For discussion on
19 February 2008

Legislative Council Panel on Information Technology and Broadcasting

Progress Update on the Implementation of Digital Terrestrial Television Broadcasting

Purpose

The Panel noted the progress of the implementation of digital terrestrial television (DTT) [1] at its meeting held on 12 November 2007. This paper updates Members on further progress over the past few months, including the relevant regulatory decisions made by the Broadcasting Authority (BA), coverage of DTT broadcasting, labelling scheme for DTT receivers as well as promotion and publicity activities.

Official Launch of DTT

2. The two free television broadcasters, namely Asia Television Limited (ATV) and Television Broadcasts Limited (TVB), officially launched DTT on 31 December 2007. The Government and the two broadcasters jointly held a launching ceremony, which was broadcast live in both digital and analogue formats to signify Hong Kong entering into the new era of digital television broadcasting.

Regulatory decisions made by the Broadcasting Authority

3. The regulation of television broadcasting is governed by

[1] DTT broadcasting, as compared with analogue broadcasting, enhances spectrum efficiency and offers opportunities of new services including multi-channel broadcasting, standard definition television (SDTV), high definition television (HDTV), broadcasting with possible interactive services, datacasting (e.g., financial quotes), etc. DTT is free from "ghosting" and "snowing" which may exist in analogue television reception.

the relevant legislation, the licence held by the broadcasters as well as the codes of practice promulgated by the BA. The BA has made a number of regulatory decisions in the light of the characteristics of digital broadcasting technologies as set out in paragraphs 4 to 10 below so as to facilitate the launch of DTT.

Soft launch

4. While earlier transmissions of DTT testing signals were more focused on testing the technical capability of the two broadcasters, a larger scale testing with new DTT programmes made available by the two broadcasters (referred to as the "soft" launch) could offer the community an early opportunity to prepare for and try out DTT services, e.g. upgrading their In-building Coaxial Cable Distribution Systems (IBCCDSs)[2] and purchasing DTT receivers.

5. To facilitate ATV and TVB to conduct their soft launch of digital television programme service channels, the BA waived the requirements for broadcasting announcements in the public interest (APIs) and BA publicity materials. ATV and TVB made their soft launch on 2 and 12 December 2007 respectively which gave an early flavor of DTT to the viewing public.

New and simulcast digital channels[3]

6. ATV and TVB are required to provide a minimum amount of news programmes, current affairs programmes and documentary programmes on the existing four channels broadcast in the analogue format (one Cantonese and one English for each broadcaster). As these programmes will continue to be required for broadcast in the digital format via the simulcast digital channels, the BA has decided

---

[2] In-Building Coaxial Cable Distribution System (IBCCDS) is a coaxial cable system installed inside a building for distributing and relaying signals for telecommunications, broadcasting and security services. It may include Communal Aerial Broadcast Distribution (CABD) system, Satellite Master Antenna Television (SMATV) system, closed circuit television system, cable television system and any combination of these.

[3] The two broadcasters are required to simultaneously provide their channels broadcast in analogue format on the DTT platform, i.e., "simulcast digital channels" (Simulcast means simultaneously broadcasting the same television programme services in both digital and analogue formats). They are also given spectrum to provide new digital channels for new and/or innovative services, such as new Standard Definition TV channels or High Definition TV channels.

not to impose additional requirements by exempting the two broadcasters from broadcasting these programmes on their new digital channels. This is to afford ATV and TVB with greater flexibility to provide more diversified programming choices to viewers.

7. Furthermore, unlike analogue broadcasting where subtitles cannot be switched off, DTT technologies allow viewers to have choice of switching on and off the subtitles (known as "closed captioning"). To enhance viewers' choice and viewing pleasure, the BA has given approval to the two broadcasters to provide subtitling in the form of closed captioning on their simulcast digital channels.

8. The BA noted that with DTT technologies enabling a multi-channel environment, ATV and TVB are able to acquire more direct live satellite feed on a full programme channel basis. Provided that the broadcaster does not insert its own advertisement or promotional materials in the acquired programme channel, the BA is agreeable to waive the requirement on the provision of APIs and BA publicity materials on their channels and has accordingly given the exemption. The BA considered that the exemption would give the broadcasters the flexibility to introduce new programme channels from outside Hong Kong through the local digital terrestrial platform, thereby enhancing the programming variety for the local viewing public.

