

## **LEGISLATIVE COUNCIL BRIEF**

### **Digital Terrestrial Television – Analogue Switch-off**

#### **INTRODUCTION**

At the meeting of the Executive Council held on 21 June 2011, the Council ADVISED and the Chief Executive ORDERED that the target date for switching off analogue television services (i.e. analogue switch-off, or ASO in short) be deferred from end 2012 to end 2015.

#### **JUSTIFICATIONS**

##### **Implementation framework for digital terrestrial television broadcasting**

2. In July 2004, the Government promulgated the implementation framework for digital terrestrial television (DTT) broadcasting. It is set out in the framework that our aim was to switch off analogue television service<sup>1</sup> five years after the commencement of simulcast<sup>2</sup>, subject to further market and technical studies. With the rollout of DTT in end 2007, the target ASO date was thus end 2012. We have, however, always stressed in public that this is a working target and that we will closely monitor the actual market situation and the prevailing DTT take-up rate before taking a firm decision on ASO.

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<sup>1</sup> Digital television has several advantages over analogue television, with the most significant being that digital channels are more spectrum efficient (i.e., more digital channels can be accommodated in a certain bandwidth taking up less spectrum). When television audience receiving terrestrial broadcasting in a region successfully migrate from analogue to digital format, analogue television broadcasting can be switched off (a process known as “analogue switch-off”). The spectrum occupied by analogue broadcasting can then be released and used for other broadcasting and telecommunications services.

<sup>2</sup> Simulcasting means simultaneously broadcasting the same television programme services in analogue and digital formats. It is a necessary transitional arrangement in the migration from analogue to digital broadcasting.

## **Revision of ASO target**

### *Rollout of DTT*

3. On 31 December 2007, Asia Television Limited (ATV) and Television Broadcasts Limited (TVB) launched their respective DTT services with an initial coverage of about 50% of the population. The Commerce and Economic Development Bureau (CEDB) has set up a DTT Steering Committee, comprising representatives of ATV, TVB and relevant government departments including Office of the Telecommunications Authority (OFTA) and Television and Entertainment Licensing Authority, to monitor the DTT development, in particular the rollout of the DTT transmission network and DTT take-up rate. Whilst the network rollout was smooth and take-up rate on the increase, it is not realistic to assume that we can achieve an ASO by the end of next year, for reasons set out below.

### *DTT coverage*

4. Firstly, the DTT network coverage only stood at about 89% of the Hong Kong population in late 2010. While this already represents a significant increase from about 50% when DTT was first launched three years ago, the network coverage of DTT is not yet on par with that of analogue TV at about 98%. The DTT network is built up by the construction of signal transmission stations at various locations throughout the territory. A total of 20 transmitting stations have so far been put in place and nine more will be built by end 2011 to further extend the network coverage.

5. Since the transmitting stations were rolled out in phases, the DTT coverage of 89% as derived by ATV and TVB on the basis of computer modelling tends to be conservative in order to avoid over-estimating the coverage population in urban areas covered with only marginal signal strength by individual transmission stations. Nevertheless, residents at some areas of marginal signal strength may still receive stable DTT services if their antennas are properly installed. In this connection, it is necessary to conduct a site survey to confirm the actual DTT coverage provided by the DTT transmitting stations. Since early 2011, ATV and TVB have been carrying out building-by-building coverage validation work through questionnaire survey, telephone interview, DTT signal strength measurement, joint field survey with building management offices on DTT reception at buildings/estates, etc, with a view to confirming the

actual DTT coverage as far as possible. As of mid May 2011, the DTT coverage as verified reaches over 95% of the population. For ASO to be considered, the DTT coverage must be at least on par with that for analogue services.

#### *DTT penetration*

6. Secondly, the percentage of households which had procured the necessary receivers (i.e. DTT decoders, integrated TV or computer with DTT reception device) to watch DTT services (i.e. DTT take-up rate) stood at about 63%, according to a regular public survey conducted in March 2011. Though the three-year penetration in Hong Kong since DTT rollout is quite satisfactory in comparison with overseas experience (for example it took Japan five years and Australia seven to reach a take-up rate of some 60%, and South Korea achieved only a 33% take-up rate after six years of rollout), we are concerned that the increase of DTT take-up rate in Hong Kong has gradually slowed down. It is therefore unlikely that by end 2012 the DTT take-up rate would have reached a sufficiently high percentage to warrant consideration of ASO.

