For discussion on
10 January 2011

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) services.

DTT Network Rollout and Service Coverage

Construction of DTT transmitting stations

2. The two domestic free television programme services licensees, namely Asia Television Limited (ATV) and Television Broadcasts Limited (TVB), commenced digital broadcasting of their free-to-air television channels at the end of 2007, providing an initial coverage of 50% of the population. The construction of the digital broadcast network follows a phased approach with a view to extending the coverage of DTT services progressively across the territory.

3. In accordance with the requirements stipulated in the licences of ATV and TVB, the two broadcasters completed six principal transmitting stations and six fill-in stations by end 2009 and achieved a digital coverage of 85% of the population across 18 districts throughout Hong Kong. The 12 stations and their coverage areas are set out in **Annex A**.

4. By the end of 2010, six more fill-in stations were competed. Two are scheduled for completion by early January this year. With the rollout of these fill-in stations, the digital coverage will be extended to 89% of the population. The covered areas of the eight fill-in stations are set out in **Annex B**. The locations of the 20 stations are set out in **Annex C**.

5. It is planned that another nine fill-in stations are to be constructed by end 2011 by the two broadcasters. The ultimate DTT coverage will be at least on par with that of the current analogue television broadcasting. In the network planning for DTT broadcasting, ATV, TVB and the Office of the Telecommunications Authority (OFTA) will examine how best to maximise the DTT coverage and, at the same time, endeavour to address the problem of television reception in those remote areas currently suffering from unsatisfactory analogue television reception.

DTT take-up and public response

6. The viewing public has been switching from analogue to DTT at a steady pace. According to the latest public survey conducted in September 2010, about 61% of the families in Hong Kong (representing some 1.4 million television households territory-wide) receive DTT services via set-top boxes, integrated digital TV (iDTV) sets (i.e. TV sets with built-in decoders) and computers. The details of the take-up situation from early 2008 to September 2010 with the use of set-top box, iDTV or computer are set out in **Annex D**.

On-line database for DTT coverage and reception

7. Since the launch of DTT services, OFTA has introduced an on-line database via its website (www.ofta.gov.hk) to facilitate checking of the status of DTT coverage and completion of upgrading work of in-building coaxial cable distribution system (IBCCDS)[1] in a particular residential or commercial building for DTT reception. In addition to the basic function of keyword search by input of an address of a building or an estate under concern, OFTA has enhanced the database to facilitate graphical search by clicking a location on a map. The provision of the database has been well received by the general public. From December 2007 to mid-December 2010, there were more than 500 000 visits and over 2.2 million DTT coverage searches of the database made.

8. To cope with the additional areas covered brought by the newly launched fill-in stations, OFTA will renew the on-line database in early 2011 to include the updated building list under the new DTT coverage areas and the latest upgrading status of the IBCCDS of the buildings in the areas newly covered.

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[1] 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.

DTT Programme Channels

9. ATV and TVB are running 12 digital television programme channels over the DTT platform via the three digital multiplexes[2] assigned to the two broadcasters. The programmes include both standard-definition television (SDTV) and high-definition television (HDTV) channels. There are round-the-clock news reporting channel and a wide variety of entertainment channels originated from Hong Kong, Mainland and Taiwan, providing a wide variety of choice to viewers. A full list of DTT programme channels of ATV and TVB is set out as follows -

Channel number	Name of Channel	Programme Description
ATV		
11	Home	Digital simulcast of ATV Home Channel
12	HD Channel	A variety of programmes in HDTV format
13	TVS	A Cantonese channel originated from the Guangdong province
14	CTI-Asia	A Taiwanese channel for the greater China region
15	CCTV 4	Satellite live feed of China Central Television Channel 4, an international channel originated from the Mainland
16	World	Digital simulcast of ATV World Channel
17	Shenzhen Satellite Channel	Satellite live feed of Shenzhen Satellite Television Channel, a channel originated from Shenzhen

[2] A multiplex is a digital transmission frequency channel which combines television programme materials and other data in digital form for transmission via a frequency channel. This makes multi-channel broadcasting feasible over a single multiplex. ATV and TVB share one multiplex to simulcast (i.e., simultaneously broadcast) their four analogue television programmes in digital format. In addition, each broadcaster takes up one additional multiplex to provide new digital television programme channels and services.

