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Paper for the House Committee meeting on 20 March 2009

**Report of the Subcommittee on Subsidiary Legislation
to Enable the Release of Spectrum for Expansion
of the Second Generation Mobile Service and Mobile TV Services**

Purpose

This paper reports on the deliberations of the Subcommittee on Subsidiary Legislation to Enable the Release of Spectrum for Expansion of the Second Generation Mobile Service and Mobile TV Services (the Subcommittee).

Background

Second generation mobile service

2. Mobile telephony services in Hong Kong have demonstrated significant growth in recent years. As of August 2008, the market penetration of mobile services surpassed 160%. To cope with the increasing traffic from mobile telephone users, Mobile Network Operators (MNOs) have requested for the release of additional radio spectrum to allow for expansion of the second generation mobile service.

3. The Office of the Telecommunications Authority (OFTA) issued a public consultation paper in January 2008 to seek comments from the industry and interested parties on the assignment of the available radio spectrum for public mobile telephone services and on the imposition of spectrum utilization fee (SUF) on the use of the radio spectrum concerned. Six submissions were received, and the respondents in general supported the proposal of releasing additional radio spectrum for such services and the imposition of SUF. On 4 July 2008, the Telecommunications Authority (TA) issued a statement promulgating that the TA had decided, amongst other things, to make available the radio spectrum in the 1800 MHz band for public mobile service.

4. According to the TA, there is only 4.8 MHz x 2 of radio spectrum available for assignment in the 1800 MHz Band and part of the radio spectrum has already been assigned and is used to provide coverage in the country parks and remote areas. The available radio spectrum is not sufficient for a new entrant to build a new network that can compete with the incumbent MNOs in terms of system capacity or coverage and quality of service. The TA will therefore assign the radio spectrum in the 1800 MHz Band to the incumbent MNOs for expansion of the second generation mobile service. The TA plans to conduct the spectrum auction within the first half of 2009.

Mobile TV services

5. The development of mobile TV services, which exemplifies multimedia convergence and opens up opportunities for more content and programming choices for the viewing public, is gaining momentum in the broadcasting and telecommunication sectors of Hong Kong. In addition to the digitization of the cable and satellite TV services, digital terrestrial television (DTT) service has been launched in December 2007. While third generation mobile telephony technology and mobile phones are already capable of receiving multimedia contents streamed to them (known as "streaming-type mobile TV"), point-to-multipoint broadcasting technologies for mobile reception (known as "broadcast-type mobile TV") are developing rapidly in overseas market. Technical trials on such technologies have also been conducted by some local operators. The broadcast-type mobile TV is more spectrum efficient when broadcasting audio-visual content to mobile devices, but involves allocation of additional frequency spectrum.

6. To facilitate the launch of mobile TV services in Hong Kong, the Administration conducted the first round of consultation in early 2007 to seek views from the public and the industry on the introduction and regulation of commercial mobile TV services in Hong Kong, with focus on four major regulatory aspects, namely, spectrum availability, spectrum allocation, spectrum assignment, and licensing arrangements. As the majority of the respondents in the first round of consultation supported an early introduction of mobile TV services in Hong Kong and a number of broadcasting and telecommunications operators had expressed interest in rolling out mobile TV services, the Administration prepared a draft implementation framework for broadcast-type mobile TV services for a second consultation in early 2008. The majority of the respondents to the second round of consultation accepted the proposed implementation framework. Broadcasting and telecommunications operators also indicated interest in introducing local broadcast-type mobile TV services and some of them had already tested a number of mobile TV technologies as facilitated by the OFTA. The Administration subsequently announced the implementation framework. The spectrum auction for mobile TV will be conducted within 2009.

