

**For discussion on
8 February 2021**

**Legislative Council
Panel on Information Technology and Broadcasting**

Television Broadcast Frequency Channel Migration Arrangements

Purpose

This paper briefs Members on the progress of the switching off of analogue television (TV) services (or ASO in short) and the work plan of the Communications Authority (CA) on migrating the existing digital terrestrial TV (DTT) frequency channels operating in the 614-806 MHz band (600/700 MHz bands) after the implementation of full digital TV broadcast (Channel Migration). The Channel Migration aims at vacating relevant radio spectrum for high value-added mobile telecommunications services, including 5G.

ASO

2. The implementation of full digital TV broadcast is a worldwide trend. In addition to providing better audio and picture quality, it also allows valuable spectrum resources to be utilised more efficiently. In February 2019, the Government announced that Hong Kong would switch off analogue TV services on 30 November 2020 (at 11:59 pm) and implement full digital TV broadcast on 1 December 2020 (at 00:00).

3. After the announcement, the Government commenced a series of preparatory work right away, including carrying out extensive promotion and publicity to remind analogue TV households to make timely preparations, launching the Community Care Fund Digital TV Assistance Programme to help analogue TV households in need to acquire digital TV equipment, as well as closely cooperating with free TV broadcasters to iron out the details of technical preparatory works. As Hong Kong formally entered the era of full digital TV broadcast on 1 December 2020, the relevant tasks on ASO had successfully been completed.

The Need for the Channel Migration

4. Before ASO, free TV services in Hong Kong used most of the frequency channels in the 500 MHz band and the 600/700 MHz bands for analogue TV and DTT broadcast. Please refer to **Figure 1** of the **Annex** for the usage of the relevant spectrum.

5. After ASO, the 21 frequency channels in the 500 MHz band and the 600/700 MHz bands originally used for analogue TV services ceased to operate. There are a total of 16 DTT frequency channels currently in use, which are scattered in the 500 MHz band and the 600/700 MHz bands. Please refer to **Figure 2** of the **Annex** for details.

6. To facilitate more efficient use of the relevant spectrum, we will migrate the DTT frequency channels in the 600/700 MHz bands to operate in the 500 MHz band. After the migration, the vacated spectrum in the 600/700 MHz bands can be used for high value-added mobile telecommunications services including 5G, enhancing network capacity and coverage, and relieving the currently congested indoor mobile telecommunications hotspots (such as MTR stations). We plan to assign the relevant spectrum by the end of this year to support Hong Kong's overall telecommunications services and smart city development.

Arrangements for the Channel Migration

7. There are a total of 12 free TV programme channels in Hong Kong. Each of the programme channels is assigned a channel number (i.e. 31, 32, 33, 76, 77, 81, 82, 83, 84, 85, 96 and 99) to facilitate the viewing public to choose their preferred programme channels by these channel numbers on their digital TV equipment. The current migration of DTT frequency channels will not affect the channel numbers, in other words, the above channel numbers will remain unchanged.

8. On 1 February this year, the CA has assigned DTT frequency channels in the 500 MHz band to Television Broadcasts Limited (TVB), HK Television Entertainment Company Limited (HKTVE) and Radio Television Hong Kong (RTHK)¹ for broadcasting starting from 1 April this year². The

¹ The two programme channels of Fantastic Television Limited (Fantastic TV) (i.e. Hong Kong International Business Channel 76 and Hong Kong Open TV 77) will not be affected by the Channel Migration as they are transmitted through fixed network rather than using broadcasting spectrum.

² Please refer to the CA press release in July 2019:
https://www.coms-auth.hk/en/media_focus/press_releases/index_id_1964.html

three broadcasters will simultaneously broadcast on both the existing and newly assigned DTT frequency channels over a period from 1 April to 30 November this year. Such an arrangement is referred to as the “Digital Simulcast”.

9. The “Digital Simulcast” arrangement is to allow sufficient time for the public and responsible persons of common antenna broadcast distribution (CABD) systems to carry out preparation/reconfiguration work in order to enable continued reception of the relevant programme channels during the process of the Channel Migration. When the “Digital Simulcast” ends (i.e. on or after 1 December 2021, 00:00), all the programme channels will be transmitted in the 500 MHz band, thereby vacating the DTT frequency channels in the 600/700 MHz bands.

