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Paper for the House Committee meeting on 27 June 2014

**Report of the Subcommittee on
Three Regulations under the Telecommunications Ordinance (Cap. 106)
Gazetted on 16 May 2014**

Purpose

This paper reports on the deliberations of the Subcommittee on Three Regulations under the Telecommunications Ordinance (Cap. 106) Gazetted on 16 May 2014 ("the Three Regulations"). The Three Regulations are, namely, the Telecommunications (Method for Determining Spectrum Utilization Fee) (Administratively Assigned Spectrum in the 1.9 – 2.2 GHz Band) Regulation ("New Regulation"), the Telecommunications (Determining Spectrum Utilization Fees by Auction) (Amendment) Regulation 2014 ("106AC Amendment Regulation"), and the Telecommunications (Method for Determining Spectrum Utilization Fees) (Third Generation Mobile Services) (Amendment) Regulation 2014 ("106X Amendment Regulation").

Background

2. On 22 October 2001, the then Telecommunications Authority assigned to four mobile network operators ("MNOs"), namely CSL Limited ("CSL"), Hong Kong Telecommunications (HKT) Limited ("HKT"), Hutchison Telephone Company Limited ("Hutchison"), and SmarTone Mobile Communications Limited ("SmarTone") (collectively referred to as the "incumbent 3G operators"), a total of 118.4 MHz of paired spectrum in the 1.9 - 2.2 GHz band ("Relevant 3G Spectrum") for a term of 15 years for the provision of 3G mobile services. In view of the impending expiry of the existing term on 21 October 2016 and having conducted public consultations and consulted the Panel on Information Technology and Broadcasting ("the Panel"), the Communications Authority ("CA") has decided to adopt a hybrid administratively-assigned cum market-based approach ("the hybrid approach") to re-assign the Relevant 3G Spectrum for the next assignment term of 15 years from 22 October 2016 to 21 October 2031. According to the decision announced on 15 November 2013, the

incumbent 3G operators will be offered a right of first refusal to be re-assigned with two-thirds of the Relevant 3G Spectrum that they currently hold ("RFR Spectrum"). Should any of the incumbent 3G operators decide not to exercise the right of first refusal, the spectrum thus becoming available will be pooled together with the remaining one-third of the Relevant 3G Spectrum and re-assigned through auction (collectively "Re-auctioned Spectrum").

3. Pursuant to CA's decision to give consent to the proposed acquisition of CSL by HKT, the two parties merged on 14 May 2014.

4. On the spectrum utilization fee ("SUF"), the Secretary for Commerce and Economic Development ("SCED") considers it appropriate to set the auction reserve price for the Re-auctioned Spectrum at \$48 million per MHz. As to the RFR Spectrum, the SCED considers that the SUF per MHz should be set at the higher of \$66 million or the average of the SUF of the Re-auctioned Spectrum, subject to a cap of \$86 million per MHz.

5. CA and the Commerce and Economic Development Bureau have jointly conducted two rounds of public consultation since March 2012 which together have lasted for seven months to devise the re-assignment arrangements for the Relevant 3G Spectrum and the methodology for setting the concerned SUF. The Panel was briefed on the subject on 4 February 2013. The Panel met with deputations at the public hearing held on 27 March 2013. The Panel has been briefed again on 13 January 2014 on CA's decision and SCED's consideration announced on 15 November 2013 on the approach to be adopted to re-assign the Relevant 3G Spectrum and the setting of the concerned SUF respectively.

The Three Regulations

6. The New Regulation, the 106AC Amendment Regulation and 106X Amendment Regulation have been gazetted on 16 May 2014 and tabled at the Council meeting on 21 May 2014. The subsidiary legislation shall come into operation on 11 July 2014.

7. The New Regulation specifies the method for determining the SUF to be paid for using the RFR Spectrum for the next assignment term. The SUF per MHz of the RFR Spectrum is set at the higher of \$66 million or the average of the SUF of the Re-auctioned Spectrum, subject to a cap at \$86 million per MHz.

8. The 106AC Amendment Regulation amends Cap. 106AC to specify that the SUF of Re-auctioned Spectrum for the next assignment term must be determined by way of an auction or a series of auctions to be held in accordance with Cap. 106AC.

9. The 106X Amendment Regulation amends Cap. 106X which is a bespoke regulation designed to specify the method for determining the SUF of the Relevant 3G Spectrum for the existing assignment term, i.e. from 22 October 2001 to 21 October 2016. The determination of SUF of the Relevant 3G Spectrum for the new assignment term will be governed by the New Regulation and Cap. 106AC as amended by the 106AC Amendment Regulation. The 106X Amendment Regulation amends Cap. 106X to make it clear that Cap. 106X only applies in relation to the use of the Relevant 3G Spectrum for the existing assignment period.

