



Office of the Communications Authority
29/F, Wu Chung House
213 Queen's Road East
Wan Chai, Hong Kong
Attention: Principal Regulatory Affairs Manager (R13)

13 June 2018

RE: Joint Response from GSMA and GSA to the "Arrangements for Assignment of the Spectrum in the 3.4 – 3.6 GHz Band for the Provision of Public Mobile Services and the Related Spectrum Utilization Fee"

Dear Sir/Madam:

The GSMA and the GSA would like to thank the Hong Kong Communications Authority (CA) for the opportunity to comment on the consultation for *Arrangements for Assignment of the Spectrum in the 3.4 – 3.6 GHz Band for the Provision of Public Mobile Services and the Related Spectrum Utilization Fee*.

In response to the questions raised in the consultation paper, we would like to provide the following comments, where appropriate, for your kind consideration.

Question 1: Do you have any views on assigning the spectrum in the 3.5 GHz band through an auction?

Assignment through auction is usually considered the best market-based approach when there is likely to be excessive demand than supply. However, the CA also needs to take into account market conditions and dynamics before deciding on the assignment method. The GSMA and GSA would recommend the CA to carefully consider all assignment possibilities based on feedback from the MNOs.

Question 2: Do you have any views on the proposed band plan with division of the available spectrum into ten frequency blocks, each with a bandwidth of 20 MHz?

The GSMA and GSA are concerned that the proposed 20 MHz block size will limit the possible options for MNOs to bid on. For example, in the case of the recent UK auction, the block size was 5 MHz, and in the case of Korea a 10 MHz blocks is adopted. Considering the channelling options defined in the 5G NR by 3GPP and the desire for MNOs to have more flexibility in bidding for spectrum that they value the most, we would recommend reducing the block size to 10 MHz, giving 20 blocks for auction in total.

Question 3: Do you have any views on the proposed spectrum cap of 100 MHz to be imposed on any bidder in the auction?

Spectrum cap is a delicate regulatory tool and is only effective when it is applied to suit the needs of the market at the time. We would recommend the CA to consider the needs of the operators in the market in deciding the application and size of the spectrum cap.

Question 4: Do you have any views on the proposed format of and timing for the auction?

The GSMA and GSA welcome the CA's proposal to provide contiguous blocks of spectrum through this auction. This is important to the MNOs to improve spectrum efficiency in their networks. The clock auction format has also been used recently in the UK and Korea auctions for the 3.5 GHz band.

Re timing, leading countries especially China, Japan and Korea are all gearing up for commercial deployments from 2019 or even as early as end of 2018. In China Mainland, the pre-commercial deployments will start in 2019 improved by large scale commercial deployments in 2020. Taking this into account, we feel Hong Kong risks



further losing its pioneer position if the auction will only happen at the very earliest end of 2019, meaning that any commercial deployment in Hong Kong will only be feasible from 2020. We would instead encourage the CA to hold the auction in the end of 2018 or as early as possible in 2019 and allow deployments to start in 2019.

Question 5: Do you have any views on the proposed ONA requirement?

The GSMA and GSA consider this question to be better answered by MNOs.

Question 6: Do you have any views on the proposed requirements as set out in paragraphs 29 to 31 above?

The GSMA and the GSA are very concerned that the stringent requirements in the proposal will mean that people living and working in the Stanley and Tai Po areas will not have access to 5G services using the 3.5 GHz band during the entire 15-year period of the spectrum assignments.

As we suggested in our response to the previous C-band consultation, applying appropriate and sensible guard band and geographical separation as mitigation measures to IMT stations will help reduce the interference potential. At the same time, appropriate mitigation measures applied to the TT&C stations will further reduce the interference potential resulting in significantly reduced restriction zones and guard bands, such as:

- Adding shielding to the TT&C stations
- Coordinate radiation patterns
- Relocate existing TT&C station in Tai Po Industrial Estate to a more remote location or co-locate it with Stanley station

Again, we would encourage the CA to consider appropriate studies at ITU-R, such as the ones included in report ITU-R S.2368 related to separation distances under various deployment scenarios.