Channel number	Name of Channel	Programme Description
TVB		
81	Jade	Digital simulcast of TVB Jade Channel
82	J2 Channel*	A variety of programmes focused on young audience
83	I News*	Programmes on news, finance and information
84	Pearl	Digital simulcast of TVB Pearl Channel
85	High Definition Jade Channel*	A variety of HDTV programme with local and overseas productions

* Interactive television service[3] is available on these digital channels

Market Supply of DTT Receivers

Voluntary labelling scheme for DTT receivers

10. OFTA introduced in November 2007 a voluntary labelling scheme to help consumers make informed choices when purchasing DTT receivers in the market. Eligible receivers capable of receiving local DTT programme channels and fulfilling the prescribed technical requirements are allowed to be affixed with designated labels[4] issued by OFTA. The public may check the brand names and models of DTT receivers that are authorised to use the labels via a register available on the Internet (www.digitaltv.gov.hk). As at mid-December 2010, OFTA has authorised 199 models of DTT receivers to use the "higher-tier" label, including 60 set-top boxes and 139 iDTV sets.

Market supply of consumer products

11. iDTV has gradually become dominant in the market sector of

[3] Interactive television service was launched by TVB in August 2008. Through a DTT receiver capable to support 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.

[4] DTT receivers labelled as "basic-tier" are capable of receiving the four TV programme channels simulcast in the digital format, whereas those labelled as "higher-tier" are capable of receiving all DTT channels of both SDTV and HDTV programmes.

flat panel television. Over 90%[5] flat-panel television sets sold in the retail consumer electronics market are now iDTV. The variety and choice of iDTV are diverse in the market while the price continues to be decreasing. The average price of iDTV has dropped by more than 10%[5] as compared with that of last year. As regards set-top box, many consumers prefer to use it also as a digital recording device. By making use of the seven-day electronic programme guide[6] of DTT broadcasting and a mass storage media (e.g. external or built-in hard disk), digital recording has become relatively simple, convenient and user-friendly. The capability of recording HDTV programmes directly by equipping a DTT set-top box is also an advantage over an ordinary personal video recorder (PVR) which is capable of recording in SDTV format only. The average price of set-top box without a hard disk has continued to decrease at a moderate rate and is currently around $700 – $800[5]. Using computer accessories (e.g. TV cards and USB tuners) also provides an alternative and cheaper option for users to view DTT through computer at a relatively low cost.

12. It is anticipated that the sales of iDTV will continue to dominate in the consumer electronics market while taking set-top box as a PVR will remain an option for consumers as DTT take-up continues to grow.

DTT Publicity

Publicity

13. To tie in with the launch of the eight new fill-in stations and the increased coverage set out in paragraph 4 above, we have arranged publicity activities in January this year, e.g. issuing a joint letter with ATV and TVB to all Incorporated Owners and/or building management offices in the newly covered areas to encourage them to prepare for upgrading work of their IBCCDS for reception of DTT services, distributing posters and leaflets to the community through the public enquiry service centres of district offices, management offices of public estates, public libraries and the consumer electronics retail outlets.

Website and enquiry hotline

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[5] According to the Retail Audit Report (January to October 2010).

[6] The guide is an application providing on-screen listing and navigation of programme services to assist a user of digital television to identify and select the intended programme service for viewing and/or recording.

14. The Government has launched a dedicated digital television website (www.digitaltv.gov.hk) through which regular updates and related information about DTT are publicised to the industry and the viewing public. In addition to the hotline, OFTA also provides e-mail service to deal with public enquiries starting from February 2006. From end-December 2007 to mid-December 2010, OFTA has received and responded to over 22 000 public enquiries regarding DTT. About 60% of these enquiries are related to DTT coverage, while the others concerned IBCCDS upgrade, reception of analogue television, and reception issues of DTT receivers, etc.

