

**For information**

**On 12 March 2007**

**Legislative Council Panel on Information Technology and Broadcasting**

**Submissions Received in the Public Consultation on the  
Licensing of Spectrum in the 850 MHz Band  
to Enable the Provision of CDMA2000 Services**

**Purpose**

This paper informs Members of the submissions received in response to the public consultation launched by the Office of the Telecommunications Authority (“OFTA”) on 27 October 2006 concerning the licensing of spectrum in the 850 MHz Band to enable the provision of CDMA2000<sup>1</sup> services. The preliminary view of the Office of the Telecommunications Authority (“OFTA”) and the intended way forward for the licensing of CDMA2000 services using the said spectrum are also discussed in this paper.

**Background**

2. The 3-year migration period granted to the licensee providing the IS-95 CDMA mobile services (“CDMA services”) will expire on 20 November 2008. OFTA initiated a consultation on 27 October 2006 to solicit views from the industry and other interested parties on the need and the way forward to release spectrum to enable the continuity of the CDMA services in Hong Kong after 20 November 2008.

3. The essence of the proposals put forward in the consultation paper was introduced to the Members at the Panel Meeting dated 11 December 2006 (*LC Paper No. CB(1)435/06-07(04)*). The consultation ended on 27 December

---

<sup>1</sup> CDMA (Code Division Multiple Access) is one of the key mobile standards in the world. IS-95 CDMA service, which is based on an older version of the standard, is available in Hong Kong since 1992. CDMA2000 is the latest version of the standard and is able to support the provision of 3G mobile services. CDMA2000 is backward compatible with the IS-95 CDMA standard.

2006 with a total of 19 submissions received. The respondents include all five incumbent mobile network operators, one fixed telecommunications network service operator, one local industry association, two individuals as well as ten overseas CDMA2000 service providers and equipment suppliers. The full list of respondents who have made submissions to the consultation is given in **Annex A**.

## **General Responses from the Public on the Key Proposals of OFTA**

### *Issue of a Single New Licence in the 850 MHz Band*

4. In respect of the proposal by OFTA to issue a single new licence in the 850 MHz band to enable the continued provision of the CDMA services in Hong Kong after 20 November 2008, it has received general support from all the overseas CDMA2000 service providers and equipment suppliers. These overseas CDMA2000 service providers come from all over the world, including the Mainland of China, the US, Japan, South Korea, Indonesia, New Zealand and Thailand. They unanimously agreed that, consistent with Hong Kong's status as Asia's World City and the telecommunications hub in the Asia-Pacific region, CDMA roaming services should continue to be provided in Hong Kong. As an important destination for business and leisure travels, Hong Kong should ensure that its telecommunications infrastructures and services are compatible with the rest of the world.

5. A Mainland mobile network operator pointed out that the existing CDMA roaming service provided in Hong Kong to its subscribers is limited and suffers from problems like unsatisfactory network coverage, high drop call rate and poor voice quality. According to this operator, Hong Kong is the destination of more than half of its outbound CDMA subscribers, and the number of complaints from these subscribers when they roam to Hong Kong is on the rise. This operator considered that such experience could tarnish the image of Hong Kong as Asia's World City.

6. This operator also advised that, following the issue of a CDMA2000 licence in Macao in October 2006, the technologically more advanced CDMA2000 services are already available in Greater China, with the exception of Hong Kong. If CDMA2000 services are also available in Hong Kong, CDMA2000 services will be available throughout Greater China, thus facilitating the development of the service and the related industrial sector with synergy effects.

7. Among the local industry, two network operators were supportive of the proposal to release the available spectrum in the 850 MHz band for the provision of CDMA2000 services. Another operator was neutral as to whether the spectrum vacated from the existing IS-95 CDMA services should be made available for a new licence, but it would like the Government to make sure that a clear and certain long term spectrum policy should be in place so that potential investors can make informed decision on spectrum bidding.

8. The other incumbent mobile network operators disagreed with the proposal and objected to the release of the vacated spectrum for a new licence prior to the completion of the consultations on Spectrum Policy Review (“SPR”) and Fixed-Mobile Convergence (“FMC”). They were of the opinion that the “Policy First” principle should be observed such that the licensing of the spectrum, as well as the related issues on the amount of Spectrum Utilisation Fee (“SUF”) and the licence conditions, should be determined holistically within the context of the SPR.

