

Auction of Radio Spectrum in the UHF Band
for the Provision of Broadcast-type Mobile Television Services
First Batch of Questions and Answers

The Telecommunications Authority (the “Authority”) has received questions in relation to the Information Memorandum published on 26 February 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 26 February 2010 (the “Notice”), or as the case may be, in Annex E “Glossary of Terms” of the Information Memorandum.

ACCESS TO HILLTOP BROADCASTING SITES (AH)

AH.1 Regarding paragraph B.6 of the Information Memorandum, what steps, if any, has OFTA taken to ensure that sufficient space and facilities are available at the hilltop sites currently used by ATV and TVB to enable the new mobile TV operator to make use of the hilltop sites to deliver its service?

Ans. To implement digital terrestrial TV (DTT) services in Hong Kong, Asia Television Ltd (ATV) and Television Broadcasts Ltd (TVB) employ six new principal DTT transmitting stations (i.e. located at Temple Hill, Castle Peak, Kowloon Peak, Golden Hill, Lamma Island and Cloudy Hill). Construction of new buildings at four DTT transmitting stations located at Temple Hill, Castle Peak, Kowloon Peak and Golden Hill have been completed, while new buildings at the other two DTT transmitting stations at Lamma Island and Cloudy Hill are under construction and estimated to be completed by 2010 - 2011.

The Office of the Telecommunications Authority (“OFTA”) has inspected the four completed stations and considered that spare equipment room and antenna mounting space should be available for potential sharing by the successful bidder of the mobile TV auction (the “Licensee”) licensed by the Authority. In addition, the Licensee may share the common antenna systems of ATV/TVB.

The Licensee is encouraged to approach ATV / TVB for commercial arrangement on sharing of sites and facilities at the six DTT principal transmitting stations. Where necessary, the parties may request OFTA for assistance (such as mediation). Furthermore, under

section 36AA of the Telecommunications Ordinance, the Authority may, after considering all relevant matters including factors listed in section 36AA(3), direct a licensee to coordinate and cooperate with another licensee in the public interest to share the use of a facility.

For the use of hilltop sites other than the six principal DTT transmitting sites, the Licensee may apply to the Authority, who will consider the application on a case by case basis. The Licensee will need to provide justifications to the Authority for the use of these hilltop sites. Subject to the approval of concerned application by the Authority, the Licensee may approach ATV / TVB for commercial arrangement on sharing of the other DTT broadcasting stations that are being developed by the two broadcasters. However, it should be noted that the sharing of space and facilities at the other DTT stations will depend on the availability of space and that the government policy is to accord priority of such space for DTT broadcasting services.

AH.2 In the event that the successful bidder of the mobile TV auction is unable to make use of the DTT hilltop sites (due to, for example, lack of space), would the Government grant land to the operator to construct its own hilltop transmitting stations on the same terms and conditions as those granted to the two free-to-air television broadcasters, ATV and TVB?

Ans. Details about sharing of the existing DTT hilltop stations are given in the responses to AH.1. In the light of the scarcity of hilltop site resources, the Licensee is encouraged to make use of the existing facilities at the six DTT transmitting stations as far as possible. As regards the use of new land at these six hilltop transmitting stations, the Licensee will have to provide sound justifications and OFTA will assess individual applications on a case by case basis in accordance with the standing guidelines¹. In general, the priority for use of hilltop sites for broadcasting shall prevail over telecommunications. In addition, the Licensee should note that the transmission parameters as mentioned in Annex D of the Information Memorandum have been coordinated with Mainland for use in Hong Kong. Any change in the transmission parameters including the locations of transmitting stations (e.g. the use of different hilltop site locations) would need further coordination. The outcome of such coordination and the time required are not certain.

¹ Available on OFTA's website at http://www.ofta.gov.hk/en/report-paper-guide/guidance-notes/gn_20050407.pdf

LICENSING (LG)

LG.1 Regarding paragraph B.5.5 and Annex B 37.1 of the Information Memorandum, is it a compulsory requirement to implement Conditional Access System (CAS) which is traditionally adopted for subscription-based service? Can the licensee simply implement “conditional access” at receivers using personal identification number (PIN)? By restricting knowledge of the PIN, a subscriber may restrict unauthorised access to selected channels or programme categories or specified time zones, or any combination of them.

Ans. In accordance with the Government’s implementation framework for mobile TV services, the industry will be required to develop self-regulatory codes of practice on the provision of mobile TV services covering such aspects as conditional access with a view to protecting public morals and children. Details of the implementation in relation to conditional access (e.g. whether CAS traditionally adopted for subscription TV service, PIN or other forms of conditional access should be used) should be proposed by the mobile TV service providers. In general, the implementation should provide a technical arrangement for restricting unauthorized access to selected channels or programme categories or specified time zones, or any combination of them. If a Licensee simply relies on the use of the PIN of a receiver for restricting the use of a receiver for viewing the mobile TV programmes on an all-or-nothing basis, it may not be qualified as a “conditional access” system for the purpose of fulfilling the licence obligation under Special Condition 37.1.

