

**For information  
On 11 December 2006**

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

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

**Purpose**

This paper briefs Members on the consultation exercise 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 service. The Executive Summary of the Consultation Paper is at **Annex**.

**Background**

2. The 3-year migration period granted to the licensee providing the IS-95 CDMA<sup>1</sup> mobile service (CDMA mobile service) will expire on 20 November 2008. The Telecommunications Authority (TA) considers it necessary to initiate a consultation 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 mobile service in Hong Kong after 20 November 2008.

**Enabling the Provision of the CDMA2000 Service in Hong Kong**

3. With due regard to the spectrum policy objectives proposed by the Commerce, Industry and Technology Bureau (CITB), the TA is minded to strengthen Hong Kong's strategic position as a world city and the gateway between the Mainland of China and the world by facilitating the provision of key services in Hong Kong which are deployed, or will be deployed

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<sup>1</sup> Code Division Multiple Access

globally or in the Mainland of China. Indeed, the compatibility of telecommunications infrastructures and services with the Mainland of China and the world should be maintained so as to ensure the availability of seamless roaming telecommunications services for visitors while they are in Hong Kong and for our own consumers when they travel abroad. There are also wider benefits brought about through harmonisation with the Mainland's use of spectrum for popular mobile services.

4. The TA recognizes that the CDMA2000 standard is amongst one of the key 3G mobile standards in the world and CDMA mobile service is in heavy use in the Mainland and over the world. At present roaming service is available for visitors with CDMA and CDMA2000 handsets. When the 3-year migration period granted to the licensee providing the CDMA mobile service expires on 20 November 2008, the Administration considers that there is a need for the continual provision of the service. There are a number of strategic reasons behind this consideration. Firstly, as Asia's World City, Hong Kong should provide visitors from all over the world with first-class mobile services. Secondly, it will strengthen Hong Kong's strategic position as the gateway between the Mainland and the world. Thirdly, the availability of mobile platforms using all the major cellular standards of the world, including the CDMA2000 standard, will enable the local industry to acquire experience in operating the services and in the development of new applications and content for all these platforms. All these will reinforce Hong Kong's position as the leading telecommunications hub in the region.

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

5. In the consultation paper, the TA proposes that a frequency block with a maximum bandwidth of 10 MHz x 2 in the 850 MHz band (825 – 835 MHz paired with 870 – 880 MHz) will be made available for a single licence to provide CDMA2000 service after 20 November 2008. However, since the amount of spectrum for the new licence will have implications on the amount of Spectrum Utilisation Fee (SUF) that the new licensee has to pay and the business plan, the TA intends to leave it to the industry to advise him on the optimal amount of frequency spectrum that should be deployed.

## **Payment of Spectrum Utilisation Fee (SUF)**

6. The use of the relevant frequency block should be subject to the payment of the SUF. The TA proposes the adoption of a one-off lump sum SUF, the amount of which is to be determined through an open auction in the form of multiple round ascending auction (MRAA). The amount of the reserve price and the bid price increment will be set nearer the time of the auction.

7. In making the above proposal, the TA is aware of the fact that the 3G auction conducted in 2001 employed a royalty scheme in which the SUF was calculated by multiplying the “Royalty Percentage” to the Network Turnover<sup>2</sup>, subject to certain minimum annual fees, payable annually by the 3G licensees over the licence period of 15 years. The “Royalty Percentage”, and in turn the minimum amount of annual fees, were to be determined through auction. However, the 3G licences were granted at the reserve price since the number of applicants was equal to the number of blocks of spectrum for 3G licences available for auction.

8. As stated in the Legislative Council Brief issued on 13 February 2001, the main consideration for adopting the royalty payment method was to lower the financial burden of successful 3G licensees, on the assumption that the SUF payment as the result of a competitive auctioning exercise at that time would be extremely high. Secondly, the 3G market at that time was highly uncertain, both in terms of demand from consumers and availability of services. The royalty payment method allowed 3G licensees to spread the payment of SUF over the whole licensing period and thus reduced the upfront financial burden. Thirdly, the guaranteed, minimum royalty payment requirement would minimise credit risks of the Government and reduce the costs that may be passed on to the customers. Finally, a royalty payment based on Network Turnover would also allow the Government to share the upside of the future 3G services. It was based on all these considerations and constraints that the Government decided to adopt the royalty payment method in 2001.

