

LEGISLATIVE COUNCIL BRIEF

Telecommunications Ordinance
(Chapter 106)

FRAMEWORK FOR DEVELOPMENT OF MOBILE TELEVISION SERVICES

INTRODUCTION

At the meeting of the Executive Council on 16 December 2008, the Council ADVISED and the Chief Executive ORDERED that broadcast-type mobile TV services should be developed in Hong Kong, according to the proposed implementation framework set out at Annex.

JUSTIFICATIONS

Mobile TV Services

2. The expression “mobile TV services” generally refers to the provision of television programme services by wireless transmission of audio-visual content for reception by mobile phones or other portable devices. The inherent characteristics distinguishing mobile TV services from conventional TV services are mobility and personalised consumption. Currently, the 2.5G and 3G mobile telecommunications platforms allow operators to deliver audio-visual content on demand through streaming technologies¹. Such services, often known as “streaming-type mobile TV”, ride on the frequency spectrum that have already been allocated to the existing 2.5G and 3G mobile telecommunications licensees. This allows mobile multimedia content to be transmitted in a point-to-point manner. However, there are a number of limitations with this approach, not least the fact that the quality of such service may degrade when the number of receiving mobile devices used at the same time in the vicinity exceeds the capacity of the relevant network.

¹ Provision of streaming-type mobile TV service is not separately licensed other than through the mobile carrier licences held by the mobile phone operators.

3. Internationally, communications operators have been working to provide a truly mobile TV service that can deliver audio-visual content to a critical mass of viewers. A number of point-to-multipoint technologies, with higher transmission capacity, have been developed to capitalise on the emerging market opportunities. The introduction of such services, often known as “broadcast-type mobile TV”, requires additional frequency spectrum. The commercial deployment of competing technologies is now taking place in a number of economies, including the United States, the United Kingdom, Germany, Italy, Japan and South Korea. Many other jurisdictions are conducting technical trials to pave the way for the commercial operation of broadcast-type mobile TV services.

Relevant Spectrum for Mobile TV and Other Digital Broadcasting Services

4. According to overseas experience, four frequency bands are suitable for digital broadcasting services, including broadcast-type mobile TV services. They are:

- (a) UHF Band (470MHz – 806MHz);
- (b) Band III (174MHz – 230MHz);
- (c) L Band (1466MHz – 1480MHz); and
- (d) part of S Band (2635MHz – 2660MHz).

5. In respect of UHF Band, this may be used to provide either digital terrestrial television (DTT) or broadcast-type mobile TV services. In Hong Kong, we have identified a total of five multiplexes² in the UHF Band. The two free-to-air TV broadcasters have been allocated three of the multiplexes to allow them to provide DTT services. Originally reserved on technical grounds pending the launch of DTT, the two remaining multiplexes are now available for the provision of more digital broadcasting services including DTT and/or broadcast-type mobile TV service following the successful implementation of DTT. A frequency multiplex of 8 MHz in UHF Band is capable of carrying about 20 mobile TV channels³.

² A frequency multiplex is a digital transmission channel which combines programme materials and other data in a digital form for transmission via a frequency channel.

³ This is based on the technical trials conducted in Hong Kong with the use of DVB-H and MediaFLO technologies, the prevalent mobile TV technologies in Europe and the US operating in this band. Alternatively, one UHF Band multiplex may accommodate one to two high-definition television channels or four to eight standard-definition television channels based on national DTT standard or European DVB-T standard.

6. Band III has been used for digital audio broadcasting (DAB) services in Europe for some time now but the use of this frequency band for broadcast-type mobile TV services is also now feasible. A Band III frequency multiplex of 1.5 MHz can carry three mobile TV channels or seven DAB channels, or a mix of both⁴. In Hong Kong, four frequency multiplexes in Band III will be available from 2009 onwards⁵. Overseas experience has shown that Band III frequencies are acceptable substitutes when the UHF Band frequencies are not available.

7. As regards L Band, the use of it for mobile TV services is not popular. The local market response is that this frequency band should be reserved subject to further development of the worldwide market. As regards S Band, it is mainly used for satellite-based mobile TV services for a wide regional coverage. The local market response is that this band should not be allocated for the time being but should be reserved keeping in view the development in satellite-based mobile TV services on the Mainland.

The Implementation Framework

8. Taking into account the outcome of the consultation exercises and in accordance with the market-led, technology-neutral and facilitating regulatory approach, we have mapped out an implementation framework. This is set out at **Annex**. A summary of the proposal is set out in the ensuing paragraphs.