Way Forward

15. Through publicity and public education, we have been encouraging the viewing public to gradually switch to DTT to enjoy the benefits brought by digital broadcasting. However, nearly 40% of the households are still watching analogue television. While the switch from analogue to DTT continues, we are not yet in a position to determine when the best timing is for the analogue switch-off. The Government will closely monitor developments including the actual market situation, the prevailing DTT take-up rate, etc. and make appropriate arrangements to ensure a smooth migration from analogue television to DTT.

Commerce and Economic Development Bureau
Office of the Telecommunications Authority
January 2011

Annex A

First 12 DTT Transmitting Stations Currently In Service

No.	Station name	Coverage Areas (note)	Estimated population served
1	Temple Hill	Quarry Bay, North Point, Wan Chai, Central & Western, Yau Tsim Mong, Kowloon City, Wong Tai Sin, Sham Shui Po, Sha Tin, Cheung Chau, Discovery Bay	~ 50% of Hong Kong Population
2	Kowloon Peak	Siu Sai Wan, Chai Wan, Shau Kei Wan, Sai Kung, Tseung Kwan O, Yau Tong, Kwun Tong	~25% of Hong Kong Population
3	Golden Hill	Lai Chi Kok, Kwai Chung, Tsing Yi, Tsuen Wan, Ting Kau, Sham Tseng, Tsing Lung Tau	
4	Castle Peak	So Kwun Wat, Tuen Mun, Lam Tei, Yuen Long, Tin Shui Wai, Tung Chung	
5	Cloudy Hill	Ma On Shan, Ma Liu Shui, Tai Po, Fanling, Sheung Shui, Lo Wu	
6	Lamma Island	Repulse Bay, Wong Chuk Hang, Ap Lei Chau, Aberdeen, Pok Fu Lam, Lamma Island	
7	Mount Nicholson	Happy Valley, Causeway Bay, Wan Chai	

No.	Station name	Coverage Areas (note)	Estimated population served
8	Sheung Yeung Shan	Tseung Kwan O, Sheung Yeung, Ha Yeung, Sheung Sze Wan	~ 10% of Hong Kong Population
9	Sai Wan Shan (Chai Wan)	Chai Wan, Siu Sai Wan	
10	Piper's Hill	Cheung Sha Wan, Sham Shui Po	
11	Brick Hill	Aberdeen, Shouson Hill, Repulse Bay, Chung Hom Kok	
12	Beacon Hill	Hin Tin, Tai Wai	

Note: The regions listed are covered entirely or partially by the DTT signals.

