

LEGISLATIVE COUNCIL BRIEF

Digital Terrestrial Television (“DTT”) – Analogue Switch-Off (“ASO”)

INTRODUCTION

At the meeting of the Executive Council held on 29 January 2019, the Council **ADVISED** and the Chief Executive **ORDERED** that analogue¹ television services should be switched off (or ASO in short) on 30 November 2020 at 23:59 and full digital television broadcast should start at 00:00 on 1 December 2020.

JUSTIFICATIONS

The Need for ASO

2. Currently, both analogue TV and DTT services in Hong Kong are transmitted by using frequency spectrum at the Ultra High Frequency (“UHF”) band in the range of 470-806 MHz, the frequency band allocated by the International Telecommunication Union (“ITU”) primarily for TV broadcasting worldwide. The worldwide trend is to gradually move away from analogue TV broadcasting to DTT broadcasting because DTT out-performs analogue TV in terms of picture quality and more importantly, spectrum-efficiency. In view of the growing demand for spectrum for telecommunications services, the ITU has already identified that upper part of the spectrum in the UHF band in the range of 614-806 MHz is suitable for deploying mobile telecommunications services, including mobile broadband services. ASO can thus vacate valuable spectrum to address the increasing demand for spectrum for high value-added mobile telecommunications services. Many countries have switched off analogue

¹ The free-to-air terrestrial television (“TV”) services in Hong Kong were used to be transmitted in analogue format only. In December 2007, two domestic free television programme service (“free TV”) broadcasters launched DTT services on top of their analogue TV services. Compared with analogue TV services, DTT services improve picture and sound quality, reduce reception problems, and use spectrum more efficiently (i.e. enabling the transmission of more programme channels than analogue TV for a given bandwidth of spectrum).

TV broadcast and started full digital TV broadcast in recent years.

3. For the vacated spectrum to be usable in Hong Kong for high value-added mobile telecommunications services, it must be free from radio interference. This requires that the deployment of spectrum in Hong Kong and the Mainland (in particular Guangdong Province) post-ASO will not cause mutual interference with each other over the boundary. In other words, we need to coordinate with Mainland authorities in order to use the spectrum in the UHF 470-806 MHz band.

Assessment on Hong Kong's Readiness for ASO

ASO target date review

4. Noting the technological advantages of DTT over analogue TV broadcasting, the Government decided in 2004 that Hong Kong should go ahead with ASO and the first target date was set at end-2012. In June 2011, having regard to DTT coverage, its penetration rate and market situation at the time, the Government decided that the ASO target date be deferred to end-2015. In December 2014, the Government further deferred the target date to 2020, subject to a review to be conducted in 2017-18. The main consideration then was to avoid causing disruption to some 480 000 households which had yet to switch to DTT and to allow more time for frequency coordination with the Mainland.

5. A review was conducted in 2018 to assess Hong Kong's readiness for ASO, focusing on two outstanding factors², namely DTT penetration (the percentage of households able to receive DTT services) in Hong Kong; and progress of frequency coordination with the Mainland.

DTT penetration

6. To assess Hong Kong's DTT penetration, the Commerce and Economic Development Bureau ("CEDB") has commissioned a consultancy study and found that by late-2017, about 88% (i.e. more than 2.2 million) of Hong Kong households have already switched to DTT³, compared with about 80% in 2014. The study also revealed that for the

² Another factor is DTT network coverage which has already reached at least 99% of the local population by September 2013, on a par with that of analogue TV.

³ CEDB commissioned a consultancy study from August to October 2017 covering some 5 000 sampled households to assess the overall DTT penetration in Hong Kong.

remaining 12% (about 300 000 non-DTT households), 7% (about 180 000 households) were still receiving analogue TV services and 5% (about 120 000 households) reportedly had no TV set at home. Based on these findings, we estimate that if Hong Kong implements ASO, about 180 000 households would be affected, compared with 480 000 households in 2014⁴. Overseas experience shows that the promulgation of a clear target date of ASO will encourage viewers to take up DTT, accelerating the growth of the penetration rate in the run up to ASO⁵. In Hong Kong, with a high and potentially growing⁶ DTT penetration rate, we consider that the public is largely ready for ASO by end-2020.