Spectrum Availability and Allocation

9. The availability of suitable frequency spectrum is a prerequisite for the introduction of broadcast-type mobile TV services in Hong Kong. Overseas experience has shown that UHF Band frequencies are popular for broadcast-type mobile TV services while Band III frequencies are acceptable substitutes when the UHF Band frequencies are not available. Having regard to technological advancement, public views and market response received as well as overseas experience, we propose to allocate half of the available frequencies in UHF Band and Band III for the introduction of broadcast-type mobile TV services. We will reserve the

⁴ The prevailing digital broadcasting technologies using Band III are Eureka-147 DAB developed in Europe for digital radio, and T-DMB which is a mobile TV technology developed in South Korea based on DAB. A frequency multiplex of 1.5MHz in Band III can carry three T-DMB mobile TV channels or 7 DAB radio channels, or a combination of one to two mobile TV channels and two to three digital radio channels.

⁵ One Band III multiplex is immediately available. The other three multiplexes are being occupied by existing radio users but band vacation has been planned with a view to releasing them in phases in 2009.

remaining half for other broadcasting services. In other words, we propose to release one out of the two available frequency multiplexes in UHF Band and two out of the four available frequency multiplexes in Band III, which will enable the provision of a maximum of some 26 mobile TV programme channels⁶. The remaining frequency multiplexes (one in the UHF Band and two in Band III) will be reserved for future DTT or DAB services, or other possible electronic communications services when technology further evolves.

10. We propose to adopt a “pro-mobile TV” approach whereby we allocate the available frequency spectrum primarily for the provision of mobile TV services. This was generally accepted by the industry and the public during the consultation process. Successful bidders will be required to use at least half of the transmission capacity for the provision of mobile TV services while the remaining capacity can be used to provide other non-mobile TV services, such as DAB or datacasting. Such value-added services could be provided either by the successful bidders themselves direct, or by others who hire the remaining transmission capacity from the successful bidders. The 50% threshold will be subject to review five years after the initial frequency assignment, taking into account market developments and the emergence of new technology and services.

Spectrum Assignment

11. In line with the established spectrum policy framework⁷, which has provided a fair and efficient way to assign frequency spectrum to potential operators, we propose to follow the market-based approach whereby frequency spectrum for broadcast-type mobile TV should be allocated by auction. Prospective broadcast-type mobile TV operators will be subject to the payment of a spectrum utilisation fee, which will be determined by auction, in addition to the necessary licence fees which cover the licence administration costs.

12. To encourage a wider variety of services in the mobile TV service market to be provided by different players, we propose to offer the following as two different packages in the auction:

⁶ A frequency multiplex of 8 MHz in UHF Band is capable of carrying about 20 mobile TV channels. A Band III frequency multiplex of 1.5 MHz can carry three mobile TV channels.

⁷ The spectrum policy framework was promulgated in April 2007. The guiding principle under the framework is to use a market-led approach in spectrum management when there are competing commercial demands for the frequency spectrum. This should generally lead to most economically and technically efficient, and hence most valuable, use of the frequency spectrum.

- (a) the UHF Band multiplex; and
- (b) the two Band III multiplexes.

Individual party will not be allowed to acquire more than one package from the auction.

Licensing Arrangements for Mobile TV Services

13. Under the established technology-neutral regulatory approach, there are separate licensing regimes for regulating “conveyance” and “content” of TV services. Establishing and maintaining a distributing network for transmitting local broadcast-type mobile TV services (i.e. conveyance) will require a unified carrier licence to be issued under the Telecommunications Ordinance (TO)(Cap. 106). In case the successful bidder of a designated frequency spectrum rents out its transmission capacity to a mobile TV service provider, the latter needs a public non-exclusive telecommunications services licence for the provision of mobile TV services and other permitted telecommunications or value-added services to the public.

14. In relation to programming, the Broadcasting Ordinance (BO) (Cap. 562) currently does not regulate television programme services for mobile reception (i.e. reception on the move not related to any specified premises) in Hong Kong unless the services are not primarily targeting Hong Kong⁸.

15. The prospective local broadcast-type mobile TV service is a nascent and relatively personal service. It is unlikely to have the same pervasive impact as conventional TV at this stage, and can be likened to broadcasting services on the Internet. As such, we propose to adopt a light-handed approach in regulating its content. Both streaming-type mobile TV services in operation and the proposed broadcast-type mobile TV services should therefore be governed by general laws. We do not propose to amend the BO to license local broadcast-type or streaming-type mobile TV services or to impose cross-media ownership restrictions on the providers of these services or their associates. However, we will require the operators to develop codes of practice for self-regulation and will monitor the situation closely. This regulatory approach accords with international best practices and was accepted by the public and the industry in the two rounds of consultation.

