

**Auction of Radio Spectrum in the 2.5/2.6 GHz Band**  
**for the Provision of Wireless Broadband Services**  
**Questions and Answers**

*The Communications Authority (the “Authority”) has received questions in relation to the Information Memorandum published on 21 December 2012. The Authority hereby sets out under paragraph F.2.1 of the Information Memorandum its responses to the questions.*

*Terms not otherwise defined herein shall have the same meaning ascribed thereto in the Notice issued by the Authority on 21 December 2012 (the “Notice”), or as the case may be, in Annex D “Glossary of Terms” of the Information Memorandum.*

**AUCTION ARRANGEMENTS AND LOGISTICS (AL)**

**AL.1    Regarding paragraph D.6.20 of the Information Memorandum, would the Authority confirm that, in any Round subsequent to Round 1, a Bidder will only be deemed to have submitted a Waiver if it has at least one Waiver remaining?**

Ans.    Affirmative. Deemed Waiver will only be allowed in the event that the Bidder has at least one Waiver remaining. That said, as stated in paragraph D.6.42 of the Information Memorandum, where the number of Eligibility Points (“EPs”) attributed to all Standing Highest Bids of the Bidder at the end of the immediately preceding Round is equal to the number of EPs attributed to the Bidder in the current Round, Waiver will not be applicable altogether.

**AL.2    Can a Bidder submit a Valid Bid and a Waiver in the same Round?**

Ans.    No. In the first Round, a Bidder must submit a Valid Bid for at least one Frequency Band. In any subsequent Rounds, a Bidder is not permitted to submit a Waiver along with placing Bids for one or more Frequency Bands in the same Round. Please refer to paragraphs D.6.18 to D.6.20 of the Information Memorandum for more details.

**AL.3 Will the Bidding Stage end in the following scenarios?**

**(a) Bidders have Waivers on hand but they did not submit Valid Bid, Withdrawal or Waiver in a Round.**

**(b) All Bidders take no action except one submitted a Withdrawal.**

Ans. As stated in paragraph D.6.46 of the Information Memorandum, the Bidding Stage will end where there is a Round in which no Valid Bid, Withdrawal, or Waiver (including deemed Waiver) is submitted by any Bidder. Therefore, for scenario (a), the Bidding State will end even though one or more Bidders may still have some of their Waivers left unused. For scenario (b), the Bidding Stage will continue as one of the Bidders has submitted a Withdrawal.

**AL.4 Could the Authority provide guidance on the range of price increments that it intends to use during the auction?**

Ans. The Authority will set and adjust the price for each Frequency Band in each round of bidding as it thinks appropriate in order to facilitate the smooth conduct of the Bidding Stage in accordance with the auction rules. Paragraphs D.6.11 to D.6.12 of the Information Memorandum provides guidance on the general approach which will be used by the Authority in this matter. Please also refer to the Auction Worked Examples in Annex C for step-by-step illustration of the Bidding Stage and the application of the auction rules.

**AL.5 Can the Bidder use Java 6 instead of Java 7 when accessing the Internet-based software platform given Java 7 was reported to have a critical security vulnerability?**

Ans. The concerned vulnerability of Java 7 does not affect the security of the Internet-based software platform as long as the Bidder's computer has got the latest update of Java 7 installed. Nevertheless, Bidder is reminded to use dedicated and "safe" computer to access the software platform i.e. the computer should be checked to be free from malware and reasonable security measures should be in place (e.g. the computer has not been used to access suspicious web sites, personal firewall has been turned on, latest patches have been applied to the browser and the underlying operating system etc.).

Alternatively, Bidders can use Java 6, which does not suffer from the same vulnerability as Java 7 and is compatible with the software

platform.

**AL.6 Does the Authority have any guidance on performance variance between different browsers (e.g. FireFox, Chrome, Safari and Internet Explorer 9)? Is there a particular browser that is recommended or that works better with the Internet-based software platform?**

Ans. The Internet-based software platform works on a wide range of operating systems and Internet browsers compatible with Java. Nevertheless, Bidders are recommended to use Internet Explorer, which has been thoroughly tested by the Office of the Communications Authority in past auctions.

