishing email related to The Hongkong and Shanghai Banking Corporation Limited

The following is issued on behalf of the Hong Kong Monetary Authority:

The Hong Kong Monetary Authority (HKMA) wishes to alert members of the public to a press release issued by The Hongkong and Shanghai Banking Corporation Limited on phishing e-mail, which has been reported to the HKMA. Hyperlink to the press release is available on [the HKMA website](#) for ease of reference by members of the public.

Anyone who has provided his or her personal information to the e-mail concerned or has conducted any financial transactions through the e-mail should contact the bank concerned using the contact information provided in the press release, and report to the Police or contact the Cyber Security and Technology Crime Bureau of the Hong Kong Police Force at 2860 5012.

Managers of unlicensed guesthouses fined

Two women were fined \$8,000 and \$10,000 at Kowloon City Magistrates' Courts today (June 20) for contravening the Hotel and Guesthouse Accommodation Ordinance.

The courts heard that in November last year, officers of the Office of the Licensing Authority (OLA), the Home Affairs Department, inspected two suspected unlicensed guesthouses on Changsha Street and Shantung Street in Mong Kok. During the inspections, the OLA officers posed as lodgers and successfully rented rooms in these guesthouses on a daily basis.

According to the OLA's records, these guesthouses did not possess licences under the Ordinance on the days of inspection. The women responsible for managing the premises were charged with contravening section 5(1) of the Ordinance.

A department spokesman stressed that operating or managing an unlicensed guesthouse is a criminal offence and will lead to a criminal record. Upon conviction, the offender is liable to a maximum fine of \$200,000 and two years' imprisonment.

The spokesman appealed to anyone with information about suspected unlicensed guesthouses to report it to the OLA through the hotline (Tel: 2881 7498), by email (hadlaeng@had.gov.hk), by fax (2504 5805) using the report form downloaded from the OLA website (www.hadla.gov.hk), or through the mobile application "Hong Kong Licensed Hotels and Guesthouses".

HAD to open temporary night heat shelters

The Home Affairs Department will open 17 temporary night heat shelters tonight (June 20) for people in need of the service.

The shelters will be open from 10.30pm until 8am tomorrow.

For further information, please call the department's enquiry hotline before midnight on 2835 1473.

The 17 temporary night heat shelters are located at:

Hong Kong Districts:

Central and Western –

Sai Ying Pun Community Complex Community Hall
3/F, Sai Ying Pun Community Complex,
2 High Street, Sai Ying Pun

Eastern/Wan Chai –

Causeway Bay Community Centre
7 Fook Yum Road, Causeway Bay

Southern –

Lei Tung Community Hall
Lei Tung Estate, Ap Lei Chau

Kowloon Districts:

Kowloon City –

Hung Hom Community Hall
1/F, Kowloon City Government Offices,
42 Bailey Street, Hung Hom

Kwun Tong –

Lam Tin (West) Estate Community Centre
71 Kai Tin Road, Lam Tin

Sham Shui Po –

Shek Kip Mei Community Hall
G/F, Block 42, Shek Kip Mei Estate, Sham Shui Po

Wong Tai Sin –

Tsz Wan Shan (South) Estate Community Centre
45 Wan Wah Street, Tsz Wan Shan

Yau Tsim Mong –
Henry G Leong Yaumatei Community Centre
60 Public Square Street, Yau Ma Tei

New Territories Districts:

Kwai Tsing –
Kwai Shing Community Hall
Podium, Block 6, Kwai Shing West Estate, Kwai Chung

North –
Cheung Wah Community Hall
Cheung Wah Estate, Fanling

Sai Kung –
Hang Hau Community Hall
G/F, Sai Kung Tseung Kwan O Government Complex,
38 Pui Shing Road, Hang Hau, Tseung Kwan O

Sha Tin –
Lung Hang Estate Community Centre
Lung Hang Estate, Sha Tin

Tai Po –
Tai Po Community Centre
2 Heung Sze Wui Street, Tai Po

Tsuen Wan –
Lei Muk Shue Community Hall
G/F, Hong Shue House, Lei Muk Shue Estate, Tsuen Wan

Tuen Mun –
Butterfly Bay Community Centre
Butterfly Estate (near Tip Sum House), Tuen Mun

Yuen Long –
Long Ping Community Hall
Long Ping Estate, Yuen Long

Yuen Long –
Tin Yiu Community Centre
Tin Yiu Estate, Tin Shui Wai

The temporary night heat shelters will resume their functions as either community centres or community halls in the daytime for hire by the local community and cannot continue to be open as heat shelters. People may choose to take refuge from the heat during the daytime in the common areas in any of the 21 designated community centres or community halls. Their opening hours are from 9am to 10pm. For addresses of the community centres or community

halls, please browse the following webpage:

www.had.gov.hk/file_manager/en/documents/public_services/emergency_services/List_CH_CC_Day_E.pdf.

EPD convictions in May

Sixty-four convictions were recorded in May 2018 for breaches of legislation enforced by the Environmental Protection Department (EPD).

Five of the convictions were under the Air Pollution Control Ordinance, one was under the Environmental Impact Assessment Ordinance, 15 were under the Noise Control Ordinance, 39 were under the Waste Disposal Ordinance, and four were under the Water Pollution Control Ordinance.

The heaviest fine in May was \$40,000, assessed against a company which discharged waste or polluting matter into a water control zone.