The Subcommittee

10. At the House Committee meeting held on 23 May 2014, Members agreed that a subcommittee should be formed to study the Three Regulations in detail. The membership list of the Subcommittee is in **Appendix I**.

11. Under the chairmanship of Hon Charles Peter MOK, the Subcommittee held two meetings with the Administration. The Subcommittee also received views from five organizations at the second meeting. A list of the organizations is in **Appendix II**.

12. To allow more time for the Subcommittee to scrutinize the Three Regulations, a motion was moved by Hon Charles Peter MOK, on behalf of the Subcommittee, at the Council meeting of 18 June 2014 to extend the scrutiny period of the Three Regulations from the Council meeting of 18 June 2014 to that of 9 July 2014.

Deliberations of the Subcommittee

Impact of the hybrid approach on service charges

13. The Subcommittee notes that the condition of requiring assignees of the RFR Spectrum to pay SUF per MHz at the higher of \$66 million (which was derived from the actual fee payable by MNOs for using the Relevant 3G Spectrum in 2015-2016), or the average of the SUF for the Re-auctioned Spectrum as determined by the auction (with reserve price set at \$48 million per MHz taking into account the levels of the SUF of the relevant spectrum as determined by the auctions conducted previously), subject to a cap of \$86 million per MHz will apprise the incumbent 3G operators of the range of their financial commitment at the time of decision while at the same time ensuring the concerned SUF reflects the market value of the spectrum as far as practicable.

14. Some members have expressed concern that the incumbent 3G operators may exercise strategic bidding behaviour, such as joining hands to push up the bidding price, to price out an existing player or new entrants to reduce market competition and bring up mobile service charges.

15. According to the Administration, the Re-auctioned Spectrum will be open for bidding by all interested parties, except HKT and CSL following the merger between the two parties, under the Simultaneous Multi-Round Ascending ("SMRA") auction format of which the bid price for each round is determined by the CA. A spectrum cap of 2 x 20 MHz will be imposed on the individual holding of spectrum in the 1.9 – 2.2 GHz band. For an incumbent 3G operator which has exercised the right of first refusal in respect of two-thirds of the Relevant 3G Spectrum that they currently hold, it may bid for not more than two frequency slots in the auction. Under the SMRA auction format, available frequency slots will be auctioned simultaneously over multiple rounds with price changing on each frequency slot independently. Bidders may bid for one or more slots subject to the spectrum cap to be imposed for the auction. When no valid bid is received for a particular frequency slot in a round, the bidder who is selected by the computer system as the standing highest bidder in the immediately preceding round will be required to pay the concerned SUF . Moreover, if the successful bidder is an incumbent 3G operator which has exercised the right of refusal for re-assignment of the RFR Spectrum, the SUF it will pay for the RFR Spectrum will be the average SUF of all the frequency slots under auction, if it is higher than \$66 million per MHz (subject to a cap of \$86 million per MHz). Therefore, the incumbent 3G operators should not have the incentive to push up the bid price, as it may add to their cost in acquiring the RFR Spectrum. In regard to the concern about collusion among bidders, according to the auction rule, no liaison among bidders is allowed during the entire auction process.

16. The Subcommittee notes that MNOs may lease spectrum capacity to other MNOs and mobile virtual network operators ("MVNOs"). Some members have expressed concern that this may allow a shell telecommunications company holding assigned/auctioned spectrum to reap unreasonably high profits without rolling out network infrastructure.

17. The Administration has explained that MNOs can provide mobile services directly or through MVNOs. The Government adopts a pro-competition policy that facilitates service providers in addition to network operators to operate in the market. In fact, it is a mandatory requirement in the assignment of Relevant 3G spectrum in 2001 that the 3G MNOs must open up at least 30% of their network capacity at a market-determined price for use by non-affiliated companies to operate as MVNOs. The Administration has been monitoring the market situation closely from 2001 onwards, and no regulatory intervention by CA (or the then Telecommunications Authority) has been

requested by industry participants. The 30% open network access requirement has not been imposed in the recent spectrum assignments and has also been withdrawn for the second generation spectrum assignees, as the market environment has changed and competition has been keen with more than 10 MVNOs. Nevertheless, the Subcommittee has urged CA to continue to monitor the market closely to prevent MNOs leasing out spectrum capacity at unreasonably high price, undermining consumers' interest.