Channel numbering

9. On the digital platform, each programme channel carries a programme channel number (known as "logical channel number") for identification by DTT receivers. Taking into account general viewing experience, views of ATV and TVB and overseas experience, the BA has determined that two-digit channel numbers should be used for the digital platform and the allocation of the leading digit should be decided by drawing lots (in case both broadcasters intended to use the same leading digit). After drawing lots, ATV was assigned with channel numbers in the range of 10 to 19 while TVB was assigned with channel numbers in the range of 80 to 89. Both broadcasters can flexibly assign their channel numbers within the allocated range.

10. As at 31 January 2008, the two broadcasters provide

altogether four simulcast channels and nine new digital channels (two of them are currently for trial broadcast) in Standard Definition TV (SDTV) or High Definition TV (HDTV) formats as follows:

Channel number	Programme Channel	Programme Description
ATV		
11	Home	Digital simulcast of ATV Home
12	News & Business	A dedicated channel for news and business
13	His TV	A channel on sports, horse-racing, touring, etc.,
14	Her TV	A channel on trendy news, pop music, fashionable clothes, body beauty, cookery, etc
15	Plus TV	An informative channel covering local programmes of culture/art and overseas documentary programmes
16	World	Digital simulcast of ATV World
17	CCTV 4	Satellite live feed of China Central Television (CCTV) Channel 4
19	HD TV (2-hour broadcast at prime time daily)	A variety of programmes in HDTV format
TVB		
81	Jade	Digital simulcast of TVB Jade
82	J2 (trial broadcast and planned to be formally launched in the 1st quarter of 2008)	A channel on entertainment/trendy news, touring, music, Asian pop dramas, etc.
83	Interactive Information (trial broadcast and planned to be formally launched in the 2nd quarter of 2008)	A channel on interactive television programmes for news, finance and information
84	Pearl	Digital simulcast of TVB Pearl

Channel number	Programme Channel	Programme Description
85	High Definition Jade	A variety of HDTV programmes with local and overseas productions

DTT Coverage

Network construction by ATV and TVB

11. DTT network construction in Hong Kong is being carried out in phases. Our plan is to provide an initial digital coverage of around 50% upon the official launch and extend it to 75% by early August 2008. Such phased construction of network is similar to the experience of other advanced economies in the world, e.g., France launched its DTT in 2005 with an initial coverage of only 35%, and it took two and a half years to extend its coverage to about 80% and it now plans to reach a coverage of 95% by the end of 2011. Japan took about three years to expand its DTT coverage from 25% to 84%.

12. The principal transmission station in Hong Kong at Temple Hill, the first to broadcast digital signals for DTT launch, serves around 50% of the population of Hong Kong. The concerned work was completed before the soft launch. ATV and TVB are working to build 5 more principal stations (see table below) in order to expand the DTT coverage to all 18 districts by early August 2008 (i.e. around 75% of the whole of Hong Kong) enabling more people to enjoy viewing the Beijing Olympic Games with digital television broadcasting. We are assisting ATV and TVB to achieve this target.

Transmission Stations	Coverage Areas	Target Completion Schedule
Temple Hill	Northern part of Hong Kong Island, Kowloon Peninsula, part of Shatin and eastern part of Lantau Island	December 2007
Castle Peak	Tuen Mun, Yuen Long, northern part of Lantau Island	August 2008
Cloudy Hill	Northern part of New Territories	August 2008

Transmission Stations	Coverage Areas	Target Completion Schedule
	(including Tai Po, Fanling, Sheung Shui)	
Golden Hill	Kwai Chung, Tsuen Wan	August 2008
Kowloon Peak	Sai Kung, eastern part of Hong Kong Island	August 2008
Lamma Island	Southern part of Hong Kong Island	August 2008

13. The phased construction of DTT network will continue, with 23 more fill-in stations to be built from 2009 to 2011. At least six of them will be completed by 2009, eight more by 2010 and the remaining nine by 2011. The ultimate DTT coverage will be at least on a par with that of the existing analogue television broadcasting.

Construction Schedule	Number of Fill-in Stations to be built	Cumulative Number of Fill-in Stations in Service
2009	6	6
2010	8	14
2011	9	23

OFTA's database service for DTT coverage information

14. On 15 January 2008, the Office of the Telecommunications Authority (OFTA) launched an on-line database for DTT service coverage. Members of the public may check and verify the DTT coverage of a particular residential building / estate against the database[4]. By end January 2008, over 40 000 visits were recorded, with about 300 000 database searches for checking DTT coverage.