⁸ The services which the BO regulates include “domestic free television programme services,” “domestic pay television programme services” and “other licensable television programme services”, which are services available for reception by audiences in specified premises, and “non-domestic television programme services”, which are services not primarily targeting Hong Kong.

Licensing Arrangements for Other Value-added Services

16. On the other hand, other telecommunications or value-added services, if provided alongside mobile TV services either by the mobile TV operators themselves or by others who hire the transmission capacity, shall continue to be subject to the relevant licensing arrangements under relevant existing legislation. In particular, DAB services would be subject to the existing sound broadcasting licensing regime as contained in Part IIIA of the TO.

Geographical Coverage

17. Currently, we have an established mechanism for prospective operators to access the existing hilltop broadcasting facilities through commercial negotiation and OFTA's adjudication if necessary. In this light and taking into account the scarcity of frequencies for broadcast-type mobile TV services, we consider it reasonable to impose a baseline coverage requirement of 50% of the population on the provision of broadcast-type mobile TV services, as in the case of the coming auction for broadband wireless access services. The geographical coverage will be secured by means of performance bonds to be imposed upon the prospective mobile TV operators.

18. We do not propose to impose heavier coverage requirement (e.g. territory-wide coverage obligation in the case of conventional free-to-air TV) so that the nascent service can be developed at its own pace and in response to market demand. We will also leave coverage in tunnels as well as the mass transit railway network to be decided by prospective broadcast-type mobile TV operators based on commercial consideration, similar to the regulatory practice in many overseas countries

IMPLICATIONS OF THE PROPOSAL

19. The proposal is in conformity with the Basic Law, including the provisions concerning human rights. It has no civil service implication. The proposal to facilitate the development of mobile TV services in Hong Kong is in line with the sustainability principle of achieving a market-based economy that provides the resources to meet the needs and aspirations of the population, both now and in the future.

20. As for financial implications, there will be additional revenue for Government when the frequency spectrum is auctioned in 2009. The spectrum utilisation fee receivable will be determined by auction.

21. The prospective mobile network operators need to hold a unified carrier licence or a public non-exclusive telecommunications services licence issued under the Telecommunications Ordinance. The exact additional revenue to be generated in respect of the unified carrier licence would hinge on whether the mobile TV spectrum is to be taken up by new or existing unified carrier licensees. Assuming two new unified carrier licences would be granted, the annual licence fees should be around \$6.7 million (comprising fixed fee, spectrum fee, base station fee and customer connection fee). In case that the mobile TV spectrum is assigned to existing unified carrier licensees, the annual licence fee is estimated to be around \$670,000 as the licensees have already paid the fixed fee and customer connection fee under existing licences. The licence fee payable by the operators will by and large recover the full cost incurred by OFTA in regulating the services and should be subject to review on the basis of the full-cost recovery principle. OFTA will also absorb the extra resources required for coordination with the industry on the implementation details.

22. As regard economic implications, the introduction of mobile TV services will be conducive to widening programme choices for mobile communications users and enhancing development of the local media and telecommunications industry as a whole. It will also bring in capital investment for the broadcasting network and associated content production facilities. The incremental economic activities and employment opportunities thus generated will largely hinge on the extent of service coverage which in turn will be based on the business plans of the successful bidders as well as the spill-over along the supply chain from content production, network conveyance to service provision and innovation. Ancillary services such as DAB and datacasting may also be offered to meet public demand.

23. As for environmental implications, the hilltop transmitting stations of new mobile TV networks are expected to be accommodated in the DTT infrastructure established by the two free-to-air television broadcasters. As such, civil engineering works at hilltop sites by new mobile TV operators will be of a small-scale and confined within the site boundary of the existing DTT infrastructure and should satisfy the relevant statutory requirements including those under the Environmental Impact Assessment Ordinance (Cap. 499).

PUBLIC CONSULTATION

24. We first consulted the public on this subject in January to April 2007. Taking into account international best practices and the feedback collected in the first consultation, we prepared a draft implementation framework for broadcast-type mobile TV services for a second consultation in January to April 2008. The majority of the respondents to the second consultation accepted the proposed implementation framework. Broadcasting and telecommunications operators have indicated interest in introducing local broadcast-type mobile TV services and some of them have already tested a number of mobile TV technologies with the assistance of the Office of the Telecommunications Authority (OFTA). The submissions to the two public consultations are available on the web site of the Communications and Technology Branch of the Commerce and Economic Development Bureau at <http://www.cedb.gov.hk/ctb/eng/paper/index.htm>.