We would also ask the CA to consider reducing the bandwidth of the proposed 100 MHz guard band and explore options to release more spectrum for this auction between 3.6 – 3.7 GHz band to reduce and avoid artificial spectrum scarcity while ensuring protection to TT&C stations.

Question 7: Do you have any views on the proposed subsidy scheme for the upgrade of existing SMATV systems, including the funding and administrative arrangements for issuing the amount of subsidies to the affected system owners/users?

The GSMA and GSA would like to caution the CA that any subsidy scheme needs to be planned carefully in order not to create additional burden on successful bidders. In other countries, such kind of subsidy scheme is usually managed out of the auction proceeds and by the government. We are concerned that the CA has not made clear the extent of the costs and resources related to setting up and administering the fund by the prospective spectrum assignees, and in addition the amount they will have to contribute to the fund, which are important factors that bidders have to take into account when planning their strategy for this auction.

Question 8: Do you have any views on the adoption of a technology neutral approach in respect of the use of spectrum in the 3.5 GHz band?

The GSMA and the GSA support the adoption of a technology neutral approach to use 3.5 GHz band in Hong Kong. As noted in the consultation paper by the CA, other generations of mobile services could be provided because 3.5 GHz band was also defined for 3G and 4G technologies as operating band 22 for FDD mode and 42 for TDD mode by 3GPP.

Restricting the use of spectrum to particular technologies and services exacerbates scarcity of spectrum and prevents customers from gaining access to new services. Providing the flexibility of technology neutrality to the use of spectrum (while ensuring interference management) enables Hong Kong to maximise the benefits



from its spectrum resources on an ongoing basis. MNOs' ability to introduce new, more spectrally efficient, mobile technologies will be critical to meeting exponential growth in demand for mobile data services.

It is however worth noting that the existence of multiple TDD carriers in a band creates the potential for adjacent channel interference. Mitigation measures to ensure sufficient isolation between adjacent channel carriers and/or synchronization between MNO networks could minimise interference effects.

Question 9: Do you have any views on the proposed network and service rollout obligations, as well as the associated performance bond to be imposed on successful bidders?

GSMA and GSA consider the proposed performance bond unnecessary because normal market competition, especially the intense competition in Hong Kong coupled with ever increasing demand on data from consumers, will drive MNOs to provide the best in-class services and coverage to their customers.

Question 10: Do you have any views on the proposals in relation to SUF above?

It is very commendable to allow paying the spectrum fee in annual instalment which will help ease the financial burden of successful bidders. If a successful bidder prefers the lump sum payment, we would also encourage the CA to make clear of the tax implications prior to payment.

Reserve price is a critical part of any auction design. In principle, it should be set way below estimated market value to allow the bidders to discover the true market price. At the same time, we would point out that, in the 5G era, especially in mid to high bands, the amount of spectrum that MNOs need to purchase is significantly more than what they are used to in 3G and 4G, which means that, the price per MHz has to drop significantly in order to make spectrum still affordable. If the same or similar level of price per MHz is retained in the design for 5G spectrum auctions, it will be extremely difficult for any MNO to be able to afford those new spectrum.

Once again, the GSMA and the GSA appreciate the opportunity to comment on this consultation issued by the CA. We are keen to continue the close dialogue with the CA on the above matters, and looks forward to continue working closely with the CA to enable 5G in Hong Kong.

Yours sincerely,

Joe Guan
Head of Policy, Greater China
GSMA
jguan@gsma.com

HyoungJin CHOI
Spectrum Group Coordinator
China, Japan and Korea, GSA
hj686.choi@samsung.com

Copy to:
Mr Chaucer Leung
Deputy Director General – Telecommunications
Office of the Communications Authority
Hong Kong



About the GSMA

The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with more than 300 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai, Mobile World Congress Americas and the Mobile 360 Series conferences.

For more information, please visit the GSMA corporate website at www.gsma.com. Follow the GSMA on Twitter: [@GSMA](https://twitter.com/GSMA).

About the GSA

The GSA (Global mobile Suppliers Association, <https://gsacom.com/>) is an international organization of leading mobile communication suppliers. It develops strategies and plans, and contributes studies and technical analysis to international, regional and individual country policy-makers and regulators to facilitate the timely availability of spectrum for use by mobile network operators.