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<sup>2</sup> For the purpose of SUF calculation, Network Turnover is defined as the revenue arising from or attributable to the provision of any telecommunications services over any telecommunications network using the frequency bands to which the SUF relates.

9. Today, many of the above considerations may no longer be valid or relevant. Prospective licensees are expected to bid more rationally. It is unlikely that the resultant SUF will be as high as in 2001 when spectrum for 3G licences was auctioned and therefore the bid will subsequently become a heavy financial burden to the successful bidder. In addition, the 3G market is now much more mature than what it was five years ago. Proven network infrastructure and customer equipment are widely available from the major equipment providers in the world. Full-fledged 3G services have been launched around the globe with attractive service features at affordable prices. The industry has already accumulated a wealth of experience in the implementation and operation of 3G networks and in devising business strategies for marketing the services. The TA believes that the SUF determined through an open auction at this point in time will be able to reflect more accurately and rationally the true commercial market value in the auction of the spectrum in the 850 MHz band and the financial burden of the prospective licensee should not be an overriding concern.

10. Based on the experience in the regulation of 3G licensees, it is evident that the royalty payment method is not without disadvantages. For example, both the Government and the 3G licensees have to bear high administrative costs in implementing accounting separation to ensure that all relevant revenues are included in the calculation of royalties. As a consequence, the TA finds it justified to re-visit the whole arrangement and re-evaluate various possible options, including one-off payment, for the current licensing exercise.

11. The proposed one-off lump sum SUF is a popular and simpler alternative to the royalty payment. The amount of SUF determined by this method equally reflects the market value of the spectrum and safeguards the Government's revenue in SUF, but all the administrative hassles in determining the amount of Network Turnover can be avoided.

### **Determination of the Reserve Price**

12. Concerning the amount of reserve price for the one-off lump sum SUF payment, it should represent the base economic value for using the

spectrum for implementing mobile services. The amount of the reserve price will be set by the Administration nearer the time of the auction. For this purpose, the Administration is now considering the commission of a consultancy study on the determination of the reserve price.

13. According to the experiences in other territories, there are a number of approaches in estimating and setting the reserve price. One approach is to make reference to the level set in the last 3G auctioning exercise held in 2001 in Hong Kong and adjustments are to be made to take into account of the change in the market and the perceived change in spectrum value after the burst of the IT bubble in 2001. Reference may also be made to the recent auctions of returned 3G licences in other countries to assess the change in the value of the spectrum. Alternatively, the base price may be based on recent international price of comparable spectrum with adjustments to take into account local factors/considerations such as the differences in population, GDP, licence period and the market situation.

### **Pre-qualification Requirements**

14. For the pre-qualification exercise, the TA proposes that bidders are required to lodge, *inter alia*, a deposit of specified amount which may be forfeited if the bidder violates the bidding rules or fails to take up the licence after winning the auction.

### **Eligibility of Incumbent Carriers or Their Related Parties**

15. As proposed in the consultation paper, the incumbent 2G and 3G licensees and their related parties will be permitted to take part in the auction and there should not be any bidding restriction in the form of a spectrum cap, i.e. there is no upper limit on the total amount of spectrum that can be held by a licensee and its related companies. The TA also proposes that any individual company or group of companies may not enter more than one bid.

16. The TA is of the preliminary view that *ex post* regulation of joint bidding activities would be proportionate to the risk of any adverse effect to competition in telecommunications markets. The TA therefore proposes not to require any joint bidder to seek his consent prior to participation in the auction, i.e. no *ex ante* rule applies.

