

**Auction of Radio Spectrum in the 850 MHz, 900 MHz and 2 GHz Bands  
for Provision of Public Mobile Telecommunications Services  
Questions and Answers**

*The Telecommunications Authority (the “Authority”) has received questions in relation to the Information Memorandum published on 10 December 2010. The Authority now under paragraph F.2.1 of the Information Memorandum sets out his responses to the questions.*

*Terms not otherwise defined herein shall have the same meaning ascribed thereto in the Notice issued by the Authority on 10 December 2010 (the “Notice”), or as the case may be, in Annex I “Glossary of Terms” of the Information Memorandum.*

**LICENSING (LG)**

**LG.1 Regarding paragraph C.4.2 of the Information Memorandum, the Successful Bidders of Frequency Bands A and B will bear the responsibility to mutually resolve the interference between these Frequency Bands, and the priority of use will be given to GSM-R system(s) for railway operation and then base stations with an earlier date of installation.**

- (a) Will the Authority consider the installation of standard filters to prevent interference as part of the licence requirement for Frequency Bands A and B?**
- (b) There is a potential for intermittent interference from Frequency Band B Rx to Frequency Band A Tx performance given the operator of Frequency Band B has no control over customer handset models nor customers’ locations in respect of the operator of Frequency Band A. How does the Authority propose to deal with this situation?**

Ans. Regarding (a), there is provision of a guard band of 2.5 MHz between Frequency Bands A and B. Interested parties should take note that the same guard band has been used since the nineteen eighties for local mobile network implementation. In particular, this guard band was used before July 2005 to separate the GSM900 service and the DAMPS service, which operated at frequencies below 887.50 MHz. While interference between these networks did happen occasionally in the past, the mobile network operators (MNO) concerned were able to coordinate commercially and operationally to resolve the interference. Hence, this guard band is considered adequate for protection between

the base stations operating in these two bands. The Authority has also received support that the 2.5 MHz guard band should provide sufficient separation between the two bands in the submissions to the public consultation carried out in November 2009 for assignment of the concerned spectrum.

As set out in paragraph C.4 of the Information Memorandum, where the need arises, the two Licensees operating in Frequency Bands A and B are required to take all reasonable measures to prevent and resolve any interference to each other. The Authority does not intend to mandate the installation of filters by any Licensee (or both of them). Rather, the Authority considers that it would be far more cost effective and efficient for the two Licensees to coordinate with each other on the planning of their base stations and day-to-day operational issues. The two Licensees should work out between themselves the principles for coordinating the locations of their base stations before they rollout their networks. If necessary, the Authority would be ready to provide assistance and advice.

Regarding (b), all MNOs are strictly required to use their own frequency assignments only. Likewise, the mobile handsets of customers of a particular MNO can only operate with the frequency assignments that belong to that MNO. The Authority considers that the possibility of mutual interference between customer equipment of different MNOs, or interference between customer equipment of the Licensee that operates at Frequency Band B and the base station of the Licensee that operates at Frequency Band A, to be rather remote and, if any, the interference should only be transient in nature.

**LG.2 When will the Frequency Bands be assigned to the Successful Bidder(s) in this auction?**

Ans. The Frequency Bands will be assigned under the Licence to be granted to the Successful Bidder(s). According to past experience, the Licence will be issued to the Successful Bidder(s) within one to two months after the completion of the Bidding Stage (if there should be more than one Qualified Bidder) or after the Application Dates (if there is only one Qualified Bidder and no Bidding Stage will be held). Potential Bidders should take note that part of Frequency Band A is being used by an incumbent MNO for provision of public services on a temporary basis. But the whole of the Frequency Band A will be made available for assignment to the Successful Bidder on 17 February 2011.