9. Furthermore, they argued that the mobile market is already facing over-competition and it would be severely affected by the introduction of a further licence. They also claimed that there is no evidence that the market requires a specific CDMA2000 licence. The proposal to make available spectrum for the CDMA services is in fact not a market-driven approach. One operator further considered that it is only necessary for OFTA to license a CDMA network dedicated for carriage of roaming traffic only catering for inbound visitors. In particular, that operator suggested that one possible solution is to permit the operation of the existing IS-95 CDMA service beyond

the expiry date to provide the required roaming service.

*Payment of Spectrum Utilisation Fee (“SUF”) and Setting of Auction Reserve Price*

10. On the payment of SUF, while the majority of the respondents did not object to the proposal to adopt an one-off SUF lump sum payment scheme, there were divided views on the anticipated amount of SUF, and hence the auction reserve price, for the use of the available spectrum in the 850 MHz band by the proposed new licensee.

11. A respondent considered that the amount of the reserve price in the proposed open auction should be set at exactly the same level as the amount of SUF paid by the existing 3G licensees during the auction of the 3G spectrum in 2001. It drew reference to recent spectrum auctions conducted in the US, which showed that a similar block of spectrum still cost a substantial amount of money comparable to the level paid in 2001 during the so-called “IT Bubble”. Another respondent shared similar views that the SUF issue should be considered in light of its impacts on competition and the consumers as a whole. It argued that there may be distortions to the market and to the regulatory framework if different levels or structures of SUF are used.

12. There was also a view that the issue of SUF should be resolved holistically within the context of the SPR as the amount of the reserve price cannot be determined appropriately and the bidders cannot properly assess their business case in the absence of a clear understanding of the long term spectrum policy. Another respondent considered that restricting the available spectrum for the provision of CDMA services only will reduce the value of the spectrum and even an open auction will not reflect its true value. This will upset the current level playing field.

13. On the contrary, some respondents considered that the auction reserve price should be considerably lower than that of the 2G and 3G licensees, based on the facts that the market situation has become less bullish compared to 2001

when the 3G auction was conducted, the proposed new licensee is having a slower start compared with the other 3G licensees, and lastly, the global market size for the CDMA2000 standard is comparatively smaller than that of the WCDMA standard, which is being adopted by the four incumbent 3G licensees in Hong Kong.

#### *Open Network Access (“ONA”) Requirements*

14. Some respondents supported OFTA’s proposal not to impose the ONA requirements on the proposed new licensee and also to withdraw the ONA requirements as applicable to the existing 2G and 3G licensees altogether. However, other respondents considered that there is no concrete evidence supporting the proposal and the fact that the absence of any request from the industry for regulatory intervention does not necessarily imply the ONA requirement can be withdrawn. They argued that the proposal is also unfair to the Mobile Virtual Network Operators (“MVNO”) and the content providers as the ONA requirement does provide regulatory protection available to the MVNOs and content providers against discrimination in the market. Withdrawal of the ONA requirement will remove this regulatory protection and the MVNOs and the content providers may be subject to unfair and discriminatory treatment by the mobile network operators.

#### **Preliminary Views of the OFTA in Response to the Submissions**

15. After considering all the submissions and comments received from the consultation, the preliminary views of OFTA are given in the following paragraphs.

#### *Issue of a Single New Licence in the 850 MHz Band*

16. OFTA notes the general support by the international community to the proposal to make available spectrum in the 850 MHz band to enable the provision of CDMA2000 services. As prescribed in the consultation paper on

the proposed spectrum policy framework, one of the proposed objectives of spectrum policy is to strengthen Hong Kong's strategic position as a world city and the gateway between the Mainland of China and the world. This policy objective, if adopted, will serve as one of the guiding strategies for the TA to follow in the management of the radio frequency spectrum. OFTA is of a preliminary view that it is necessary to make spectrum available to ensure the continued availability of the CDMA2000 services in Hong Kong to achieve this proposed policy objective. The TA will take into account the latest development of the SPR when he decides the way forward for licensing spectrum in the 850 MHz band for the provision of CDMA2000 services.

17. OFTA also notes the objection from some of the incumbent mobile network operators concerning the proposal to release the spectrum for the provision of CDMA2000 services. OFTA disagrees that the exercise to release the relevant spectrum should be withheld until the resolution of every issue under the SPR. As pointed out in the consultation paper, the SPR will involve multiple implementation phases. Issues such as secondary trading of spectrum and spectrum liberalisation require further debates and deliberation. It will take time before these issues can reach a conclusion. In view of the ongoing developments of the telecommunications industry and the need for new CDMA2000 services by November 2008, it is unreasonable and undesirable to withhold or delay the release of spectrum altogether until completion of the whole SPR exercise and resolution of all related issues, as this would hamper the introduction of advanced and innovative communications services in Hong Kong. To cater for rapid technological and market developments, it is inevitable that regulatory policies, including spectrum management policies, should evolve over the licence term of spectrum. Having said that, OFTA will ensure that, in offering the spectrum in the 850 MHz band for bidding, a comprehensive bidding document will be available setting out the relevant terms and conditions for the use of the spectrum which a potential bidder would reasonably expect to be informed of before it makes bidding decisions.