### **Applicable Regulatory Framework and Licence Conditions**

17. The successful applicant will be granted a Unified Carrier Licence (UCL)<sup>3</sup> if it can be put in place in time, otherwise the successful applicant will be granted a Mobile Carrier Licence. In both cases, the new licensee will be subjected to the same set of conditions as the incumbent 2G and 3G licensees.

18. At present, the 2G and 3G licensees are required under their licences to open at least 30 % of their network capacity for access by non-affiliated Mobile Virtual Network Operators (MVNOs) or content providers. This so-called Open Network Access (ONA) requirement was first introduced in the last 3G licensing exercise in 2001 in order to meet certain government policy objectives, including introduction of greater competition at the content, application and service level and enabling parties who do not have the resources to bid for, or who have failed to obtain, the 3G licence the opportunity to participate in the 3G market. The same obligation has been imposed on 2G licensees upon expiry of their then existing licences and the grant of the new Mobile Carrier Licences on the ground of preserving a level playing field.

19. Though the ONA requirement has been in force for nearly five years, the TA has not received any request for regulatory intervention concerning the ONA requirement so far. The 3G market is beginning to take off in Hong Kong and numerous non-affiliated application and content

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<sup>3</sup> Under the current licensing system, two separate licences are required for a carrier to provide both fixed and mobile services. As Fixed-Mobile Convergence (FMC) is imminent that a wide range of voice, data and multimedia services can then be provided over common core networks, in a consultation paper issued on 21 September 2005, the Telecommunications Authority (TA) proposed to introduce a new carrier licence, the Unified Carrier Licence (UCL), for licensing of both fixed and mobile networks/services. In the second consultation paper on FMC entitled "Deregulation of Fixed-Mobile Convergence" issued by the TA on 14 July 2006, interested parties were asked to provide further comments on the proposal to introduce the UCL. The whole consultation exercise is not yet concluded.

providers are now providing services to the mobile users through the 3G platforms. The situation is the same for the 2G platforms. As such, the market has taken care of itself and the mandatory ONA requirement appears to be unnecessary. Furthermore, the fixed carrier licensees do not have ONA obligations. The original rationale for drawing a distinction between fixed networks and mobile networks was that the latter need allocation of a limited public resource of spectrum. With increasing number of wireless platforms using spectrum made available to the market (including the 850 MHz band which is the subject of this consultation exercise), the rationale for using regulation to mandate ONA becomes increasingly questionable. With fixed-mobile convergence, the same set of economic principles should apply to using regulation to mandate access to networks. Following these, the TA is of the preliminary view that the ONA requirement, which requires mobile carriers to open at least 30% of their network capacity for access by non-affiliated Mobile Virtual Network Operators or content and service providers, should not be imposed in the current licensing exercise. Furthermore, to maintain a level playing field, the TA proposes that the ONA requirements as applicable to the existing 2G and 3G licensees should also be withdrawn.

20. To enable the continuity of the CDMA mobile service after 20 November 2008, the TA proposes in the consultation paper that the new licensee should be obliged to roll-out its network and provide service no later than 1 year after the grant of the licence to the main business district plus other strategic locations like the MTR and KCR railway systems, the airport and other border control points. The new licensee will be required to lodge a performance bond to guarantee compliance with the network roll-out and service provision obligations. The details of these licence obligations and the amount of performance bond will be announced nearer the time of the auction. Furthermore, similar to the existing 2G mobile carrier licences, it is proposed that a licence condition will be imposed requiring the new licensee to refuse the provision of service to any person who possesses or uses a mobile handset which is stolen or suspected stolen.

## **Way Forward**

21. The consultation period will end on 27 December 2006. The TA

will carefully consider all the submissions from respondents to the consultation paper and take them into account in reaching his final decision on the licensing of the CDMA2000 service. The Administration preliminarily intends to gazette the necessary subsidiary legislation to be made under section 32I of the Telecommunications Ordinance (Cap. 106), including an order to designate the relevant spectrum to be subject to SUF and the regulation prescribing the auction rules, in the second quarter of 2007 for negative vetting by the Legislative Council. The TA will then publish the bidding document and the application form for information of the interested parties in the third quarter of 2007, and conduct the proposed auction and issue the licence some time around October 2007.