Annex B

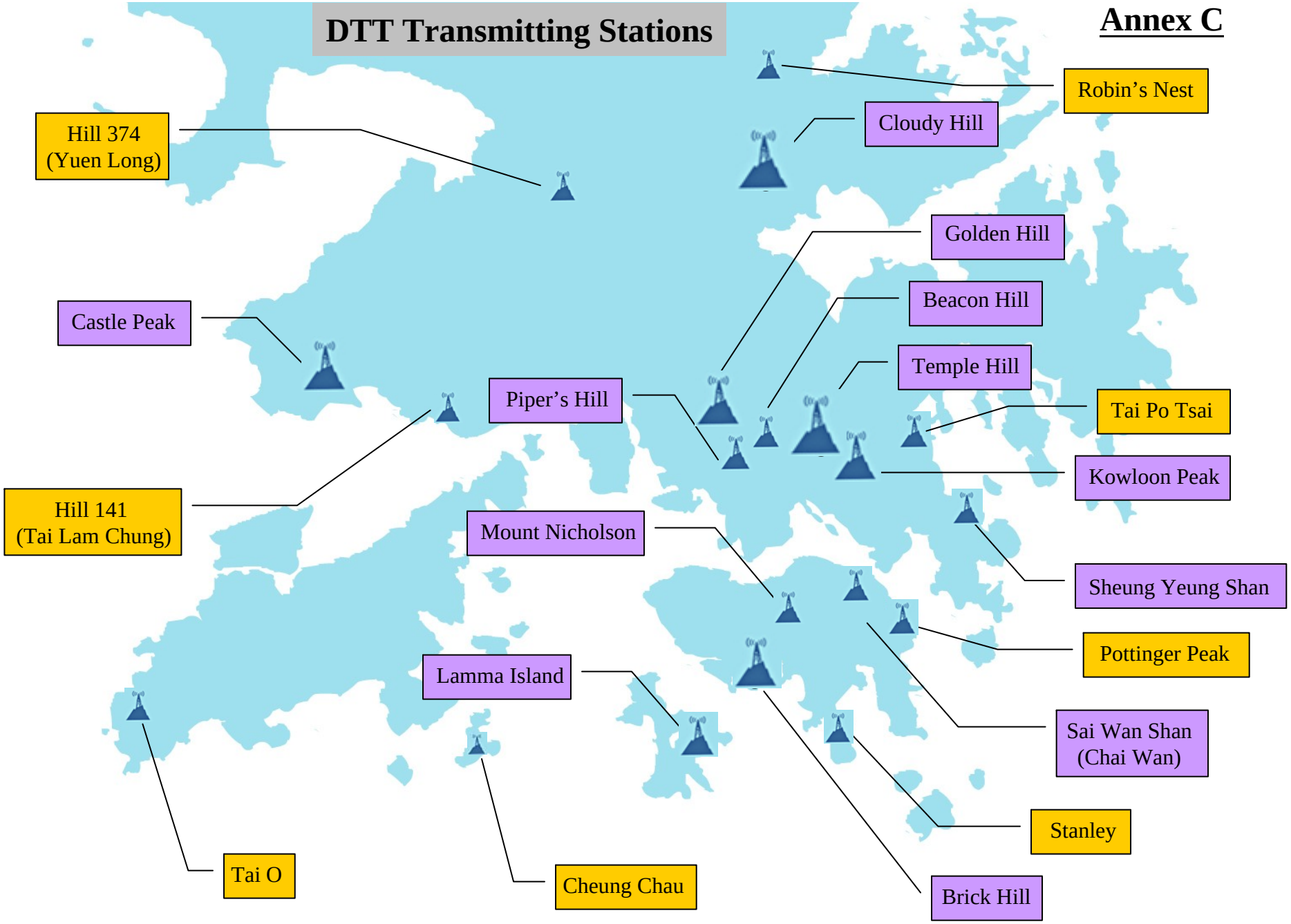
DTT Fill-in Stations Launched in Late 2010 / Early 2011

No.	Station name	Coverage Areas (note)	Estimated population served
1	Hill 374 (Yuen Long)	Yuen Long, Mong Tseng Wai, Shui Bin Tsuen	~ 4% of Hong Kong Population
2	Pottinger Peak	Shek O, Hok Tsui (Cape D'Aguilar)	
3	Stanley	Stanley, Red Hill	
4	Cheung Chau	Cheung Chau	
5	Hill 141 (Tai Lam Chung)	Tai Lam Chung	
6	Tai Po Tsai	Tai Po Tsai	
7	Robin's Nest	Shan Tsui, Yim Liu Ha, Luk Keng, Ping Che , Kwan Tei	
8	Tai O	Tai O	

Note: The regions listed are covered entirely or partially by the DTT signals.

