

**For discussion on
4 February 2013**

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

**Progress Update on the Implementation of
Digital Terrestrial Television Broadcasting**

Purpose

This paper updates Members on the latest progress of implementation of the digital terrestrial television (DTT) service. We last briefed the Panel on 12 March 2012.

DTT Network Coverage

Current coverage

2. The two domestic free television programme service licensees, namely Asia Television Limited (ATV) and Television Broadcasts Limited (TVB), are responsible for the construction of transmitting network to deliver their DTT services throughout Hong Kong. Since the launch of DTT service at end 2007, ATV and TVB have completed a total of 29 transmitting stations by phases, taking the overall DTT coverage to about 98% of the Hong Kong population.

Ultimate coverage

3. The two free-to-air broadcasters are optimising the DTT network with a view to maximising it to an extent that is on a par with that of analogue television, which is estimated to be close to 99%, by the end of 2013. At the same time, the Office of the Communications Authority (OFCA) is examining, together with the broadcasters, how to address the problem of television reception in those remote areas currently suffering from unsatisfactory television reception.

Technical issues on DTT

Change of video coding for the four digital simulcast television programme channels

4. DTT programmes are encoded into digital data which are compressed before transmission. A DTT receiver will receive, decode and then decompress the digital data for conversion into television signals for displaying on a compatible television set. When DTT was launched at 2007, the four digital simulcast¹ television programme channels were encoded with MPEG-2² compression and coding standard due to its proven performance while H.264³, a relatively new standard at the time, was adopted for the remaining new DTT services due to its better compression efficiency.

5. In view of the satisfactory performance of H.264 after the past years of deployment in DTT services, ATV and TVB jointly applied in 2011 for the change of the coding standard for the four digital simulcast television programme channels from MPEG-2 to H.264. The use of H.264 coding enhances picture quality and opens up the possibility of enhanced services such as three-dimensional television (3DTV) services, or providing more programme channels.

6. Laboratory tests and trials were carried out to evaluate any possible impact on current DTT viewers regarding the change. Based on the satisfactory results of the technical test and trial, the Communications Authority (CA) approved the change of the coding standard to take effect in October 2012.

7. ATV and TVB have publicized widely before effecting the change of coding standard on 28 October 2012. The change was

¹ Simulcast means simultaneous broadcast of the same television programme services in both digital and analogue formats.

² MPEG-2, the second set of standards for video compression and coding developed by an industry body Motion Pictures Expert Group (MPEG), is an international standard for the generic coding of moving pictures and associated audio information. It is widely used around the world to specify the format of the digital television signals that are broadcast by terrestrial, cable and satellite television systems.

³ H.264, also known as MPEG-4 Part 10, is a newer generation, as compared with MPEG-2, of video compression and coding technology written by MPEG together with the International Telecommunication Union Telecommunication Standardisation Sector (ITU-T) Video Coding Experts Group. It can match the best possible MPEG-2 quality by only half of the data transmission rate.

seamless to most television viewers. Only a very small portion of DTT receivers required re-scanning DTT channels on the receiver. A total of 69 enquiries/complaints regarding the change were received by ATV, TVB and OFCA and following the technical advice from the two broadcasters and OFCA, the concerned viewers could all resume normal television reception.

DTT Programme Channels

8. Currently, ATV and TVB are broadcasting 11 digital television programme channels, including both standard definition television (SDTV) and high definition TV (HDTV), via the three digital multiplexes⁴ assigned to the two broadcasters. A full list of DTT programme channels of ATV and TVB is set out as follows –

Channel number	Name of Channel	TV Format	Programme Description
<i>ATV</i>			
11	Home	SDTV	Digital simulcast of ATV Home Channel
12	Asia	HDTV	A variety of programmes in HDTV format
13	ATV Classic	SDTV	A collection of classic programmes produced by ATV
15	CCTV 1	SDTV	Satellite live feed of China Central Television Channel 1, an integrated channel originated from the Mainland
16	World	SDTV	Digital simulcast of ATV World Channel
17	Shenzhen Satellite	SDTV	Satellite live feed of Shenzhen Satellite Television Channel, a channel originated from Shenzhen
<i>TVB</i>			
81	Jade	SDTV	Digital simulcast of TVB Jade Channel
82	J2 Channel*	HDTV	A variety of programmes focused on young audience
83	I News*	HDTV	Programmes on news, finance and information
84	Pearl	HDTV	Digital simulcast of TVB Pearl Channel

⁴ A multiplex is a frequency channel which transmits combined television programme materials and other data in digital form. A single multiplex can allow multi-programme channel broadcasting. ATV and TVB share one multiplex to simulcast their four analogue television programme channels in digital format. In addition, each broadcaster takes up one additional multiplex each to provide new digital television programme channels and services.