PUBLICITY

25. The Administration will hold a press conference to promulgate the implementation framework and issue a press release on 22 December 2008. A spokesperson will be made available to answer enquiries from the media and the public. We will also brief the Legislative Council Panel on Information Technology and Broadcasting.

ENQUIRIES

26. Enquiries about this brief can be directed to Mr Kevin Choi, Principal Assistant Secretary for Commerce and Economic Development (Communications and Technology) A, on 2189 2236 or at kevinchoi@cedb.gov.hk.

Communications and Technology Branch
Commerce and Economic Development Bureau

22 December 2008

**Framework for Development of
Broadcast-type Mobile TV Services in Hong Kong**

(A) Spectrum Availability

The following frequency multiplexes (i.e., a frequency channel for digital transmission) in the relevant bands of frequency spectrum should be released for the introduction of broadcast-type mobile TV services in Hong Kong:

- (i) Two frequency multiplexes of 1.5MHz (216.160MHz – 217.696MHz and 217.872MHz – 219.408MHz, also known as Channel Nos. 11A and 11B) in Band III; and
- (ii) One frequency multiplex of 8MHz (678MHz – 686MHz, also known as Channel No. 47) in UHF Band.

(B) Spectrum Allocation

The spectrum to be released in (A) above should be allocated primarily for development of broadcast-type mobile TV services. While at least 50% of the transmission capacity should be used to provide mobile TV services, the operators may harness the remaining capacity of their mobile TV networks for delivery of other services such as digital audio radio (DAB) and datacasting services. To allow further flexibility, the mandatory percentage of transmission capacity dedicated for mobile TV services will be subject to review by OFTA within five years from the assignment of the frequency multiplexes to successful bidders.

(C) Spectrum Assignment

The spectrum to be released primarily for mobile TV services in (A) above should be assigned through auction with a pre-qualification process. The spectrum utilization fee (SUF) should be determined by auction. Bidders should propose obligations to roll out mobile TV services taking into account their deployment plan of the relevant mobile TV transmission technology. Such milestones will be tied with performance bonds at an appropriate amount imposed on the successful bidders.

To enhance the variety of services in the mobile TV market, the two Band III multiplexes and the UHF Band multiplex are to be auctioned in two separate packages, and an individual party will not be allowed to acquire more than one package from the auction.

(D) Licensing Arrangements

Under the Telecommunications Ordinance (TO) (Cap. 106), an operator of the network used to transmit mobile TV services via the assigned spectrum is required to obtain a unified carrier licence¹. In case that the successful bidder rents out its transmission capacity to another mobile TV service provider, the latter is required to obtain a public non-exclusive telecommunications services licence for the provision of mobile TV services and other permitted telecommunications services to the public.

Regarding the regulation of mobile TV programming, the content of mobile TV, either local broadcast-type or streaming-type, should be subject to regulation by general laws but not the Broadcasting Ordinance (Cap. 562)². To enable self-regulation, the industry will be required to develop codes of practice on provision of mobile TV services before service commencement. The codes should include, among others, the requirement of conditional access with a view to protecting public morals and children.

If a mobile TV operator intends to offer DAB service as well, the DAB service should be provided under a sound broadcasting licence to be issued under Part IIIA of the TO, and regulated under the TO and Part IV of the Broadcasting Authority Ordinance (Cap. 391). It will also be subject to the relevant radio codes of practice, as in the case of existing sound broadcasting services.

¹ For an incumbent carrier, it may opt to merge its existing carrier licence(s) with the new unified carrier licence.

² A provider of mobile TV services that are not primarily targetting Hong Kong will need a non-domestic television programme service licence under the BO.

(E) Access to Hilltop Broadcasting Sites

Sharing of existing hilltop broadcasting site facilities is supported and will be subject to commercial agreement while the TA could intervene and adjudicate if mutual agreement cannot be reached.

(F) Geographical Coverage

As prospective mobile TV service operators will be able to set up transmitting stations by sharing the hilltop broadcasting sites and facilities of terrestrial television broadcasters, provision of coverage for 50% of the population within 18 months from the grant of unified carrier licence should be set out as a licence obligation for the operators.

Coverage in tunnels as well as the mass transit railway network will not be mandatory. Mobile TV service operators may negotiate with the railway company and tunnel operators for coverage based on commercial consideration.

(G) Technical Standards

We should adopt a market-led and technology-neutral approach by leaving the market to select the technical standards for broadcast-type mobile TV services.

(H) Timetable

We aim to auction the frequency spectrum and license local broadcast-type mobile TV services in 2009.