

15 August 2023

Office of the Communications Authority
29/F Wu Chung House
213 Queen's Road East
Wanchai, Hong Kong

Attention: Principal Regulatory Affairs Manager (R22)

Fax: 2803 5112

Email: consult-6-7GHz@ofca.gov.hk

Re: Arrangements for Assignment of the Spectrum in the 6/7 GHz Band for the Provision of Public Mobile Services and the Related Spectrum Utilisation Fee Consultation Paper, dated 18 July 2023.

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Dear Sir/Madam,

APT Satellite Company Limited (herein after referred to as "APT"), as a listed domestic satellite operator and licensee of HKSAR, has reviewed the Consultation Paper jointly issued by the Communications Authority ("CA") and the Secretary for Commerce and Economic Development ("SCED") on the proposed Arrangements for Assignment of the Spectrum in the 6/7 GHz Band for the Provision of Public Mobile Services and the Related Spectrum Utilisation Fee Consultation Paper, dated 18 July 2023, and would like to provide its views and comments as contained in this document.

General intro to APT services in the overlapped band

APT & its associate company operates 5 in-orbit satellites namely APSTAR-6C, APSTAR-7, APSTAR-9, APSTAR-5C and APSTAR-6E (during its orbit climbing stage), all of which were under CA licenses and providing services within the Overlapped Frequency Band

of 6425-7075 MHz (“OFB”). The services allocated in the OFB can be generally categorized as below:

- a) TT&C service, which comprise the functions of Telecommand and Ranging and are critical to the safety of satellites.
- b) #Network Management, the network operation team will manage all traffic onboard the satellite to maintain the service quality by way of active or passive technical support for the traffic from entire satellite coverage.
- c) #Satellite services: Capacities within the OFB are leased by customers from both in and out of Hong Kong. Additionally, satellite coverage in the C band uplink generally features a global nature, which means interference from any location within the coverage (including Hong Kong) would impact the entire beam.

In connection to the consultation paper, APT would like to provide its responses to the Questions raised by CA.

Question 1: Do you have any views on the proposed amendments to the HKTFA regarding the allocation of the 6425 – 7075 MHz band for mobile service with FS and FSS (Earth-to-space) on a co- primary basis?

Comment: APT supports the manner of first-come-first-served in dealing with existing FSS in general but concerns also exist on long term basis.

- a) The first-come-first-served basis:
 - As stated in Paragraph 12 of the consultation paper, an existing station is entitled to be protected from later comers.
 - APT’s ground stations, including TT&C stations, had been operated for over 30 years, during which time the corresponding satellites had been succeeded on an interval of approximately 15 years.
 - Literally speaking, should any of the in-orbit satellite reaches its end-of-life and be succeeded in future, the corresponding station will be re-assigned to continue working with the succeeding satellite and thus may be considered as a “New” station and lost its protected position.
 - By ITU regulations, as long as a series of satellites operate from the same

orbital slot and supported by the same registered ITU filing(s), the associated ground station(s) entitles same protection regardless of the replacement of operational satellite. In other words, the first-come-first-served is implemented on satellite network basis rather than singular station basis.

- Based on the above, APT is of the view that its satellite services, including the TT&C services shall be protected on a site (location) basis. New satellite links established within the listed site(s) as contained in the existing SSCL and UCL should be regarded as the first comer and protected accordingly.

Meanwhile it is worth mentioning that the study conducted in ITU was generally on statistical basis which will largely depending on the actual local deploying scenario. Demands and characteristics from local IMT services in refences with existing FSS services should be considered before the massive deployment of Public Mobile Services.

b) Known unique Applications of IMT:

- ATG (Air-To-Ground), it has been noted that a concept of re-pointing the ground 5G base stations (“BS”) to the airplane route to provide in-flight connections, both uplink and downlink, for the passengers has been in its developing process. This application involves high power BS pointing directly to the air which violates all scenarios contained in the previous studies for the co-exist between FSS and MS. APT is of great concern that when line-of-sight is met, BS pointing directly to satellite, harmful interference will occur.
- UAS (Unmanned Aircraft Systems), it has been observed that for better transmission of HD video stream, UAS inclines to configure higher bands, for instance 5/6G, for broader frequency bands onboard the aircraft. This application would also increase the potential for harmful interference should the line-of-sight scenario is met during its flight.
- APT is of the general view that, airborne application by Public Mobile Services in the OFB should be strictly controlled by OFCA to avoid interference into FSS.

Yours sincerely, #



CHEN Xun

Vice President

APT Satellite Company Limited.