The subsidiary legislation

7. In line with Government's market driven policy and the guiding principles under the Radio Spectrum Policy Framework (RSPF) promulgated in April 2007, the use of the relevant spectrum will be subject to the payment of SUF, the level of which is to be determined by auction, adopting the Simultaneous Multi-round Ascending (SMRA) method. To enable the release of relevant spectrum by auction and to impose SUF on the use of the relevant spectrum, the following three pieces of subsidiary legislation under the Telecommunications Ordinance (Cap. 106) were gazetted on 6 February 2009 and tabled at the Council meeting on 11 February 2009: -

- (a) Telecommunications (Designation of Frequency Bands subject to Payment of Spectrum Utilization Fee) (Amendment) Order 2009 (L.N. 20 of 2009);
- (b) Telecommunications (Level of Spectrum Utilization Fees) (Second Generation Mobile Services) (Amendment) Regulation 2009 (L.N. 21 of 2009); and
- (c) Telecommunications (Determining Spectrum Utilization Fees by Auction) (Amendment) Regulation 2009 (L.N. 22 of 2009).

8. It is the Administration's intention that the subsidiary legislation shall come into operation on 3 April 2009 subject to the completion of the negative vetting process.

Telecommunications (Designation of Frequency Bands subject to Payment of Spectrum Utilization Fee) (Amendment) Order 2009 (L.N. 20 of 2009)

9. The Order sets out the following amendments to designate:-

- (a) the frequency bands of 1780.1 – 1784.9 MHz paired with 1875.1 – 1879.9 MHz (Designated Frequency Bands (DFBs)) for provision of public mobile telephone service; and
- (b) the frequency multiplexes of 216.160 – 217.696 MHz, 217.872 – 219.408 MHz, and 678 – 686 MHz (Designated Frequency Multiplexes (DFMs)) for introduction of broadcast-type mobile TV services.

Telecommunications (Level of Spectrum Utilization Fees) (Second Generation Mobile Services) (Amendment) Regulation 2009 (L.N. 21 of 2009)

10. The Regulation specifies the following:-

- (a) to provide that the SUF payable by users of the spectrum which falls within the DFBs shall consist of an annual SUF and an upfront SUF;
- (b) to apply the same formula prescribed in Cap. 106AA to determine the amount of the annual SUF payable by the users of the spectrum which falls within the DFBs, i.e.:
 - (i) for each period of 12 months beginning with 30 September from 30 September 2009 to 29 September 2011, \$145 for every 1 kHz or part of every 1 kHz of the spectrum assigned for use by the relevant licensee;
 - (ii) for each period of 12 months beginning with 30 September from 30 September 2011 to 29 September 2021, 5% of the network turnover in the period of 12 months concerned; or \$1,450 for every 1 kHz or part of every 1 kHz of the spectrum assigned, whichever is the higher; and
- (c) to provide that the upfront SUF shall be determined by auction; and
- (d) to provide for that no SUF shall be applied to the use of the DFBs solely in the designated areas¹, which are to be prescribed by the TA.

Telecommunications (Determining Spectrum Utilization Fees by Auction) (Amendment) Regulation 2009 (L.N. 22 of 2009)

11. The Regulation specifies the method prescribed in Cap. 106AC (i.e. by auction adopting SMRA) to determine the amount of the upfront SUF payable by the users of the spectrum which falls within the DFBs and the DFMs.

The Subcommittee

12. At the House Committee meeting held on 13 February 2009, Members agreed to form a subcommittee to study the three pieces of subsidiary legislation. Dr Hon Samson TAM Wai-ho was elected Chairman of the Subcommittee. The membership list of the Subcommittee is in **Appendix I**. The Subcommittee has held two meetings with the Administration and received views of the industry players. A list of organizations which have given views to the Subcommittee is in **Appendix II**.

¹ The designated areas includes those areas defined in the Country Parks Ordinance (Cap. 208) and the three special locations in Sai Kung, Robin's Nest and the Lai Chi Wo Village in Sha Tau Kok respectively which do not fall within the country park areas.

13. The scrutiny period of the three pieces of subsidiary legislation has been extended to 1 April 2009 by resolution of the Council on 11 March 2009.

