

**For discussion on
10 June 2008**

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

**Coverage and Availability of Domestic Free
and Pay Television Programme Services**

Purpose

This paper informs Members of the current coverage of domestic free television programme service and the Government's plan of extending it to areas of poor analogue television reception.

Domestic Free Television Programme Service

Free-to-air Analogue Terrestrial Television Service

2. Free-to-air terrestrial television service is the most pervasive form of electronic media in Hong Kong. Such service, transmitted via airwaves, should generally be as widely receivable by the public as practical. Free-to-air terrestrial television broadcasters used to provide their services in analogue format via airwaves transmitted from their main transmitting stations. Good reception of analogue terrestrial television generally requires direct line-of-sight propagation of signals from the transmitting stations to the receiving antennas. Areas obstructed by natural terrain (e.g. remote villages in rural areas where signals are blocked by hilly terrain) or man-made structure (e.g. old buildings in urban areas where signals are blocked by new, taller buildings) would experience the problem of poor television reception, which includes –

- (a) ghosting due to multi-path reflections by neighbouring objects such as buildings, undulating terrain or sea surface;
- (b) snowing due to weak signals; and

- (c) blackout due to total absence of signals.

For analogue broadcasting, the problem is solved by constructing transposers to relay television signals from the main transmitting stations to serve areas of poor reception. This is subject to technical feasibility and resource constraint. Also, additional frequencies have to be identified for operation of new transposers to avoid interference among the existing and new transposers. And, construction of new transposers requires hilltop or rooftop sites and involves financial implications which are borne by the broadcasters or the local communities.

Overseas Experience

3. In the UK, commercial terrestrial television broadcasters cover 90% of the population through major transmitting stations. Public service broadcasters are mandated to build supplementary stations to serve communities with more than 200 households which include locations scattered in remote or mountainous regions as well as localised urban areas where topography or buildings obstruct the signal from major transmitters. Together 98.5% of the population is covered.

4. For smaller communities with poor television reception, they need to build self-help relay stations at their own costs to relay television signals from a transmitter in the terrestrial television transmission network. There are around 260 self-help relay stations throughout the UK. Similar practice is found in other jurisdictions such as Japan and France.

Local Practice

5. In Hong Kong, free terrestrial television services are provided by the two commercial broadcasters, namely, Asia Television Limited (ATV) and Television Broadcasts Limited (TVB). The coverage requirement is stipulated in the relevant provisions under the Broadcasting Ordinance (BO) (Cap. 562) and the domestic free television programme service licences of ATV and TVB. Under

the BO, terrestrial television services should be receivable throughout Hong Kong to the satisfaction of the Broadcasting Authority (BA) unless otherwise exempted by the BA. To ensure consistency and transparency, the BA has set out the Guideline on Exemption from Service Provision Requirements (the Exemption Guideline) which is issued under the BO to give clear indication to the industry and the public on the exemption criteria.

6. The Exemption Guideline, which is formulated with a view to striking a balance between enabling the public to receive free television services and investment by the licensees in building transposers, sets out two basic criteria for exempting the licensees from the coverage requirement :

(a) Population density

The broadcasters are normally exempted from serving those areas where the populations affected by poor television reception are less than 2 000 persons with an area of a radius of 3 km; and

(b) Technical feasibility

This includes, without limitation, the availability of interference-free frequency channels in the television broadcasting band for the operation of the transposers, and the availability of suitable transposer sites.

7. Based on the above two criteria, the two broadcasters are required to gradually improve television reception for areas where they are not exempted from providing television service. Since 1988, the BA has directed ATV and TVB to build television transposers at a rate of not more than two per year and the two broadcasters have now set up a total of 40 transmitting stations for coverage across the territory. Please see **Annex A** for the list of transmitting stations and their locations.

8. Owing to the hilly terrain of the territory and high density of tall buildings in the urban areas, there are still areas (such as

remote areas in Sai Kung, Yuen Long, Tai Po, Sha Tau Kok, Lantau Island, etc. or localised urban areas with older low-rise buildings) suffering from poor reception of terrestrial television services. Similar to the UK's practice set out in paragraph 4 above, residents, rural committees, District Councils, or developers of new buildings may apply to the Office of the Telecommunications Authority (OFTA) for a Broadcast Radio Relay Station Licence under the Telecommunications Ordinance (Cap. 106) to install and operate low-power self-help television transposers to improve television reception in such areas. Currently, there are 11 self-help transposers operating across the territory. Please see **Annex B** for the list of self-help transposers.

B

9. With the transmission network of the two broadcasters and the self-help transposers, analogue terrestrial television service is currently receivable by more than 99% of the population in Hong Kong.