Frequency coordination

7. We have been engaging Mainland authorities on the ASO target date and post-ASO frequency coordination. The Mainland has also set their ASO target in end-2020 but has yet to finalise their planning for spectrum in the UHF 470-806 MHz band post-ASO. Nevertheless, through frequency coordination with Mainland authorities, it is feasible for Hong Kong to initially make use of 20 MHz of frequency spectrum in the 700 MHz band for outdoor mobile telecommunications services. We will continue our frequency coordination dialogue with Mainland authorities with a view to making available more spectrum for outdoor deployment.

8. Meanwhile, we plan to make use of a total of 160 MHz of spectrum in the 600/700 MHz bands vacated after ASO for indoor mobile services in Hong Kong.

9. Because of its good radio propagation and indoor penetration characteristics, the above spectrum could provide much needed additional network capacity in congested or high traffic indoor mobile hotspots such as Hong Kong Convention and Exhibition Centre, Hong Kong International Airport, shopping malls and confined areas in the MTR system. It will relieve the current congestion, allowing more flexibility for the industry to design their network infrastructure and improve services.

⁴ In the 2014 survey, the figure of 480 000 had no further breakdown between those which had analogue TV sets and those that had no TV set at home.

⁵ For example, Australia announced in October 2008 the plan for ASO by region starting from June 2010 and in the whole of Australia by end-2013. Australia had a DTT penetration rate of less than 47% when the date for ASO was announced, and its DTT penetration went up to 93% in early-2013 before ASO was implemented in end-2013.

⁶ Note also that since December 2014, all TV sets being sold support DTT services.

10. Implementing ASO and reallocating the vacated spectrum for mobile telecommunications services are also in line with the international trend⁷.

11. The Secretary for Commerce and Economic Development (“SCED”) will serve notices to free TV licensees 18 months in advance (i.e. by May 2019) in accordance with their respective licences directing them⁸ to broadcast in digital form in the entirety immediately after ASO.

12. The Office of the Communications Authority will coordinate with Mainland authorities on the use of spectrum in the UHF 470-806 MHz band and liaise with the relevant TV broadcasters⁹ on the relocation of DTT frequency channels in order to vacate spectrum in the 600/700 MHz bands after ASO.

DTT Assistance Scheme

13. In tandem with ASO, as mentioned in paragraph 6, there are about 180 000 analogue TV households in Hong Kong. If they do not replace their TV sets with digital ones or install a “set-top” box (“STB”) for receiving DTT services, they will no longer have access to free TV broadcast. It is therefore a common practice for countries which implemented ASO to launch some kind of assistance schemes to help households in need buy digital TV sets or STBs¹⁰.

⁷ Following the ITU’s recommendations, the following countries, for example, have implemented or will implement ASO: Germany (2008), the United States (2009), the United Kingdom (2012), South Korea (2012), Japan (2012), Australia (2013), Singapore (2019), Malaysia (2019), Thailand (2020) and the Philippines (2023).

⁸ Television Broadcasts Limited (“TVB”) is the only incumbent free TV licensee required to provide analogue TV services through spectrum under its free TV licence. Fantastic Television Limited (“Fantastic TV”) provides analogue TV programmes by means of fixed network on a voluntary basis. HK Television Entertainment Company Limited (“HKTVE”) currently does not provide any analogue TV service. SCED is empowered under their free TV licences to direct TVB and Fantastic TV to provide broadcasting services in digital form in the entirety, subject to an 18-month advance notice. For the avoidance of doubt, SCED will also notify HKTVE of the implementation of ASO at the same time.

⁹ Referring to TVB, HKTVE, and Radio Television Hong Kong which are using spectrum for broadcasting.

¹⁰ For example, the United Kingdom and Australia have launched means-tested assistance schemes to subsidise STB. Singapore has launched a means-tested scheme to fully subsidise STBs or partially subsidise purchase of digital TV sets. The United States has partially subsidised all families (i.e. non-means-tested) to purchase STBs.

14. We are considering launching a similar assistance scheme in Hong Kong to assist needy households to continue to access free TV infotainment after ASO. Our initial thinking is to seek funding from the “Community Care Fund (“CCF”)” and engage a non-governmental organisation (“NGO”) to implement a 12 to 18-month assistance scheme which is expected to commence from late 2019 or early 2020. The Scheme will assist an eligible household to replace its original analogue TV with a basic model digital TV set, or purchase a multi-function STB, in order to receive DTT services.

15. We intend to keep the application procedures simple. Eligibility will be tied to existing means-tested Government assistance programmes¹¹. We estimate that the number of eligible households is 160 000 (out of 180 000 analogue TV households).