10. The Channel Migration will affect six programme channels (RTHK TV 31, RTHK TV 32, RTHK TV 33, Jade 81, ViuTVsix 96 and ViuTV 99)³. Details of the existing and newly assigned DTT frequency channels involved in the Channel Migration are set out in the table below –

Broadcaster	Programme Channel	Existing DTT Frequency Channel (until 30 November 2021)	Newly Assigned DTT Frequency Channel (starting from 1 April 2021)
RTHK	RTHK TV 31 RTHK TV 32 RTHK TV 33	Channel 62	Channel 27
TVB & HKTVE	Jade 81 ViuTVsix 96 ViuTV 99	A total of 14 DTT frequency channels are used	Channel 37

11. The Office of Communications Authority (OFCA) will continue to conduct regular meetings with RTHK, TVB, HKTVE and other industry stakeholders to coordinate the relevant technical arrangements on the Channel Migration so as to ensure that the process will be carried out in an orderly manner. The usage of spectrum in the 500 MHz band and 600/700 MHz bands after the completion of the Channel Migration is shown at **Figure 3** of the **Annex**.

³ The DTT frequency channels used by other TVB programme channels (i.e. J2 82, TVB News 83, Pearl 84 and TVB Finance & Information 85) will remain unchanged and will not be affected by the Channel Migration arrangements.

Steps to be Taken by the Public for Continued Reception of the Programme Channels Concerned

12. The viewing public can continue to use the existing digital TV equipment (such as set-top boxes and digital TV sets, etc.), but they will need to take action, pay attention to the notices and arrangements to be promulgated by the building management offices and contractors, and rescan the programme channels on their digital TV equipment where necessary, with regard to their antenna reception systems in use (CABD systems or self-provided antennae) in order to continue to receive programme channels 31, 32, 33, 81, 96 and 99 after the Channel Migration.

Using CABD Systems

13. CABD systems⁴ and/or in-building coaxial cable distribution systems (IBCCDSs)⁵ are commonly used in public housing estates, private residential estates or multi-storey buildings. In light of the Channel Migration, incorporated owners/owners' committees and building management offices (BMOs/IOs) have to engage system contractors to reconfigure the systems (such as installing new channel amplifiers/filters, retuning the receiving frequency channels of the existing channel amplifiers, etc.) within the Digital Simulcast period. In general, the one-off cost for system reconfiguration will range from \$5,000 to \$20,000, depending on the system installed at individual buildings/estates. Such cost will usually be shared among all the units in the buildings/estates (around \$20 to \$400 per household) or be absorbed by the management fees or maintenance funds of the buildings/estates.

14. Residents of public housing estates, private housing estates or multi-storey buildings only need to pay attention to the notices of their BMOs/IOs on system reconfiguration and the arrangements of the contractors. After the completion of system reconfiguration, residents may follow the relevant instructions and rescan the programme channels on their digital TV equipment on a specific date where necessary for continued reception of the programme channels concerned. Residents may check with their BMOs/IOs if needed. OFCA will also offer advice or assistance to residents through its hotline and thematic webpage established for the

⁴ CABD system refers to an antenna and distribution system installed inside a housing estate or building to receive DTT signals transmitted via radio spectrum and distribute them to individual households.

⁵ IBCCDS refers to a coaxial cable system and the relevant equipment installed inside a housing estate or building for distributing and relaying signals for telecommunications, broadcasting and security services. It may include CABD system, Satellite Master Antenna TV system, closed circuit TV system, cable TV system, etc.

Channel Migration.

Using Self-provided TV Antennae

15. For members of the viewing public using self-provided TV antennae (i.e. the “fishbone” antennae on the rooftops), including residents of village houses, bungalows and old tenement buildings, they generally do not need to replace their existing receiving antennae and equipment, and hence will not incur any additional expenses. If they are not able to receive any of the programme channels affected by the Channel Migration after 00:00 on 1 December this year, they may rescan the programme channels on their digital TV equipment for continued reception of the programme channels concerned. They may also contact OFCA for any enquiry.

16. As in past exercises when free TV broadcasters launched new programme channels⁶, BMOs/IOs were required to engage contractors of CABD systems and/or IBCCDSs to reconfigure the systems accordingly at their own cost for reception of the programme channels concerned.

Publicity

17. OFCA will launch a series of publicity programmes for the relevant stakeholders and the general public in order to disseminate information on the Channel Migration and the preparatory work required.

Industry Stakeholders

18. To facilitate industry stakeholders to understand the details of the Channel Migration and to make early arrangements for system reconfiguration, OFCA together with the broadcasters conducted a technical briefing session for system contractors on 15 December 2020 to notify the industry in advance about the details and timeline of the Channel Migration, steps and preparatory work required for system reconfiguration, etc.

19. OFCA will continue to liaise with the broadcasters and industry stakeholders, and conduct regular meetings in order to closely monitor the implementation of the Channel Migration as well as the progress of system reconfiguration in properties and premises in different districts.

⁶ For example: TVB and Asia Television Limited launched DTT services in 2007, RTHK launched DTT broadcast in 2014, and Fantastic TV launched free TV services in 2017.