Channel number	Name of Channel	TV Format	Programme Description
85	High Definition Jade*	HDTV	A variety of HDTV programme with local and overseas productions

* Interactive television service⁵ is available on these digital channels

DTT Receivers

Market supply of consumer products

9. Despite the inflation last year, the average retail price of the integrated digital television (iDTV)⁶ kept falling in 2012 as compared to that in 2011. The average price of iDTV with larger screen size (i.e. over 50 inches) had the largest drop rate of over 20% whilst those with screen size between 30 to 50 inches had decreased by more than 10%. Besides, latest iDTV models are also equipped with more features, such as 3DTV and capability of accessing video content over the Internet (e.g. smart TV).

10. As regards DTT set-top box, the overall sales volume was on the decrease in 2012. Currently, the average retail price of a set-top box without harddisk ranges between \$600-\$700, representing an average price drop of about 7% over that in the previous year.

Voluntary labelling scheme for DTT receivers

11. A voluntary labelling scheme was introduced by OFCA in November 2007 to facilitate consumers in making informed choice when purchasing DTT receivers. DTT receivers affixing with the prescribed label⁷ are capable of receiving all DTT channels (both SDTV and HDTV programmes) broadcast by ATV and TVB.

⁵ Interactive television service was launched by TVB in August 2008. Through a DTT receiver capable of supporting the interactive television service provided by TVB, viewers can access a variety of information including weather forecast, news headlines, Hang Seng index, delayed quotes of individual stock prices, etc.

⁶ An integrated digital television (iDTV) is a television set which has the digital decoder built in or “integrated”. It can receive and decode DTT signals without the need to connect an external device.

⁷ Prior to 2012, there were two DTT receiver labels: DTT receivers labelled as “basic-tier” were capable of receiving the four simulcast television programme channels encoded in MPEG-2, whereas those labelled as “higher-tier” were capable of receiving all DTT channels (both SDTV and HDTV programmes) encoded in either MPEG-2 or H.264 format. There had been no “basic-tier” receiver registered with the labelling scheme since its inception and the “basic-tier” label was deleted in 2012 after consulting the industry. See paragraph 13.

12. To enable the public to check out the brand names and models of DTT receivers that are authorised to use the labels, a register is published and regularly updated on the Internet (www.digitaltv.gov.hk). As at early January 2013, 93 models of DTT receivers are authorised to use the label, including 23 set-top boxes and 70 iDTVs.

13. Along with the change of video coding and compression standard for the four simulcast television programme channels as described in paragraphs 4 to 7 above, no more DTT programme would be broadcast in MPEG-2 coding standard. After consulting the relevant consumer electronics industry, OFCA revised the DTT receiver specification⁸ and updated the voluntary labelling scheme in accordance with the technical change in late 2012.

DTT Take-up and Publicity

DTT Take-up

14. Currently, about 70% (over 1.6 million) of the households in Hong Kong receive DTT service via set-top boxes, iDTVs or computers. The take-up rate for the past years since the launching of DTT service is tabulated below –

Date (year-end)	DTT Take up Rate (percentage of Hong Kong households)
2008	32.3%
2009	46.5%
2010	61.3%
2011	68.6%
2012	71.3%

15. We notice that the DTT take up rate has flattened at around 70% in the past two years. We will conduct a survey jointly with the broadcasters in the first quarter of 2013 to identify the key factors that may help drive up the take-up rate further. Meanwhile, we will enhance the publicity on the benefits of DTT to encourage the viewing public to switch over to DTT.

⁸ To facilitate the production of DTT receivers by the consumer electronics suppliers before DTT service was launched, OFCA published the first issue of the technical specification for DTT baseline receiver requirements (HKTA1108) in June 2007.

Publicity

16. A series of roving exhibition was arranged at six shopping centres in different districts and the Hong Kong Brands and Products Expo in March/April and December of 2012 respectively. A live television demonstration was arranged at the exhibition booth to allow visitors to experience the benefits of DTT over analogue television services. Some 7 500 persons visited our booth. We will consider organising more roving exhibitions in various districts in order to reach out to more people to promote DTT.

Website and enquiry hotline

17. The general public can find most updated information about DTT broadcasting on our dedicated digital television website (www.digitaltv.gov.hk). Since its launch in 2006, over 1.77 million visits have been made to the website. In addition, the public may also check the availability of DTT coverage and completion of upgrading work of in-building coaxial cable distribution system (IBCCDS)⁹ of individual buildings from OFCA's website (www.ofca.gov.hk). The latter is well received by the general public. From the setting up of the coverage database in OFCA's website in December 2007 to December 2012, more than 584 000 visits and over 2.6 million DTT coverage searches were made on OFCA's website. OFCA also maintains both telephone hotline and e-mail public enquiry services on DTT. During the same period, OFCA handled over 28 000 public enquiries regarding DTT. About 62% of these enquiries relate to service coverage, while the others concerned communal aerial system upgrade, various reception issues of DTT receivers, etc.

Way Forward

18. The Government will continue to closely monitor the implementation of DTT and keep in view the market development and readiness. Necessary measures will be taken to facilitate a smooth migration from analogue television to DTT.

Commerce and Economic Development Bureau
Office of the Communications Authority
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⁹ In-Building Coaxial Cable Distribution System is a coaxial cable system installed inside a building for distributing and relaying signals for telecommunications, broadcasting and security services.