DTT Transmitting Stations

Annex C

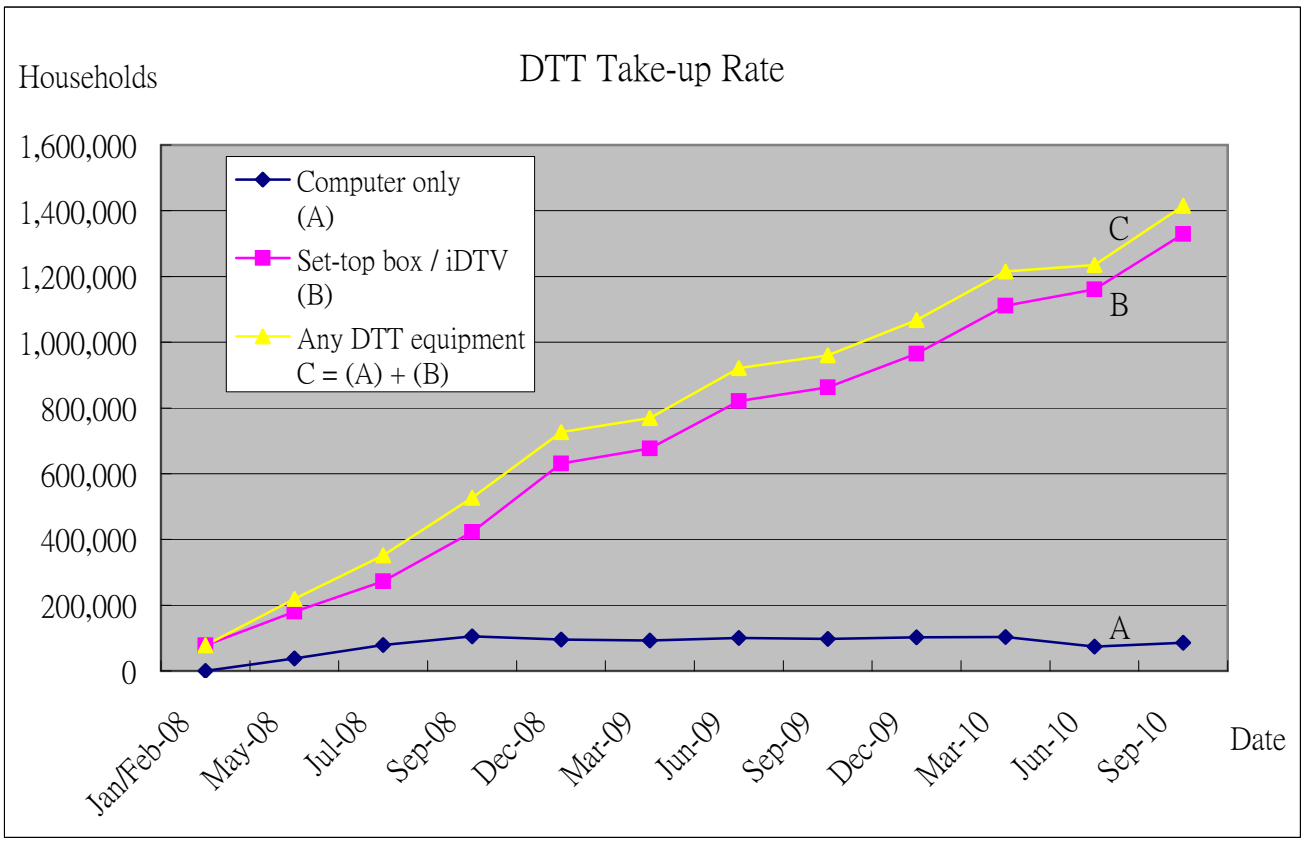


Annex D

Digital Terrestrial Television (DTT) Take-up Rate (January 2008 - September 2010)

Total Hong Kong households (2008) = 2,251,900
Total Hong Kong households (2009) = 2,293,200
Total Hong Kong households (2010) = 2,317,500

	DTT Households receiving DTT via [note]					
	Computer only (A)		Set-top box / iDTV (B)		Any DTT equipment C = (A) + (B)	Take-up Rate (%)
Jan/Feb-08	N/A	N/A	78,156	3.5%	78,156	3.5%
May-08	38,260	1.7%	180,474	8.0%	218,734	9.7%
Jul-08	78,833	3.5%	272,321	12.1%	351,154	15.6%
Sep-08	104,782	4.7%	422,181	18.7%	526,963	23.4%
Dec-08	95,744	4.3%	631,205	28.0%	726,949	32.3%
Mar-09	92,670	4.0%	676,941	29.5%	769,611	33.6%
Jun-09	100,435	4.4%	820,604	35.8%	921,039	40.2%
Sep-09	97,833	4.3%	862,612	37.6%	960,445	41.9%
Dec-09	102,033	4.4%	965,232	42.1%	1,067,265	46.5%
Mar-10	103,342	4.5%	1,111,607	48.0%	1,214,949	52.4%
Jun-10	74,035	3.2%	1,160,572	50.1%	1,234,606	53.3%
Sep-10	85,243	3.7%	1,329,281	57.4%	1,414,525	61.0%



Note: Projected number of households based on the survey result of an average sample size of 1000 households randomly selected by computer aided telephone interviewing.