BMOs/IOs and Managers of Other Premises

20. As regards system reconfiguration in public housing estates, OFCA has notified the Hong Kong Housing Authority (HA) and the Hong Kong Housing Society (HS) of the details of the Channel Migration and assisted them in planning the preparatory work. Besides, starting from February this year, OFCA will progressively issue circular letters to inform the BMOs/IOs and managers of other premises receiving DTT (including schools, hospitals, care centres, etc.) about the details of the Channel Migration in order to facilitate their commencement of preparatory work for system reconfiguration.

21. OFCA will also liaise with District Offices (DOs) under the Home Affairs Department and, through their building management seminars, approach the BMOs/IOs in each district to enhance the provision of technical support on system reconfiguration, thereby facilitating them to disseminate to residents information about the Channel Migration and inform residents to rescan the programme channels where necessary.

General Public

22. OFCA will launch TV and radio announcements in the Public Interest starting from the second quarter of this year to widely promote the details of the Channel Migration, implementation timeline, preparatory work required, etc., in order to raise the public awareness. In the meantime, OFCA will establish a thematic webpage on the Channel Migration to provide relevant information to the public, including the methods to rescan programme channels on TV sets of major brands. Besides, OFCA will issue press releases at different stages of the Channel Migration to inform the public about the progress. OFCA will also utilise other online and offline publicity means (e.g. social media platforms, newspapers, etc.) to remind the public of the points to note on the Channel Migration as and when appropriate. In addition, OFCA will put up posters and distribute flyers at home affairs enquiry centres in various districts and government venues frequented by the public, and will contact relevant resident organisations (such as neighbourhood associations, owners' associations, etc.) through the DOs to seek their assistance in distributing posters and flyers about the Channel Migration. The public can also contact OFCA via its hotline to enquire about the related issues.

23. For residents using CABD systems to receive TV programmes, OFCA will strengthen the liaison with HA, HS, BMOs/IOs to seek their assistance in enhancing publicity in public housing estates and private

buildings/estates, informing residents of the progress of system reconfiguration and disseminating the message about rescanning the programme channels where necessary.

24. Regarding residents using self-provided TV antennae, including residents of buildings without BMOs/IOs or any form of resident organisations (commonly referred to as “three-nil buildings”), OFCA will make use of the Hongkong Post’s circular service to issue letters to remind them that if they are not able to receive any of the programme channels affected by the Channel Migration after 00:00 on 1 December this year, they may rescan the programme channels on their digital TV equipment for continued reception of the programme channels concerned. OFCA will also carry out publicity work through DOs and relevant local organisations to enhance support to residents of “three-nil buildings” for rescanning the programme channels after the Channel Migration.

25. For residents of village houses, OFCA will liaise with Heung Yee Kuk and Rural Committees to distribute flyers and display posters in rural areas. In the meantime, OFCA will also seek assistance from relevant local organisations to further promote the arrangements for the Channel Migration during their daily contact with residents, and to remind residents who are using self-provided TV antennae of the message about rescanning the programme channels on or after 1 December this year as well as the technical support available to them.

26. OFCA will continue to keep track of the feedback and response of the public in relation to the Channel Migration, and will strengthen the publicity towards the end of the Digital Simulcast period in the second half of this year. OFCA will also liaise closely with the relevant broadcasters to coordinate the publicity work in order to remind the public of the necessary steps for continued reception of the programme channels concerned.

Advice Sought

27. Members are invited to note the content of this paper and provide comments.

**Communications and Creative Industries Branch
Commerce and Economic Development Bureau
Office of the Communications Authority
1 February 2021**

Usage of 500 MHz Band and 600/700 MHz Bands

Figure 1: Before ASO (on or before 30 November 2020)

Analogue TV and DTT services used the spectrum in the 500 MHz band and 600/700 MHz bands for broadcast.