Deliberations of the Subcommittee

Spectrum availability and allocation

14. The Subcommittee notes that the Government has proposed to release one out of the two available frequency multiplexes in UHF Band (470 – 806 MHz) and two out of the four available frequency multiplexes in Band III (174 – 230 MHz) for the introduction of broadcast-type mobile TV services, which will enable the provision of a maximum of some 26 mobile TV programme channels. The remaining frequency multiplexes (one in the UHF Band and two in Band III) will be reserved for future DTT, public service broadcasting (PSB) and digital audio broadcasting (DAB) services or other possible electronic communications services when technology further evolves. The Subcommittee also notes that some industry players have recently indicated interest in providing DAB services, and that two Band III multiplexes are reserved to cater for the development of DAB as new technology will enable each band III multiplex to support more than seven channels. The Administration undertakes to discuss with the sound broadcasting industry on the future development of DAB.

15. The Subcommittee has made reference to the experience of a number of overseas jurisdictions on the launch of mobile TV services and noted that audio and visual qualities of UHF Band and Band III for such services are broadly similar. In this connection, the Subcommittee has discussed with the Administration whether it would consider releasing all multiplexes in UHF Band for mobile TV services, while using the Band III frequency spectrum for DAB services, as such arrangement will be more beneficial to consumers and preferable in terms of spectrum management.

16. The Administration has explained the rationale for reserving the remaining frequency multiplexes for future broadcasting services such as DAB, PSB and DTT services. The Administration has stressed that specification of certain technical standard will leave the market with no choice, while the switching off of analogue TV broadcasting will release more channels in UHF Band for new services such as the fourth generation mobile service and other telecommunications services. The Administration also points out that the implementation framework for development of mobile TV services in Hong Kong, including spectrum allocation, is accepted by the public and also the industry in the two rounds of consultation conducted in 2007 and 2008.

17. The Subcommittee has asked whether the Administration has examined the feasibility of using other frequency spectrum such as L Band (1466 – 1480 MHz) for mobile TV services. According to the Administration, the use of L Band for

such services is not popular. The local market response is that this frequency spectrum should be reserved subject to further development of the worldwide market.

Spectrum assignment and licensing arrangement for mobile TV services

18. On mobile TV services, the Subcommittee has discussed with the Administration whether the assignment of frequency spectrum through auction will be advantageous to current broadcasting and MNOs/large financial conglomerates, and create entry barrier for new market players and financially less viable groups.

19. The Administration has advised that spectrum allocation by way of an auction reflecting the market value of spectrum as a scarce public resource is a fair, open and efficient way of spectrum assignment. This is in line with Government's market driven policy and the guiding principles under the RSPF. The Administration had made reference to the experience of South Korea, and proposed to adopt a "Pro-mobile TV" approach whereby successful bidders will be required to use at least 50% of the transmission capacity for the provision of mobile TV services while the remaining capacity can be used to provide other ancillary services, such as DAB or datacasting. Services can be provided either by the successful bidders direct, by service provider(s) who hires the remaining transmission capacity from the successful bidders, or a combination of both. The 50% threshold will be subject to review five years after the initial frequency assignment, taking into account market developments and emergence of new technology and services. To encourage different/new players to provide a wider variety of services in the mobile TV service market, the multiplexes in the UHF Band and Band III will be offered as two separate packages and no bidder will be allowed to acquire more than one package from the auction.

20. As regards the different purposes of licence fee and SUF, the Subcommittee notes that license fee is levied on a full-cost recovery principle to cover the licence administration costs incurred by the OFTA, while SUF is imposed for the right to use the radio spectrum as a scarce public resource and the fee is paid to the general revenue. To ensure open and fair competition, a reserve price will be specified and the terms and conditions of the auction will be prescribed in the form of gazette notices by the Secretary for Commerce and Economic Development and the TA respectively nearer the time of the auction. Regarding the licence fees, the Administration has advised that the same fee structure will be applied to the successful bidders, irrespective of whether they are new entrant or incumbent MNOs.