7. Unlike some overseas countries whereby the major means of access to television services is via cable or satellite network, most Hong Kong people access free TV services by means of terrestrial airwaves. A high percentage of DTT take-up is thus essential for ensuring a smooth transition from terrestrial analogue TV to digital TV broadcasting. While the take-up rate regarded as sufficient for ASO may vary from one place to another, with our heavy reliance on terrestrial airwaves for free TV in Hong Kong, we consider that it would be reasonable to expect that the DTT take-up rate should reach a much higher level than 60% before we should consider ASO.

#### *Frequency co-ordination with Mainland on the use of spectrum after ASO*

8. Currently, Ultra High Frequency (UHF) spectrum at 470 – 806 MHz is allocated for broadcasting services in accordance with the recommendations of the International Telecommunications Union (the ITU). Both the analogue TV and DTT services of Hong Kong and the Mainland are using spectrum within this frequency range for broadcasting. In the Mainland, part of the spectrum within this frequency range is also used for telecommunications services in respect of public safety. In order to avoid mutual radio interference with services of the Mainland, the use of spectrum within 470 – 806 MHz has been co-ordinated in accordance with

the established frequency co-ordination mechanism between OFTA and the Mainland. Any change to the co-ordinated use of spectrum should be discussed and agreed by both parties.

9. With the advent of technology and the increased popularity of mobile broadband services, overseas administrations are eager to identify spectrum suitable for mobile broadband services. With the recommendations approved by the ITU, part of the spectrum within the 470 – 806 MHz range, viz 698 – 806 MHz, are identified to be suitable for mobile broadband services. Individual administrations may consider the adoption of the recommendations of the ITU.

10. A major benefit of implementing ASO is that the spectrum thus vacated (commonly referred to as the “digital dividend”) from this frequency band can be used for other broadcasting and telecommunications services which are of significant economic value to Hong Kong. For example, the spectrum utilisation fees collected by the Government in the auction in February 2011, which concerned 20 MHz of spectrum in the 800 MHz band, amounted to nearly \$2 billion. With the implementation of ASO and subject to successful frequency coordination with the Mainland authorities<sup>3</sup>, we can make efficient use of the vacated spectrum for such broadcasting and telecommunication services including DTT, mobile TV and mobile broadband services, which would yield significant economic benefits for Hong Kong. OFTA estimates that the demand for spectrum for mobile broadband services in Hong Kong before 2015 can be met by the spectrum currently available. Deferring the target ASO date to 2015 would therefore not affect the supply of sufficient spectrum to meet the demand of mobile broadband services during this interim.

### **New Target for ASO**

11. Having carefully examined the circumstances set out above and consulted OFTA, we propose to defer ASO for three years from end 2012 to end 2015. The revised ASO target is much more realistic and meaningful as it would –

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<sup>3</sup> These include the State Administration of Radio, Film and Television and the Ministry of Industry and Information Technology.

- (a) give the two free-to-air television broadcasters, i.e. ATV and TVB, more time to extend and optimise its DTT network, including the feasibility study on improvement of coverage in remote areas where current analogue television reception is poor;
- (b) allow more time for the viewing public to switch to DTT; and
- (c) allow more time for us to coordinate with the Mainland authorities on the use of digital dividend in order to yield the maximum economic benefits for Hong Kong.

12. While the US, some European countries, Japan and South Korea have set an ASO date before 2012 (as they rely more on cable and satellite TV rather than terrestrial airwaves for the delivery of free TV services), many countries in the Asia-Pacific region plan for ASO in 2015 or after (e.g. Mainland China - 2015 the earliest, Malaysia - 2015, Thailand - 2015, India - 2015, Singapore - not yet announced, etc). Moreover, overseas experience in rolling out DTT also suggests that it is common for stipulated ASO target in other places to be deferred after having due regard to the actual implementation experience and market situation.