18. As regards the network and service rollout requirement, the Administration has referred to an information memorandum for previous auction, which specified that in the case of mobile service provisioning, the successful bidders of the spectrum were required to roll out its network and services to provide a minimum coverage of 50% of the population within five years from the issue of the licence. To ensure compliance with the network and service rollout requirement, the licensee is required to lodge a performance bond with the authority concerned.

19. As HKT and CSL will not be allowed to take part in the forthcoming auction following their merger, members have enquired whether the Administration would lower the auction reserve price and the specified range of the SUF for RFR Spectrum.

20. The Administration has advised that despite the number of incumbent 3G operators taking part in the forthcoming auction is reduced, the overall number of bidders and hence competition would depend on how many new entrants would join the bidding. The Administration reiterates that the specified range of the SUF of the RFR Spectrum have been set with a view to reflecting the market values of the spectrum as far as practicable. In fact, in a keenly competitive telecommunications market like Hong Kong, mobile service charges are determined by market force instead of the amount of SUF paid by MNOs, which represents only about 3% of their annual total operating cost.

21. Two of the four MNOs attending the meeting with the Subcommittee have raised the concern that the minimum SUF payable by the incumbent 3G operators for the RFR Spectrum should be lowered to the reserve price of the Re-auctioned Spectrum, i.e. from \$66 million to \$48 million per MHz to avoid discriminating against them. The Administration has explained that the minimum SUF for RFR Spectrum and the auction reserve price are two separate concepts and they should not be compared directly. The former is the minimum fee an incumbent 3G operator has to pay if it exercises the right of first refusal to be re-assigned part of its current 3G spectrum holdings (i.e. without entering into any competitive process). On the other hand, auction reserve price aims to shed light on the possible value of the spectrum for kicking start the competitive bidding process.

22. The four MNOs have expressed concern that unlike the assignment of the Relevant 3G spectrum in 2001 whereby the majority of SUF was payable by the operators on an annual basis over 15 years, the SUF payment basis for spectrum auctions taken place since 2007, including the forthcoming one under the Three Regulations, has been changed to an upfront lump sum. The change in the payment method has resulted in an unintended tax consequence, as it triggered a change in the tax treatment of the SUF payment from tax-deductible revenue expenditure to non tax-deductible capital expenditure. The operators have indicated that the additional tax cost would inevitably have to be passed on to the consumers. They have requested that Cap. 106 be amended to explicitly state that the SUF payment should be made payable on an annual basis or tax-deductible.

23. The Subcommittee has noted that although MNOs have been aware of the upfront payment when they were consulted, the Inland Revenue Department has not expressed until recently its intention to treat this upfront payment differently from the previous annual payments. The Administration has advised that this is fundamentally a matter of tax policy which is an entirely separate subject outside the scope of the Three Regulations. The level of SUF aims to reflect the market value of spectrum as a scarce public resource. Tax treatment of SUF has never been a consideration of the Administration in working out the payment method of SUF. Operators concerned should seek assistance from its tax advisor or the Inland Revenue Department on queries or questions relating to tax treatment. In this connection, some members have suggested that the matter should be dealt with separately by the Panel on Financial Affairs. They also note that amendments proposing to revise the SUF level and/or payment method of SUF may be ruled against by the President due to charging effect.

Impact of the hybrid approach on service quality

24. The Subcommittee notes some deputations' concern about the hybrid approach that the degradation of customer service quality in terms of reduction in data download speed in 2016 when compared to 2012 will be estimated to be as high as 30% to 40% rather than the net average of 9% as anticipated by the Office of CA ("OFCA").

25. The Administration has stressed that the hybrid approach is not expected to have any adverse impact on the overall service quality of the entire mobile networks or 3G networks in Hong Kong. Having regard to the findings of the consultancy study on service impact commissioned by the Government and its own independent assessment, CA has considered that service continuity can be reasonably assured under the hybrid option, and any degradation in service quality that may ensue from a reduction in individual 3G spectrum holdings can

effectively be mitigated with the implementation of the appropriate mitigation measures.

26. On mitigation measures to cope with service degradation, the Administration has pointed out that spectrum utilization in Hong Kong is very dynamic and frequency spectrum in Hong Kong has generally been assigned based on the technology neutral principle. As at June 2014, the number of 4G service subscribers stands at 2.4 million, which is much smaller than the number of 3G service subscribers at 9.9 million. Yet, the amount of spectrum deployed for the provision of 4G services, i.e. 310 MHz, is about 80% more than that for 3G services at 170 MHz. In this connection, incumbent 3G operators which do not acquire the Re-auctioned Spectrum may reschedule their timetable for spectrum reform so as to meet the demand for 2G, 3G and 4G services and hence minimize any impact on service quality that may ensue. In addition, the incumbents which end up with a smaller amount of 3G Spectrum holding than before may mitigate the impact on service quality by incentivizing their 3G customers to migrate to the 4G networks, for example, through offer of integrated mobile data plans and promotion of 4G handsets. They may also review their 3G capacity leasing arrangements to other MNOs and MVNOs.