15. The OFTA also provides public enquiry service through its hotline as well as other means. By end January 2008, the OFTA has received and responded to around 1,800 public enquiries via its

[4] The coverage information is obtained from estimation based on a computer model used by the OFTA for planning DTT services. There may be variations with respect to the actual coverage, which is subject to various environmental factors such as blockage or reflections of buildings in the vicinity. Residents should therefore check, if in doubt of the coverage information, with their building management office or Incorporated Owners who may in turn seek technical advice from the Communal Aerial Broadcast Distribution (CABD) system contractors about the actual reception situation.

hotline and e-mail in relation to DTT since its official launch on 31 December 2007. About 40% of these enquiries are on DTT coverage, while the others are related to IBCCDS upgrade, reception of analogue television, and reception issues of DTT receivers, etc.

In-Building Coaxial Cable Distribution System (IBCCDS) upgrade

16. In Hong Kong, free-to-air terrestrial television signals are generally received by common antenna and then distributed by the IBCCDS to individual building flats. The OFTA promulgated the specifications and guidelines for DTT reception on 1 August 2007 for the IBCCDS operators as well as Communal Aerial Broadcast Distribution (CABD)[5] system contractors to upgrade the existing IBCCDS. Since July 2007, the OFTA has conducted 23 technical briefing sessions on DTT reception for the relevant sectors, including the IBCCDS operators / CABD system contractors, property developers, building management offices, incorporated owners, etc.

IBCCDS upgrade of public housing estates

17. The Housing Authority completed the IBCCDS upgrade works for a total of 428 blocks of public rental housing buildings (in 68 estates) within the initial DTT coverage areas before the official launch on 31 December 2007.

18. The upgrading work for the rest of the public rental housing estates will be completed by August 2008. For new public estates with their construction completed within 2008 or after, the Housing Authority will have incorporated CABD systems that are DTT reception ready.

IBCCDS upgrade of private buildings

19. OFTA conducted a survey in November 2007 for private buildings, with responses received from 1 300 buildings. About 20% of the buildings concerned have already completed their IBCCDS upgrading work, while another 50% of the buildings plan to

[5] Communal Aerial Broadcast Distribution (CABD) is a system installed inside a building to receive free-to-air TV/FM signals transmitted via radio frequencies and distribute them to individual building units.

upgrade their IBCCDS within six months. We will liaise with private building management and update the survey figures so as to ascertain the DTT coverage situation in the territory on a building-to-building basis.

Access to DTT services by subscribers of Hong Kong Cable Television Limited

20. There has been public and media concern about the arrangement of upgrading IBCCDS which are connected to the Hong Kong Cable Television Limited (Cable TV) network for DTT reception.

21. Cable TV, as one of the major IBCCDS operators, has already completed the IBCCDS upgrade of public housing estates under the initial DTT coverage for receiving DTT signals before the official launch. For private buildings where Cable TV is the IBCCDS operator, incorporated owners and building managers may approach Cable TV to carry out the necessary upgrade work.

22. With regard to IBCCDS maintained by contractors other than Cable TV, incorporated owners and building managers may approach the relevant contractors to carry out the upgrading work. To enable the DTT channels to be distributed to Cable TV subscribers, interconnection of the IBCCDS to the network of Cable TV is necessary. Cable TV has already announced to the public that such an interconnection service will be provided free-of-charge at the request of the relevant parties.

Reception of existing analogue television broadcasting

23. The existing television programme channels are simulcast in both analogue and digital formats since DTT is launched. The DTT broadcasting network is designed in such a way that it will not affect the analogue broadcasting and vice versa. As early as July 2007, ATV and TVB started the transmission of DTT signals from the transmitting station at Temple Hill to test for any interference between digital television broadcasting and existing analogue television broadcasting. Based on the field measurements conducted by the OFTA and the two broadcasters during the six-month trial, the

simultaneous reception of both digital and analogue television services has been satisfactory.

24. After the official launch of DTT, the OFTA received about 160 cases reporting that the existing analogue television channels were suspected to be interfered by the DTT broadcasting, including cases where interference was reported in areas outside the initial DTT coverage such as Tuen Mun, Sheung Shui, Kwai Chung, etc. The OFTA has followed up all these cases and where necessary, conducted on-site investigations. The OFTA has in total performed over 30 on-site investigations. The result revealed that the reception of analogue broadcasting was found normal in the majority of the cases, while for cases where analogue TV reception was found affected, the problem was caused by inadvertent faults when the CABD system was upgraded for DTT reception. The OFTA has provided technical advice to the respective complainants to help resolve the reception problem. All reported cases of analog reception affected were found not related to the transmission of DTT signals. There is no interference found between DTT broadcasting and existing analogue television broadcasting.

