

LCQ21: The fifth generation mobile communications services

Following is a question by the Hon Chan Hak-kan and a written reply by the Secretary for Commerce and Economic Development, Mr Edward Yau, in the Legislative Council today (July 14):

Question:

Regarding the fifth generation (5G) mobile communications services, will the Government inform this Council:

- (1) whether it knows the current coverage of 5G mobile networks and average network speed, with a breakdown by District Council district, MTR station and village on the List of Recognized Villages;
- (2) of the respective up-to-date numbers of applications for the use of 5G radio base stations (RBSs) received and approved; in respect of the approved applications, the number and percentage of those involving government premises, and the average processing time for each application;
- (3) of the respective up-to-date numbers of applications received and approved under the "Subsidy Scheme for Encouraging Early Deployment of 5G"; the average (i) amount of subsidy granted and (ii) processing time, for each approved application;
- (4) as the Government indicated in November last year that it was proactively discussing with two satellite operators the relocation of their satellite earth stations in Tai Po to enable mobile network operators (MNOs) to make extensive use of all 5G frequency bands (including the 3.5 GHz band) in Hong Kong for provision of services, of the progress of the relocation plan; when the relocation plan is expected to be completed, and whether it has formulated a contingency plan to cater for the situation that the relocation plan has been delayed; if so, of the details; if not, the reasons for that;
- (5) as the Government has indicated that before the completion of the relocation plan mentioned in (4), the various MNOs may take the following transitional measures: (i) making use of other 5G frequency bands (e.g. 4.9 GHz band) or (ii) re-farming existing spectrum (e.g. 2.1 GHz band) to provide 5G services in the 3.5 GHz band restriction zone in Tai Po, whether the Government knows what transitional measures that the various MNOs have taken;
- (6) as the Government indicated in November last year that it would streamline the procedure for vetting and approval of applications for installation of RBSs on the exterior walls or in the indoor areas of government buildings, of the progress of the relevant arrangements; whether it has compared the number of applications received and the efficiency of processing applications after streamlining the vetting and approval procedure with those before; whether it has plans to introduce measures to further

facilitate MNOs in installing RBSs in government buildings; if so, of the details; if not, the reasons for that; and

(7) given that in order to enable the co-existence of Satellite Master Antenna Television (SMATV) systems with 5G systems, the Government has earlier on launched a one-year "Subsidy Scheme for Supporting Upgrading Satellite Master Antenna Television Systems" to offer subsidies to some 1 600 eligible SMATV systems in Hong Kong for implementing technical upgrades, so that the public can continue to enjoy high-quality satellite television services, of the number of applications received by the Government, and the progress of processing such applications; whether it has assessed if those SMATV systems which has not implemented technical upgrades will interfere with the reception of 5G systems; if it has assessed and the outcome is in the affirmative, whether there are corresponding measures; if there are no corresponding measures, of the reasons for that?

Reply:

President,

With characteristics of high speed, high capacity, reliability, massive connectivity and low latency communications, 5G technology opens up vast potential for various innovative commercial services and smart city applications. The Government promotes 5G development on various fronts, including spectrum supply, radio base stations (RBSs) installations and encouraging deployment, etc. In Hong Kong, mobile network operators (MNOs) have since the second quarter of 2020 launched their commercial 5G services, with very satisfactory progress.

My reply to the different parts of the question raised by the Member is as follows:

(1) As at May 2021, 5G coverage reached over 90 per cent of the population in Hong Kong, covering major shopping centres and all stations along main Mass Transit Railway lines. The coverage of 5G networks in some core business districts or areas with high pedestrian flow even topped 99 per cent. According to a report issued by the survey organisation Opensignal in June 2021, the maximum and average download speeds of 5G networks in Hong Kong recorded 347.5 Mbps and 134.8 Mbps respectively.

(2) As at June 30, 2021, the Office of the Communications Authority (OFCA) received a total of 7 821 applications for the use of 5G RBSs, of which 7 167 were approved (including 493 applications involving government premises). An average of around 470 applications were processed every month.

(3) Since the launch of the Subsidy Scheme for Encouraging Early Deployment of 5G in May 2020, OFCA has received a total of 415 applications and approved 103 of them. The average amount of subsidy granted to an approved project was about \$440,000, and the processing time was about eight weeks on average.

(4) and (5) To thoroughly resolve the problem of the "3.5 GHz restriction zone" in Tai Po, the Government has proactively discussed with the two

satellite operators of the relocation of their existing satellite earth stations (using the 3.5 GHz band for telemetry, tracking and control of satellites in orbit) from Tai Po to Chung Hom Kok Teleport. The Lands Department has already granted a land lot to one of the operators. The other operator's discussion with relevant government departments on details of the land grant is in good progress.

As the relocation of satellite earth stations involves complex engineering works and technical issues (including site formation, construction of stations and setup of new satellite antennae), as well as the need to ensure that the normal operation of satellites in orbit will not be affected in the process, the relocation process is expected to be completed by end-2024.

The "3.5 GHz restriction zone" only affects 5G RBSs operating in the 3.5 GHz band. MNOs are using 5G spectrum in other frequency bands (e.g. 4.9 GHz band) or re-farming their existing 2G/3G/4G spectrum in different frequency bands (e.g. 2.1 GHz band) to provide 5G services in the "3.5 GHz restriction zone".

(6) In early 2021, OFCA and the Buildings Department introduced a streamlined approval procedure for applications for installation of telecommunications facilities like antennae and transceivers of 5G small cell sites on the external walls of buildings. No applications have been received so far. In addition, the Government plans to launch a user-friendly online platform in September 2021 to facilitate operators' self-registration for low-power indoor RBSs.

In March 2019, to facilitate the expansion of 5G networks, the Government launched a pilot scheme to open up about 1 000 suitable government premises for the installation of RBSs by operators with the support of the Leisure and Cultural Services Department, the Food and Environmental Hygiene Department and the Government Property Agency. The Government would further adopt a "demand-led" model to open up more suitable government premises and public facilities for operators to install RBSs.

(7) Launched by OFCA in November 2019, the Subsidy Scheme for Supporting Upgrading Satellite Master Antenna Television Systems was completed in November 2020. A total of 1 048 applications were received, of which 1 039 were approved. As Satellite Master Antenna Television systems are not capable of transmitting radio signals, the relevant system upgrades will not cause any interference to 5G systems.