LG.2 Can the licensee offer free-to-air mobile TV service?

Ans. Mobile TV service providers are free to devise their own business models and determine their own pricing strategies for the provision of mobile TV services. The services can be subscription-based, free-to-air, or a combination of both.

LG.3 Regarding paragraph B.5.2 and C.1.1 of the Information Memorandum, is the bidder required to acquire the Unified Carrier Licence (UCL) in order to be qualified to participate the spectrum bidding? Can the successful bidder acquire the UCL after the auction by either applying new UCL or merging its existing carrier licence to UCL? Can a company (not an existing "unified carrier"), participate in the auction and then acquire the UCL after the auction is succeeded.

Ans. A company formed and registered under the Companies Ordinance (Cap.32, Laws of Hong Kong) may apply to participate in the Auction. It is not a pre-requisite for a Bidder (i.e. the applicant) to obtain a UCL in order to participate in the auction.

To be eligible as a Qualified Bidder, the Bidder must satisfy the Authority with all of the following:

- (a) it has duly submitted an Application (including the Application Form containing all requested information and supporting documents, Bidder Compliance Certificate and the Deposit); and
- (b) it complies with or is capable of complying with all the undertakings given in the Bidder Compliance Certificate.

When a Bidder becomes a Successful Bidder of the Auction, the Authority will grant a UCL ("the Licence") to the Successful Bidder under which the Frequency Band shall be assigned. If the Successful Bidder holds another existing carrier licence, it may apply to the Authority to incorporate the existing carrier licence into the newly granted Licence.

LG.4 Regarding paragraph C.4.1, Annex B Schedule 8, Annex B Schedule 9 Annexe and Annex B Appendix 2 A.6.1 of the Information Memorandum, is the Licensee obliged to provide service to cover all indoor areas? What are the technical criteria of "coverage" of a typical residential building in Hong Kong?

Ans. The network and service rollout requirements will only cover outdoor locations. OFTA will develop the methodology of verifying the coverage taking into account the technology to be adopted by the Licensee.

LG.5 Regarding paragraph A.1.1(k) of the Information Memorandum, "The Licensee will be required to use at least 75% of the transmission capacity to provide mobile TV services". If part of the transmission capacity is used for downloading video content, but not for real-time viewing, would it be counted as mobile TV services?

Ans. Please refer to Special Condition 31.2 of the Licence for the transmission obligation, and Special Condition 39.1 of the Licence for the definition of "broadcast-type mobile television service" and "television programme" for details. Broadcast-type mobile television service should provide real-time or near real-time multicast transmission to and viewing of video contents by the recipients. If the transmission capacity is used for point-to-point downloading of data files (including video) in general for storage and subsequent application (including viewing of video contents), it cannot be considered as part of the transmission capacity for provision of broadcast-type mobile TV services.

LG.6 Further to LG.5, if part of the transmission capacity is used for response or interactive TV, would it be counted as mobile TV service?

Ans. To be counted as mobile TV services, the services under concern should be intended to inform, enlighten or entertain and shall consist predominantly of moving visual representational images, or a combination of sounds and such images. Please refer to Special Conditions 31.2 and 39.1 of the Licence for details.

LG.7 Besides the interactiveness described in LG.6, can more than one standard for data transmission used within the frequency band?

Ans. Referring to paragraph B.8.1 of the Information Memorandum, the Licensee is free to adopt any widely recognized standard for the provision of broadcast-type mobile TV services, including the use of multi-standards for transmission.

SPECTRUM SUPPLY (SS)

SS.1 There is a brief reference to the switching off of the analogue TV network tentatively by 2012 under paragraph C.2.3(d) of the Information Memorandum (p.14) and we would like to know if there has been any proposed arrangement on the allocation and assignment of the spectrum after the switching off.

Ans. At present, the target of switching off analogue TV service by 2012 is being used for planning purposes. However, the Government will take into account the future market situation, including the take-up rate of DTT services, before making a final decision on the switch-off. Sufficient preparation will be made in all aspects to ensure public awareness before the analogue switch-off is to be implemented. If analogue TV services were shut down in future, the spectrum occupied by analogue TV services would fall vacant (the “digital dividend”). Subject to proper re-farming of the spectrum and co-ordination with the neighbouring frequency regulatory offices (including the Mainland and Macao), there may be scope for the vacated spectrum to be re-allocated for other broadcasting and telecommunications services. As Hong Kong, Macao and GuangDong Province will share the use of the same frequency band (UHF channel no. 21 – 62) for both analogue TV and DTT services, the concerned frequency regulatory offices will coordinate the use of these frequencies in order to ensure efficient use of spectrum and avoid mutual radio interference.