## **WAY FORWARD**

13. The DTT Steering Committee chaired by CEDB will continue to monitor progress in terms of network rollout and take-up rate with a view to achieving a smooth switchover from analogue TV to DTT by the revised ASO date.

14. As for DTT network rollout, we will continue to work with the two terrestrial free TV broadcasters to extend and optimise their DTT network coverage. We will look for practicable and cost-effective ways to improve coverage in areas where at present there is no analogue TV reception or the reception quality is poor.

15. As regards DTT take-up, the DTT Steering Committee is reviewing the promotion and publicity strategy with ATV and TVB with a view to reaching and persuading households which have hitherto been slow to switch to DTT.

## **IMPLICATIONS OF THE PROPOSAL**

16. The proposal has financial implications as set out at the **Annex**. It poses no significant economic implications as the currently available spectrum is expected to be sufficient to meet the demand for mobile broadband value-added telecommunication services in Hong Kong until 2015, which ties in with the revised ASO target date. The revised ASO target is in conformity with the Basic Law, including the provisions concerning human rights. It has no civil service, productivity, environmental or sustainability implications.

## **PUBLIC CONSULTATION**

17. We have regularly updated the Legislative Council Panel on Information Technology and Broadcasting on the DTT progress. We have also been keeping a close and constant dialogue with ATV and TVB regarding the progress of the DTT rollout. We have always stressed in public and also to the Panel and stakeholders concerned that we will closely monitor the actual market situation and the prevailing DTT take-up rate before making a firm decision on ASO.

## **PUBLICITY**

18. We will issue a press release on 22 June 2011. We will also brief the Legislative Council Panel on Information Technology and Broadcasting. A spokesman will be available to answer media and public enquiries.

19. As there were previous illicit sales activities for DTT set-top boxes through misleading the viewing public that analogue television services will soon be switched off, we will closely monitor the situation and enhance the respective public education and publicity programme as necessary to tackle such activities.

## **ENQUIRY**

20. Enquiries about this brief can be directed to Mr Aaron Liu, Principal Assistant Secretary for Commerce and Economic Development

(Communications and Technology)A, at telephone: 2189 2236 or e-mail:  
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**Communications and Technology Branch**  
**Commerce and Economic Development Bureau**  
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## Financial Implications

The proposal will not affect the gross carrier licence fees to be collected from the two incumbent free-to-air broadcasters, i.e., ATV and TVB, which are each holding a carrier licence issued under the Telecommunications Ordinance (Cap. 106). At present, ATV and TVB are each paying the Office of the Telecommunications Authority Trading Fund an annual carrier licence fee of about \$10 million, comprising a fixed fee of \$1 million and a variable spectrum fee of about \$9 million at rates stipulated in Schedule 3 of the Telecommunications (Carrier Licences) Regulation (Cap. 106V). With the deferral of the ASO date, they will continue to pay the annual carrier licence fees and the variable spectrum fee. However, assuming there is no change of carrier licence fees as stipulated in the relevant ordinance, a successful implementation of ASO by end 2015 and thus the return of spectrum used for analogue TV broadcasting and the associated distribution network, the variable spectrum fee payable by each of them will become around \$3.7 million, representing a reduction of \$5.3 million.

2. The proposal does not have implications on the licence fees payable by ATV and TVB under their respective domestic free television programme service licences issued under the Broadcasting Ordinance. At present, they are each paying an annual fee comprising a fixed fee of \$4,701,400 and a variable fee depending on the yearly total number of hours of television programme time provided by the licensee<sup>1</sup> at rates stipulated in the Schedule 1 to the Broadcasting (Licence Fees) Regulation (Cap.562A).

3. The total financial implications relating to the above fees will depend on whether there are new multiplex operators and television service providers entering the market after ASO and whether ATV and TVB will further expand their digital broadcasting services.

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<sup>1</sup> A variable fee at \$13,200 per every 100 hours of television programme time for the first 17 000 hours and \$1,630 per every 100 hours of television programme time after those 17 000 hours of programme time.