Labelling scheme for DTT receivers

25. The majority of existing television sets, including the older cathode ray tube television sets and the more advanced plasma or LCD flat-panel television sets, are not capable of decoding DTT signals direct. Viewers will need a DTT receiver, such as a digital set-top box to be connected to their existing television set, or an integrated digital television set with a built-in digital decoder, for receiving DTT programme service.

26. In order to assist the viewing public to make an informed choice when purchasing DTT receivers, the OFTA has introduced a voluntary labeling scheme for DTT receivers in November 2007. DTT receivers labelled as “basic-tier” are capable of receiving the four existing television channels simulcast in digital format. Such receivers are suitable for those viewers who intend to improve the reception quality, e.g., to address the reception problem of “ghosting” and “snowing”, of the existing television programme channels. On the other hand, DTT receivers labelled as “higher-tier” are capable of

receiving both SDTV and HDTV programmes. The OFTA has set up a register for the public to check the brand names and models of DTT receivers which have been accepted for registering under the labeling scheme. To ensure the compliance of the receivers with the Electrical Product (Safety) Regulation, the OFTA has requested all suppliers joining the labelling scheme to provide the Electrical and Mechanical Services Department with the appropriate safety certificate for scrutiny as well.

27. As of end January 2008, the OFTA has received applications for 78 DTT receiver products under the labeling scheme. Suppliers of 22 receiver products (including one integrated digital TV set) have already been granted the higher-tier label while there has not yet been any product registered with the basic-tier label.

28. There are a variety of DTT receiver products available in the market to meet various consumer demands, including set-top box, integrated digital television set, receiver with digital recording capability, digital tuner for laptop and computer, etc. There is a pay television service provider which offers set-top boxes capable of receiving the pay television programme services as well as the DTT programmes. Subscribers can choose to purchase or rent this type of set-top box without the need to install additional decoder to watch DTT. The price of set-top box in the market ranges from $1,700 to $2,700 while those with additional digital recording capability do not have much price variation. It is expected that the supply of DTT receivers will become even more diversified and with more competitive prices as the DTT take-up increases along with the expanding coverage.

Promotion and Publicity

29. We have launched our DTT promotion and publicity activities since November 2007 and there is generally a positive response from the public. We will keep up the publicity efforts so that the public would receive the correct information of DTT and prepare for the digital take- up at their own pace.

Briefings for District Councils

30. We will conduct briefings for individual District Councils starting from February 2008, covering first those districts under the initial DTT coverage.

Technical briefings for IBCCDS upgrade

31. The OFTA will continue to conduct technical briefings on IBCCDS upgrade for the relevant sectors on a need basis. Interested parties may contact the OFTA to make the arrangement.

General viewing public

32. A series of television and radio APIs have been launched. Leaflets and posters are distributed to the public via the district offices, public libraries, management offices of public estates, consumer electronics retail outlets. Educational kits targeting students in schools will be distributed in the first quarter of 2008. We have also been updating our dedicated digital television website www.digitaltv.gov.hk to provide the public with the latest information on DTT.

33. We also have collaboration with the Consumer Council to publicise and educate the public on DTT matters. We work closely with the Consumer Council to monitor the market situation of DTT receivers so that consumers' interests can be well protected.

Environmental Protection Concern arising from Disposal of Old Television Sets

34. We also note that there has been public concern about replacement and disposal of old television sets due to the switch to DTT.

35. Viewers are free to switch to DTT at their own pace. According to the general experience of DTT switchover in overseas economies, consumers will switch over to DTT progressively. It is expected that Hong Kong will follow similar pattern and take several

years to migrate to full digital television broadcasting. According to the statistics of the Environmental Protection Department (EPD), over 80% of the waste electrical and electronic equipment (WEEE) (including television sets) are recovered and less than 20% would be disposed of at landfills.

36. Nevertheless, we will continue to disseminate green messages to the public on the use and disposal of television sets. In addition, the EPD has been collaborating with voluntary organisations for a territory-wide recovery programme aiming to channel WEEE for reuse and recycling. WEEE, including old television sets, is collected at various collection centres and brought to the recycling workshops for necessary processing for reuse and recycling, so that the quantity of WEEE to be disposed of at landfills could be reduced.

37. We will, in collaboration with EPD, explore with the trade associations of consumer electronics products possible arrangement to further reinforce and optimise WEEE reuse and recycling. We would aim for smooth migration from analogue to digital television broadcasting, while at the same time ensuring that our environment is protected by minimising WEEE disposal as far as possible.

Commerce and Economic Development Bureau
Office of the Telecommunications Authority

February 2008