16. We plan to identify a partner NGO to implement the Scheme and seek funding approval from the CCF Task Force and the Commission on Poverty in mid-2019. Details of the Scheme will be announced upon funding approval.

IMPLICATIONS OF THE PROPOSAL

17. The implementation of ASO in end-2020 has financial implications as set out in **Annex**. Time-limited manpower resources have been secured up to 2020-21 including support for handling frequency coordination, planning for ASO and monitoring the implementation of the proposed DTT Assistance Scheme. The proposals are in conformity with the Basic Law, including the provisions concerning human rights. The proposals have no productivity, gender and sustainability implications.

18. In relation to economic implications, ASO will free up spectrum for enhancing indoor hotspots and network capacity of indoor mobile telecommunications services and support the overall telecommunications services, conducive to Hong Kong’s telecommunications and smart city

¹¹ Existing means-tested programmes include for example, Comprehensive Social Security Assistance, Working Family Allowance, School Textbook Assistance, Kindergarten and Child Care Centre Fee Remission, Medical Fee Waiver Mechanism, and Old Age Living Allowance (for elderly-only households). In addition, we will consider offering assistance to households whose monthly household income is below 75% of the Median Monthly Domestic Household Income of economically active households.

development.

19. As for environmental implications, analogue TV households can choose to purchase STBs without the need to dispose of working analogue TV sets. For households choosing to switch to digital TV sets, we will explain to them the implementation details for collecting, disposing of and recycling old analogue TV sets in accordance with the existing mechanism.

PUBLIC CONSULTATION

20. We have provided briefings to the Legislative Council Panel on Information Technology and Broadcasting on previous decisions made on ASO target date and issued press releases.

PUBLICITY

21. We plan to launch a series of Announcement in the Public Interest at different stages in the lead-up to end-2020 about the ASO implementation date, ways to check whether the TV sets are DTT compatible, and the proposed DTT Assistance Scheme, with a view to enhancing public awareness for their early preparation.

ENQUIRIES

22. For enquiries, please contact Mr Keith GIANG, Principal Assistant Secretary for Commerce and Economic Development (Communications and Creative Industries) A at 2810 2708.

**Communications and Creative Industries Branch
Commerce and Economic Development Bureau
11 February 2019**

Financial Implications

The proposal of implementing Analogue Switch-Off (“ASO”) in Hong Kong in end-2020 will have financial implications on the general revenue, the Radio Television Hong Kong (“RTHK”) and the Office of the Communications Authority (“OFCA”).

General Revenue

2. With the implementation of ASO, Hong Kong expects to vacate a total of 160 MHz of spectrum for indoor mobile telecommunications use. Depending on how the spectrum is assigned subject to public consultation and market responses, the assignment of the relevant spectrum may generate revenue to the Government in the form of Spectrum Utilisation Fee (“SUF”). The SUF collected will be credited to the General Revenue Account in accordance with the established practice.

RTHK

3. RTHK started to broadcast its programmes on the two sets of analogue frequency channels vacated by Asia Television Limited (“ATV”) upon expiry of ATV’s domestic free TV programme service licence on 2 April 2016.

4. In 2018-19, the annual cost for RTHK to maintain the two analogue programme channels is about \$57 million¹, including procurement of analogue TV transmission services, operation of presentation system, spare parts of transmitting equipment, payment to OFCA for the management of spectrum, etc. With the implementation of ASO, RTHK will save these costs.

5. As stated in paragraph 12 of the paper, the relocation of digital terrestrial television (“DTT”) frequency channels to vacate the

¹ The annual cost for RTHK to operate the two analogue TV programme channels is subject to change given that RTHK will procure a new contract for analogue TV transmission services starting from 2 April 2019.

600/700 MHz bands will involve RTHK. RTHK estimates that the one-off expenditure involved for the setup of a temporary transmission system and migration of the transmission system of RTHK's DTT transmission network to be \$15 million to \$25 million, subject to detailed technical assessment to be made. RTHK will seek the necessary funding in accordance with the established mechanism.

OFCA

6. As the spectrum for supporting analogue broadcasting will be withdrawn, OFCA Trading Fund will no longer collect the variable spectrum management fee for such spectrum from Television Broadcasts Limited ("TVB") under its unified carrier licence and from RTHK post-ASO. Nevertheless, this could be offset by the subsequent assignment of the 160 MHz of spectrum, as the OFCA Trading Fund would be able to collect spectrum management fees from mobile network operators using the vacated spectrum.