## **NETWORK ROLLOUT (NR)**

**NR.1 Regarding paragraph C.6.1 of the Information Memorandum, how can a Successful Bidder, who is also an incumbent licensee, demonstrate to the satisfaction of the Authority that the newly acquired Frequency Band has served the purpose of expanding its existing network in order to fulfill the network rollout requirement? Will the Authority provide guidelines in this respect?**

Ans. If the Successful Bidder is an incumbent MNO and it wishes to fulfill the rollout requirement by making use of the newly acquired spectrum for expanding its existing network, it needs to provide documentary evidence to the satisfaction of the Authority that the acquired spectrum has actually been deployed and implemented for use in its existing network, either for the purposes of increasing the network capacity or for expanding the radio coverage with new base stations. Such evidence may include, among other things, a list of base stations which have been equipped with active radio channel equipment programmed with the frequency carriers of the acquired spectrum for use by its customers. The Authority may conduct physical inspection of these base stations or field measurements for verification purpose.

## **OTHERS**

**OT.1 What methods will the Authority apply to calculate the spectrum utilization fee after the expiry of assignment of the Frequency Bands?**

Ans. Interested parties should take note of the following points specified in the Radio Spectrum Policy Framework <sup>1</sup> (the “Framework”) promulgated by the Government in April 2007:-

- (a) There is no legitimate expectation that there will be any right of renewal or right of first refusal of spectrum assignment upon the expiry of the existing assignment under the Ordinance.
- (b) The decision whether a new assignment, with the same or varied radio frequencies, should be given to the spectrum assignee would be made and notified to the spectrum assignee within a reasonable time before the expiry of its spectrum assignment or

---

<sup>1</sup> [http://www.cedb.gov.hk/ctb/eng/telecom/topical\\_b.htm](http://www.cedb.gov.hk/ctb/eng/telecom/topical_b.htm)

after receipt of its application by Authority as it is applicable in the circumstances, after taking into account the spectrum policy objectives set out in the Framework as well as all other relevant factors, including but not limited to any other public interest considerations.

- (c) If a spectrum assignment is to be varied or withdrawn before the assignment expires, the spectrum assignee to be affected will be notified before the variation or withdrawal is to take place in accordance with sections 32H(3) and (4) of the Ordinance. For this purpose, the Authority may state minimum notice periods for different types of spectrum assignments. In the case of spectrum assignment to a carrier licensee for the provision of mobile or wireless carrier services, a notice period of not less than three (3) years before the date of variation or withdrawal would be given insofar as it is practicable in the circumstances. If a spectrum assignment is to be renewed with different radio frequencies assigned, or not renewed upon the expiry of an assignment, notification would be given as mentioned in paragraph (b) above. If the circumstances permit, the minimum notice periods to be stated by Authority would also apply in relation to these changes or non-renewal.

Interested parties should also take note that in his Statement “Minimum Notice Periods for Variation or Withdrawal of Spectrum Assignments”<sup>2</sup> issued in 31 January 2008, the Authority states that, insofar as it is practicable in the circumstances, the following minimum notice periods would be given for variation or withdrawal of spectrum assignments to a carrier licence upon and before their expiry:-

- (i) subject to paragraph (ii) below, a notice period of not less than three (3) years would be given;
- (ii) a notice period of not less than two (2) years would be given where the spectrum is for operation of the network other than for connection between the network and the customers.

The Authority will review the arrangement for re-assignment of the Frequency Bands, including the payment of spectrum utilization fee (“SUF”), upon the expiry of an existing assignment taking into account the guiding principles of the Framework, the prevalent market situation, the need for a minimum notice period of three (3) years about the new assignment (with the same or varied radio frequencies)

---

<sup>2</sup> <http://www.ofta.gov.hk/en/tas/spectrum/ta20080131.pdf>

and all other relevant facts and circumstances relating to the Frequency Bands. As specified in the Framework, the SUF would be determined by the market if it is to be re-assigned through market means after the expiry of the current assignment. For spectrum not re-assigned through market means, the SUF will be set by the Government under section 32I(2) of the Ordinance.

**Office of the Telecommunications Authority**  
**6 January 2011**