**Office of the Telecommunications Authority**  
**11 December 2006**

**Licensing of Spectrum in the 850 MHz Band  
to Enable the Provision of CDMA2000 Service**

**Consultation Paper**

**27 October 2006**

**EXECUTIVE SUMMARY**

**Introduction**

The 3-year migration period granted to the licensee providing the IS-95 CDMA<sup>4</sup> mobile service will expire on 20 November 2008. The Telecommunications Authority (TA) considers it necessary to initiate a consultation 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 mobile service in Hong Kong after 20 November 2008.

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

2. The TA proposes that a frequency block with a maximum bandwidth of 10 MHz x 2 in the 850 MHz band (825 – 835 MHz paired with 870 – 880 MHz) will be made available for a single licence to provide CDMA2000 mobile service after 20 November 2008.

**Payment of Spectrum Utilisation Fee**

3. The use of the relevant frequency block should be subject to the payment of the Spectrum Utilisation Fee (SUF). The TA proposes the adoption of an one-off lump sum SUF, the amount of which is to be determined through an open auction in the form of multiple round ascending auction (MRAA). The amount of reserve price and bid price increment will be set nearer the time of the auction.

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<sup>4</sup> Code Division Multiple Access

### **Pre-qualification Requirements**

4. For the pre-qualification exercise, the TA proposes that bidders are required to lodge with the Government, *inter alia*, a deposit of specified amount which may be forfeited if the bidder violates the bidding rules or fails to take up the licence after winning the auction.

### **Eligibility of Incumbent Carriers or Their Related Parties**

5. Incumbent 2G and 3G licensees and their related parties will be permitted to take part in the auction and there should not be any bidding restriction in the form of a spectrum cap i.e. there is no upper limit on the total amount of spectrum that can be held by a licensee and its related companies. The TA also proposes that any individual company or group of companies may not enter more than one bid.

6. The TA is of the preliminary view that *ex post* regulation of joint bidding activities would be proportionate to the risk of any adverse effect to competition in telecommunications markets. The TA therefore proposes not to require any joint bidder to seek his consent prior to participation in the auction i.e. no *ex ante* rule applies.

### **Applicable Regulatory Framework and Licence Conditions**

7. The successful applicant will be granted a Unified Carrier Licence (UCL) if it can be put in place in time, otherwise the successful applicant will be granted a Mobile Carrier Licence. In both cases, the new licensee will be subjected to the same set of conditions as the incumbent 2G and 3G licensees.

8. The TA is of the preliminary view that the Open Network Access (ONA) requirement, which requires mobile carriers to open at least 30% of their network capacity for access by non-affiliated Mobile Virtual Network Operators or content and service providers, should not be imposed in the current licensing exercise. Furthermore, to maintain a level playing field, the TA proposes that the ONA requirements as applicable to the existing 2G

and 3G licensees should also be withdrawn.

9. To enable the continuity of the CDMA mobile service after 20 November 2008, the TA proposes that the new licensee should be obliged to roll-out its network and provide service no later than 1 year after the grant of the licence to the “Golden Bowl Area” plus other strategic locations like the MTR and KCR railway systems, the airport and other border control points. The new licensee will be required to lodge a performance bond to guarantee compliance with the network roll-out and service provision obligations. The details of these licence obligations and the amount of performance bond will be announced nearer the time of the auction. Furthermore, similar to the existing 2G mobile carrier licences, it is proposed that a licence condition will be imposed requiring the new licensee to refuse the provision of service to any person who possesses or uses a mobile handset which is stolen or suspected stolen.

### **Timeline**

10. The TA intends to conduct the auction some time around early October 2007 and to grant the licence by end of October 2007. The TA will publish the bidding document and application form for information of the interested parties around August 2007.

### **Invitation of Comments**

11. The TA would welcome views and comments on the proposals contained in this consultation paper on or before 27 December 2006.

**Office of the Telecommunications Authority**  
**27 October 2006**