21. The Subcommittee notes that a frequency multiplex of 8 MHz in UHF band is capable of carrying about 20 mobile TV channels, while a Band III frequency multiplex can only carry three mobile TV channels. Members have asked whether the differences in transmission capacity will constitute unfair competition among service providers. The Administration has advised that the SUF to be determined

by auction will reflect the market value of the relevant frequency spectrum and the business potential perceived by the successful bidder. Moreover, it is expected that mobile TV operators will compete on service charges, quality of TV programmes and availability of ancillary services.

22. The Subcommittee has suggested that apart from the SUF to be determined by auction, consideration should be given to including other criteria such as programme content and quality as a licence obligation/condition to help ensure the programme standard. The Administration has advised that mobile TV service is a nascent and relatively personal service. The regulation of mobile TV programming and programme content will be subject to general laws and self-regulatory codes of practice promulgated by the industry. As such, a light-handed regulatory approach is proposed to allow mobile TV operators to provide a wider variety of programmes targeting the mobile TV market.

Technical standards

23. As regards the hand-held device capable of supporting mobile TV services in both UHF Band and Band III, the Subcommittee notes that combined hand-held devices supporting both multiplexes may be available in future having regard to market development and the emergence of new technology. One industry player who has given views to the Subcommittee has expressed concern whether both UHF and Band III should be used for mobile TV services in a small market/place like Hong Kong, noting that some overseas jurisdictions only adopt one technical standard for broadcast-type mobile TV.

24. The Administration has advised that, under the market-led and technology-neutral approach, the market should have the choice to select the technical standards for broadcast-type mobile TV services. Nevertheless, the Administration will keep in view the developments in this respect, similar to the experience in the implementation of DTT.

25. The Subcommittee has made reference to the mobile TV service launched by British Telecom (BT) in the United Kingdom in September 2006. Members note that BT used a variant of Digital Multimedia Broadcasting standard known as DAB-IP over the Band III DAB network. It was supported by only one type of handset and only 5 programme channels were provided. As the European Commission advocates the use of another technical standard for mobile TV in Europe, the mobile TV service provided by BT was terminated in end 2008 after operating for about a year due to unsatisfactory customer take-up. Noting the experience of BT, the Subcommittee is of the view that the Government should provide guidance on the choice of technical standards to safeguard public interest, cost effectiveness and proper utilization of spectrum.

Other issues

26. Mr Ronny TONG has criticized that there is no comprehensive strategy and vision for the development of broadcasting and telecommunications in Hong Kong. He finds it regrettable that frequency spectrum is assigned as a commodity for auction proceeds rather than addressing the needs of minority groups and the demand for public access channels.

27. The Administration has explained that there is a comprehensive spectrum allocation plan to meet the current and future needs and aspirations of the community and the industry. In accordance with the RSPF, a market-based approach will be used for spectrum assignment whenever the TA considers that there is likely to be competing demand for the spectrum.

Recommendation

28. The Subcommittee has completed scrutiny of and generally support the three pieces of subsidiary legislation.

Advice sought

29. The House Committee is invited to note the deliberations of the Subcommittee.

Council Business Division 1
Legislative Council Secretariat
18 March 2009

**Subcommittee on Subsidiary Legislation to Enable the Release of Spectrum
for Expansion of the Second Generation Mobile Service and Mobile TV Services**

Membership List

Chairman	Dr Hon Samson TAM Wai-ho, JP
Members	Hon Timothy FOK Tsun-ting, GBS, JP
	Hon LEE Wing-tat
	Hon WONG Ting-kwong, BBS
	Hon Ronny TONG Ka-wah, SC
	Hon Paul TSE Wai-chun
	(Total : 6 members)
Clerk	Ms YUE Tin-po
Legal Adviser	Ms Clara TAM
Date	27 February 2009

**Subcommittee on Subsidiary Legislation to Enable the Release of Spectrum
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List of organizations which have given views to the Subcommittee

1. G-mobile Limited
2. Revenco International Limited
3. Wave Media Limited
4. Broadcast Australia