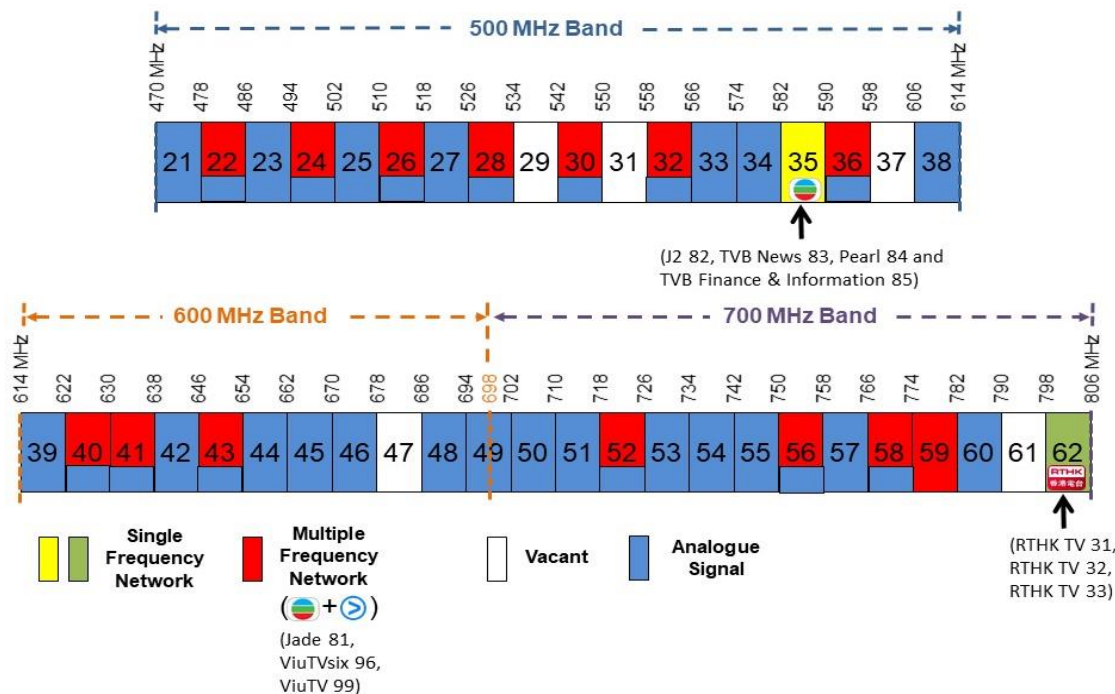


Figure 2: After ASO (on or after 1 December 2020)

The spectrum originally used for analogue TV services is no longer in use while the DTT frequency channels currently in use are still scattered in the 500 MHz band and 600/700 MHz bands.

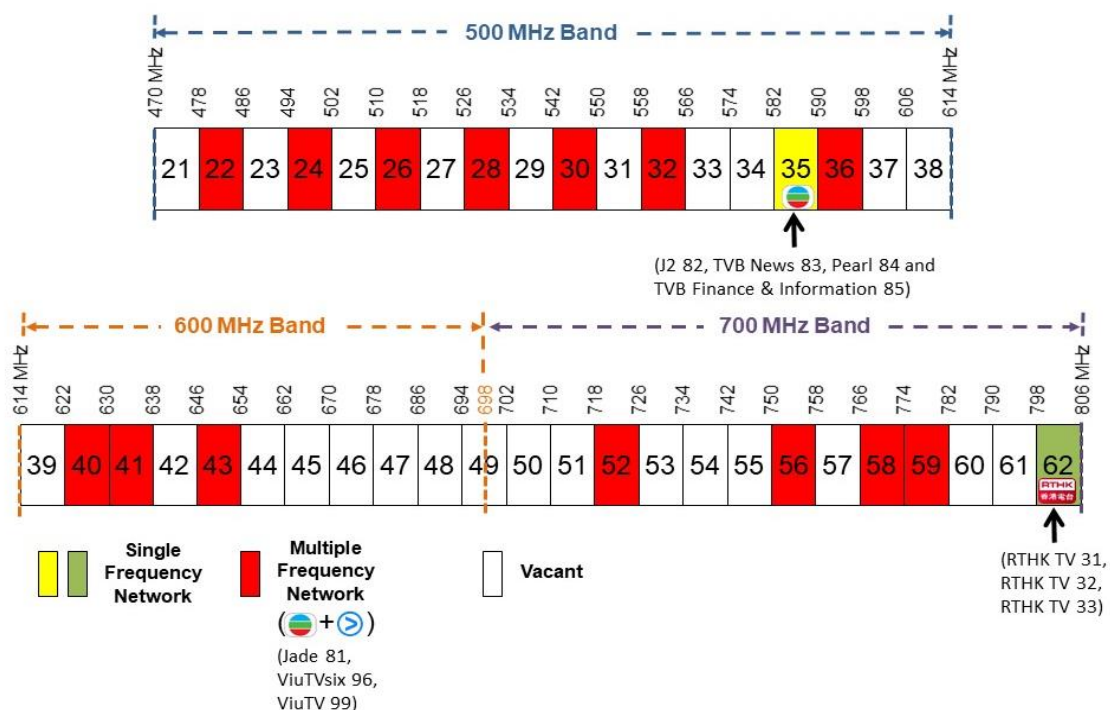


Figure 3: After Completion of the Channel Migration (on or after 1 December 2021)

DTT services will continue to use the 500 MHz band. The spectrum in the 600/700 MHz bands will be used for the provision of mobile telecommunications services.