18. Concerning the allegations of "over-competition" in the mobile market, OFTA is of the preliminary view that when the vacated spectrum is made

available for auction, it is open to the interested parties, including incumbent mobile network operators, to make the commercial decision as to whether or not to bid for the spectrum. In making such a decision, the market situation, including the level of competition, will be an important factor for the interested investors to take into account. If no bid is received, OFTA will withdraw the spectrum. Consistent with the market-driven approach, OFTA's role in this exercise is to provide an opportunity for interested investors to enter the mobile market of Hong Kong.

#### *Payment of SUF*

19. The amount of SUF payable by the proposed new licensee will be an important consideration for potential investors who will need to develop the business case to ensure the viability of the new licence, and also for the incumbent market players who look for the maintenance of a level playing field. Mindful that the amount of SUF should therefore be determined through a market-driven and competitive process, OFTA has recommended the conduct of an open auction to determine the amount of SUF and to whom the new licence will be granted. Logically, the level and structure of the SUF, and the mode of payment, for a particular auction exercise has to reflect the market situation and investment climate prevailing at the time of the auction. As such, new spectrum auction exercises need not adopt the same parameters that were determined in previous auction exercises, but should be subject to fresh assessments. If the reserve price and structure of SUF being set to reflect the prevailing environment are considered to be favourable by the market, any perceived advantage should automatically be reflected in the auction process where bidders will be more aggressive to place bids and the bid price should adequately reflect the prevailing market value of the spectrum. The auction process is by itself the ultimate safeguard to ensure that the amount of SUF is appropriate and commensurate with market valuation.

#### *Setting of Auction Reserve Price*

20. In the proposed spectrum auction, the Administration will need to

prescribe the auction reserve price. The auction reserve price should represent the minimum acceptable value for the Administration to assign the right to use the spectrum for providing the CDMA2000 services. The appropriate level of the auction reserve price should therefore be considered meticulously.

21. In this regard, OFTA has commissioned an independent consultant to provide advice and recommendations on, *inter alia*, the calculation methodologies and mathematical models for determining the amount of the auction reserve price, on the assumption that the 850 MHz band for the provision of CDMA2000 services will be released for auction by end 2007. Subject to the Administration's consideration of the recommendation of the consultant, the reserve price and the auction procedure will be published nearer the time when the auction is conducted.

#### *ONA Requirements*

22. OFTA notes the views which are against the removal of ONA requirements. In the existing four 3G licences issued in 2001, the ONA requirements have been incorporated as a licence obligation. This obligation should have been taken into account by the 3G licensees when they bid for the spectrum in 2001. The same ONA requirements have also been extended to all the 2G licensees who are required to comply with the requirements five years after the commencement of their new licences issued in 2005 and 2006. This obligation has also been made known to the industry including potential MVNOs and content providers. OFTA accepts that more time should be allowed for the industry to consider the relevant issues in detail before drawing any conclusion as to whether or not the ONA requirements under all the existing 2G and 3G licences should be withdrawn. OFTA considers that the ONA requirements in all the existing 2G and 3G licences should be retained for the time being.

23. As regards the application of the ONA requirements in the proposed CDMA2000 licence, OFTA considers that the telecommunications market in Hong Kong has developed to such a stage that *ex ante* regulation (i.e. regulation



before the event) should be withdrawn unless market failure exists or is expected to exist after withdrawal of the regulation. OFTA therefore inclines not to impose the ONA obligation in the CDMA2000 licence. If there is market failure because of the absence of the ONA obligation in the CDMA2000 licence, OFTA can still have resort to the powers under the Telecommunications Ordinance, such as section 36A, which empowers the TA to determine the terms and conditions of interconnection between the CDMA2000 network and MVNO after taking into account the factors concerning government policy, consumer interest, investment, competition, etc. under section 36A(10). The absence of the ONA obligation as an *ex ante* regulation will be reflected in the possibly higher bidding price for the spectrum – therefore a level playing field will be maintained between the operators with and without the ONA requirements as an *ex ante* obligation.