27. There is a concern that although there will eventually be much more 4G than 3G spectrum, the current number of base stations supporting 4G services is much smaller. According to the operators, there are sometimes lack of space to house the base stations for providing access to the congested areas like the mass transit railway ("MTR"), and in remote areas and along new highways.

28. The Administration advises that as the 4G spectrum has been assigned eight years after the 3G spectrum, it takes time for the 4G network to be fully rolled out. As regards areas such as MTR and newly developed areas/new highways such as the Hong Kong-Zhuhai-Macau Bridge, OFCA has been coordinating with relevant parties to facilitate mobile service access to these areas. Agreements have been made between MTR and operators for rolling out 4G services in new MTR lines under construction. As regards to the issue of lack of base station sites, the Administration has highlighted a direction relating to base stations that CA imposed when it gave consent to the proposed acquisition of CSL by HKT, and they were directed to notify OFCA and all other MNOs of any plan for the closure of any base station sites at least 90 days prior to the scheduled closures of the relevant sites to facilitate the taking up of the sites by other MNOs. In response to members' suggestion of extending the 90-day notification requirement by other MNOs, the Administration remarks that voluntary closure of base station sites by MNOs is rare. In case of lease termination by landlords, the base station sites can no longer be used.

Other issues

29. There is a concern why the title of 106X Amendment Regulation refers specifically to 3G mobile services. The Administration has advised that the original Regulation has been enacted in 2001 when the method of determining SUF applied only to spectrum providing 3G services. Along with the evolution of the mobile technologies and the technology neutral principle in spectrum assignment, the title of the New Regulation thus refers to spectrum in the 1.9 – 2.2 GHz Band. The title of the 106X Amendment Regulation does not have any substantive legal effect, it only serves as a label to identify, describe and give a name to the Regulation.

30. Some members have enquired about the trend of spectrum utilization. The Administration has advised that following the assignment of Relevant 3G spectrum in 2001, market response has been lukewarm until 2007-2008 when the first generation smartphone stimulated the switch from voice call to data services. 4G spectrum has been auctioned for the first time in 2009 when 4G handset was still in its infancy stage. It would take a few years for MNOs concerned to roll out the 4G network infrastructures fully and for consumers to migrate to 4G services. It is firmly believed that the Relevant 3G Spectrum would be refarmed for higher order uses during the new 15-year assignment term from 2016 to 2031. Moreover, the ITU World Radiocommunication Conference to be held in 2015 is expected to make known whether new radio spectrum will be released for the provision of mobile services. It is understood that manufacturers have already been investigating into the 5G technology. The introduction of new technology and new radio spectrum will certainly take place before 2031.

31. The Subcommittee notes the views of the incumbent 3G operators that competition in the mobile market could be promoted through spectrum trading. Members have enquired whether the Administration would study the changes in the technologies and market landscape in recent years, and consider conducting consultation in this regard. The Administration has advised that according to the relevant consultancy report, spectrum trading is a complicated subject requiring detailed research and feasibility study into the implementation issues, including issues of the regulatory framework and the problem of spectrum concentration. The Administration will brief the Panel in due course.

Recommendation

32. The Subcommittee supports the Three Regulations and does not propose any amendment to the Three Regulations.

Advice sought

33. Members are invited to note the deliberations of the Subcommittee.

Council Business Division 4
Legislative Council Secretariat
25 June 2014

**Subcommittee on Three Regulations under the Telecommunications
Ordinance (Cap. 106) Gazetted on 16 May 2014**

Membership list

Chairman

Hon Charles Peter MOK

Members

Hon WONG Ting-kwong, SBS, JP

Hon WONG Yuk-man

Hon Claudia MO

Hon MA Fung-kwok, SBS, JP

Hon KWOK Wai-keung

Hon SIN Chung-kai, SBS, JP

Dr Hon Elizabeth QUAT, JP

Hon Christopher CHUNG Shu-kun, BBS, MH, JP

(Total : 9 members)

Clerk

Ms Debbie YAU

Legal Adviser

Mr Kelvin LEE

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List of organizations which have given views to the Subcommittee

1. Hong Kong Telecommunications (HKT) Limited
2. Smartone Mobile Communications Limited
3. Hutchison Telephone Company Limited
4. China Mobile Hong Kong Company Limited
5. The Lion Rock Institute*

* oral representation only