### **LICENSING (LG)**

**LG.1 Per paragraphs C.1.1 and C.2.1 of the Information Memorandum, each Successful Bidder will be issued a Unified Carrier Licence (“UCL”) associated with the right to use the Frequency Bands:**

- **Can this right (including the operation of radio base stations) subsequently be leased to another network operator? If so, under which conditions or restrictions?**
- **Can UCL holders swap Frequency Bands between one another after the Auction?**

Ans. As stated in paragraph B.23.1 of the Information Memorandum, the Government’s policy inclination is to introduce spectrum trading in Hong Kong in the long term, subject to a feasibility study and resolution of various implementation issues. The Government has commissioned a consultant to study the feasibility of developing a spectrum trading regime in Hong Kong and is examining the recommendations of the consultant, together with the latest international trend and the market situation in Hong Kong in details to map out the way forward.

Against this background, the current Government policy remains to be that spectrum trading is not allowed. The lease of the right to use the Frequency Band(s) including the operation of base stations is a form of spectrum trading and is therefore not permissible under the current regulatory regime.

Regarding swap of Frequency Bands, paragraph B.22.1 of the

Information Memorandum stipulates that any request for subsequent change in spectrum assignment or the swap of spectrum with other licensees is subject to the approval of the Authority and conditions, if any, the Authority imposes. Any spectrum change or swap request will be dealt with by the Authority based on the merits of each case and its approval or otherwise will be at the Authority's sole discretion.

### **NETWORK ROLLOUT (NR)**

**NR.1** Would the Authority provide guidance on how the terms and conditions of the license specified in paragraph C.6.1(b) of the Information Memorandum could be met in the event that two operators form a joint venture ("JV") and collectively (but not separately) cover 50 percent of the Hong Kong population? For example, suppose Operator A and Operator B form a JV and the JV successfully acquires Frequency Bands A3 and A5 in the Auction. Further suppose that within 5 years the JV operates as follows:

- **On Frequency Band A3: Operator A provides coverage to 40 percent of the population and Operator B provides coverage to an additional 10 percent of the population. Operators A and B do not have overlapping coverage areas and therefore provide service to 50 percent of the population through the same Frequency Band.**
- **On Frequency Band A5: Operator A provides coverage to 10 percent of the population and Operator B provides coverage to 30 percent of the population. Therefore, on Frequency Band A5, only 40 percent of the population is covered.**
- **On Frequency Band A3 and A5 together: Operator A and B collectively provide coverage to more than 50 percent of the population.**

**Given this scenario, is the JV in compliance with the terms and conditions set forth in paragraph C.6.1(b) of the Information Memorandum?**

**Ans.** In the UCL to be issued to the Successful Bidder(s), the Authority will specify the Frequency Band(s), together with the locations and other pertinent characteristics of the base stations using the Frequency Band(s), in Schedule 3 to the UCL. Only the holder of this UCL will be given the right, and be held liable, for the possession and the use of base stations using the Frequency Band(s).

Each Frequency Band assigned in this Auction will be treated individually in respect of fulfilling the rollout obligation specified under the UCL. In other words, if a Successful Bidder is assigned with more than one Frequency Band, the coverage of the service provided by the Successful Bidder using each of the Frequency Bands assigned shall individually meet the rollout requirements as specified under the UCL.

### **TECHNICAL INFORMATION (TI)**

**TI.1** Regarding paragraph C.4.3(a) of the Information Memorandum, the Ministry of Industry and Information Technology in the Mainland has issued a Notice in September 2012 announcing that the 2500 – 2690 MHz band is planned for systems operating in Time Division Duplex (“TDD”) mode. Will the Authority issue comprehensive requirements on the coordination of frequency use and the specification of technical requirements for any interference measure (including measurement approach and criteria) before the auction?

Ans. The Authority does not have further deployment details about the band in the Mainland (such as band planning, system parameters and implementation date) since the announcement by the Ministry was made in September 2012. The Authority is not in a position to issue comprehensive requirements on frequency coordination at this point in time.

**Office of the Communications Authority**  
**31 January 2013**