TECHNICAL INFORMATION (TI)

TI.1 Is there any limitation on the total number of channels to be provided by the Mobile TV systems?

Ans. There is no limitation on the permitted number of programming channels to be offered by the Licensee.

TI.2 We would like to know if there are any technical limitations (such as ERP, number of TX antenna for each station etc.) when re-broadcasting CH47 at somewhere on street level or dedicated shopping mall for hot spot coverage ?

Ans. It is understood that fill-in stations would be required to supplement the coverage of the six principal hilltop transmitting stations. The technical configuration of any fill-in stations (including ERP, antenna characteristics, etc) should ensure that no radio interference would be

caused to other legitimate users of telecommunications and broadcasting services. In particular, the fill-in stations should not interfere with the local TV broadcasting service which operates in adjacent channels (i.e. Ch 46 and Ch 48), which are extensively deployed in the urban areas. Careful network planning is required to avoid interference to the relevant TV receiving systems.

For information, the transmitting power of existing roof-top fill-in stations for UHF television channels is normally below 1 W (ERP). In addition, any fill-in stations should not cause radiation hazard to the public and should comply with the relevant codes issued by OFTA². Individual repeater or base station will need to be approved by OFTA on a case-by-case basis taking into account of the above factors.

TI.3 We would like to know if there are any technical limitations of Base Station, such as ERP, number of RX/TX antenna for each station etc.?

Ans. Please refer to our answer to TI.2 above for details.

TI.4 If commercial repeaters are used in order to transmit broadcast signal to certain locations, please state OFTA's requirements on the specification of the repeater, the approval procedure (by model / by unit) and licensing cost, if any?

Ans. Please refer to our answer to TI.2 above for details. It should be noted that commercial repeaters for broadcast-type mobile TV services should only be established by the Licensee or authorized under a proper licence issued by the Authority.

TI.5 Please state requirements on the specification of the repeater for home (or personal) use.

Ans. Please refer to our answer to TI.2 above. Please also note that if any person uses the repeater which functions as a radiocommunications apparatus for re-transmission of the mobile TV signals in a frequency band, the repeater should be covered by a licence unless the frequency band is exempted from licensing. Also, the re-transmission of signals should comply with the relevant laws and contracts, including those in relation to copyright.

² Including compliance with the “Code of Practice for the Protection of Workers and Members of Public Against Non-Ionizing Radiation Hazards from Radio Transmitting Equipment” issued by OFTA (<http://www.ofta.gov.hk/en/code/practice/cop-radiation-hazards.pdf>).

TI.6 For home use repeater mentioned in TI.5, is there any limitation on the use of frequency band and modulation for the repeater output? Namely, could the repeater transform the input broadcast signal to other signal protocol, and in some cases via different media.

Ans. Please refer to our answer to TI.5 above.

TI.7 For mobile TV receiving device, is there any approval or compliance requirements from OFTA and other government authorities?

Ans. At present, there is no mandatory approval requirement on a television receiver. Depending on the technologies / standards and business models adopted for the provision of broadcast-type mobile TV services, OFTA may publish relevant specifications and requirements for the mobile TV receivers or require the publication of such specifications and requirements by the Licensee and/or mobile TV service providers for public information.

TI.8 Please specify if there are any minimum requirements on the video quality such as resolution, bit rate and frame rate.

Ans. There are no mandatory requirements on the video quality of mobile TV services to be provided by the Licensee. However, the Licensee should operate, maintain and provide a good, efficient and continuous service in a manner satisfactory to the Authority. Please refer to the General Condition 5.1 of the Licence for details.

OTHERS (OT)

OT.1 Are all the terms of compliance, definitions and requirements (whether legal, operational or technical) in relation to the bidding and operation of the subject mobile TV services fully embodied in and covered by the Information Memorandum with no other supplemental requirements or references not contained or disclosed in the Information Memorandum?

Ans. All the terms and conditions of the Auction (including the Conditions of the Licence and the undertakings required from the Bidder in the Bidder Compliance Certificate) are contained in the Notice and its appendices (i.e. Annex B of the Information Memorandum).

While the Information Memorandum provides explanations and illustrations about the Notice and highlights matters and issues under the purview of the Authority which specifically concern mobile TV services, it is for information purpose only and has no binding force. The Information Memorandum does not purport to be complete or definitive in setting out all regulatory requirements made under the Telecommunications Ordinance and regulations thereunder; and rules applicable to mobile TV services under any other law and regulation.

Office of the Telecommunications Authority
30 March 2010