## **Way Forward**

24. Subject to the TA's final decision on the proposed release of spectrum to enable the provision of CDMA2000 services, two pieces of subsidiary legislations under the Telecommunications Ordinance, which are subject to negative vetting by the LegCo, shall be made to enable the release the spectrum by auction. First, an order shall be made by the TA to designate the spectrum in the 850 MHz to be subject to payment of SUF. Second, a new regulation shall be made by the Secretary for Commerce, Industry and Technology ("SCIT") to prescribe the method for determining the SUF by auction. It will also empower the SCIT to specify the reserve price and the TA to specify the auction rules. The detailed legislative proposals of the subsidiary legislations are set out in **Annex B**.

25. Subject to the completion of the negative vetting process of the relevant subsidiary legislation, OFTA intends to publish the terms and conditions of the auction around August 2007 with a view to conducting the proposed auction and issuing the licence by October 2007.

**Office of the Telecommunications Authority**  
**12 March 2007**

**List of Respondents to the Public Consultation on the  
Licensing of Spectrum in the 850 MHz Band to  
Enable the Provision of CDMA2000 Services**

1. Mr. Lo Siu Man
2. China Unicom Limited
3. Dr. John Ure
4. Verizon Wireless
5. Qualcomm Inc.
6. CDMA Development Group
7. The Society of External Telecommunications Service Providers Ltd.
8. Sprint Nextel Corporation
9. Hong Kong CSL Limited and New World PCS Limited
10. KDDI Corporation
11. SmarTone Mobile Communications Limited
12. China Mobile Peoples Telephone Company Limited
13. SK Telecom
14. Wharf T&T Limited
15. Mandarin Communications Limited and SUNDAY 3G (Hong Kong) Limited
16. Hutchison Telephone Company Limited
17. PT. Mobile-8 Telecom
18. Telecom New Zealand Limited
19. CAT Telecom

**Subsidiary Legislations to Enable the Release of Spectrum for  
the Provision for CDMA2000 Services**

To enable the release of spectrum for the provision for CDMA2000 services by auction and to impose spectrum utilization fee (SUF) on relevant spectrum, two pieces of subsidiary legislation are required:

- (i) an amendment to the Telecommunications (Designation of Frequency Bands Subject to Payment of Spectrum Utilization Fee) Order (Cap.106Y) (the Order), to be made by the Telecommunications Authority (TA) under Section 32I(1) of the Telecommunications Ordinance (Cap.106) (the Ordinance), to designate additional frequency bands in which the use of spectrum is subject to payment of SUF; and
- (ii) a new regulation, to be made by the Secretary for the Commerce, Industry and Technology (SCIT) under section 32I(2)(b) of the Ordinance, to prescribe the method for determining the SUF payable for the frequency bands.

2. The detailed legislative proposals of the above subsidiary legislations are set out below.

***Amendment to Telecommunications (Designation of Frequency Bands Subject to Payment of Spectrum Utilization Fee) Order***

3. The TA considers that the use of spectrum as a scarce public resource for provision of commercial public telecommunications services should be subject to payment of SUF. Therefore, he intends to make an amendment to the existing Order to designate the relevant frequencies to be released to enable the provision of CDMA2000 service to be subject to payment of SUF.

## **New Regulation for Determination of Spectrum Utilization Fee by Auction**

### ***Auction coupled with pre-qualification***

4. The relevant frequencies shall be assigned by means of a process consisting of pre-qualification followed by an auction. The pre-qualification process is to weed out bidders with insufficient financial strength to take part in the auction. The auction aims at eliciting financial bids from bidders, the highest among whom would be assigned the relevant frequencies. The highest bid he pitches would be the SUF to be charged.

5. The SUF for the relevant frequencies shall be in the form of upfront one-off lump sum payment for the duration of the licence.

### ***The Auction***

6. The auction shall be in the form of an ascending-bid auction. After satisfying the pre-qualification requirements, bidders will participate in the auction and place bids on the amount of the upfront one-off lump sum payment for the relevant frequencies. As in the 3G licensing exercise, SCIT may specify the minimum fee by a notice published in the Gazette. The auction will start from the minimum fee specified by SCIT.

### ***Single bidder***

7. If there is only one qualified bidder satisfying the pre-qualification requirements, that bidder shall be the successful bidder and the SUF shall be the minimum fee specified by SCIT in the Gazette.

### ***Auction rules***

8. Modelling on the approach adopted in the 3G licensing exercise, it is proposed that the TA shall be empowered under the regulation made by the SCIT to specify the terms and conditions of the auction by notice in the Gazette.

These terms and conditions may include details of the pre-qualification, connected bidder rules, auction procedures, etc. The TA intends to engage a consultant in due course to advise on the terms and conditions of the auction. The TA may, in addition to a Gazette notice, publish an information memorandum.