Rollout of Digital Terrestrial Television Service

10. Terrestrial television has entered into the digital era with the launch of digital terrestrial television (DTT) since 31 December 2007. Analogue services are simulcast in digital format and new digital channels have been introduced with new features and better audio-visual quality.

11. Since Temple Hill transmitting station commenced operation, the DTT service now covers 50% of the population. To enable more people to enjoy viewing of the Beijing Olympics with DTT, the two broadcasters have brought forward their plan to complete construction of six additional stations and extend digital coverage to 75% of the population from end 2008 to early August 2008. The coverage of the Temple Hill transmitting station and the six additional stations is set out in **Annex C**.

C

12. To further extend the DTT coverage, the two broadcasters have pledged to build 22 relay stations within three years from 2009 to 2011 so that DTT coverage after completion of all these DTT transmitting stations will be at least on a par with, if not better than,

that provided by the existing analogue television transposers. Generally speaking, these digital relay stations will be co-located with, or in close proximity to, the analogue counterparts.

Improvement to Existing Reception Problem

13. DTT broadcasting is superior to analogue television broadcasting. Unlike analogue broadcasting, digital broadcasting does not require direct line-of-sight reception. Digital signals can be satisfactorily received even at a much lower signal level and are immune from multi-path interference. The implementation of DTT will therefore improve television reception and resolve reception problems, particularly ghosting and snowing, experienced in some urban and rural areas.

14. As the two broadcasters have already pledged to construct 22 digital relay stations from 2009 to 2011, there should be scope for more comprehensive planning with a view to maximising the population coverage and addressing the current reception problem, particularly in the remote areas. The Government and the two broadcasters will jointly conduct a detailed planning study once the six transmitting stations set out in paragraph 11 are up and running by August this year. Subject to the outcome of the study (which is expected to be available by early 2009), the Government and the two broadcasters will examine how the 22 digital relay stations should be deployed with a view to yielding maximum coverage of services soonest and farthest possible. We will invite the BA to review the Exemption Guideline under the BO and give consideration to lowering the population threshold. Once decided, ATV and TVB would be directed to construct additional transmitting stations to extend DTT coverage to the remaining areas with poor television reception.

Domestic Pay Television Programme Service

15. With respect to provision of domestic pay television programme service, as subscription is voluntary, it is more a commercial matter for the operators to consider.

16. Pay television operators are required to propose the coverage of their service when applying for a licence. The proposed service coverage would be incorporated in the licensees' proposals as rollout milestones upon grant of licence, with which the licensees have to comply at all times. All the three domestic pay television programme service licensees, namely, Hong Kong Cable Television Limited, PCCW Media Limited and TVB Pay Vision Limited, have fulfilled their respective milestones and achieved coverage of more than 90% of the population.

17. The domestic pay television programme service licensees generally intend to extend their service coverage with a view to meeting the growing consumers' demand. On top of extending their hybrid fibre coaxial cable or broadband networks, the operators also deploy additional transmission means such as satellite or microwave multipoint distribution system to serve their clientele in remote areas. As mentioned above, domestic pay television service now covers most of the areas in Hong Kong.

**Communications and Technology Branch,
Commerce and Economic Development Bureau and
Office of the Telecommunications Authority**

June 2008

Locations of Analogue Television Transposers of ATV and TVB



List of Analogue Television Transposers of ATV and TVB

| 6 Principal Stations | |
|-----------------------------|-------------------------------|
| 1 | Temple Hill |
| 2 | Kowloon Peak |
| 3 | Cloudy Hill |
| 4 | Golden Hill |
| 5 | Lamma Island |
| 6 | Castle Peak |
| Hong Kong Island | |
| 7 | Pottinger Peak |
| 8 | Chai Wan |
| 9 | Stanley |
| 10 | Mount Nicholson |
| 11 | Brick Hill |
| 12 | Ap Lei Chau |
| 13 | Pok Fu Lam |
| 14 | Central and Western Districts |
| Kowloon | |
| 15 | Hang Hau Village |
| 16 | Tseung Kwan O Village |
| 17 | Chiu Keng Wan Shan |
| 18 | Cha Kwo Ling |
| 19 | Beacon Hill |

| 20 | Piper's Hill |
|------------------------|--------------------------|
| 21 | Kau Wah Keng |
| New Territories | |
| 22 | Sheung Yeung Shan |
| 23 | Tai Po Tsai |
| 24 | Tui Min Hoi |
| 25 | Robin's Nest |
| 26 | Tai Pak Tin (Kwai Chung) |
| 27 | Tsuen Wan |
| 28 | Tsing Yi |
| 29 | Ying Pun |
| 30 | Hill 374 (Yuen Long) |
| 31 | Shek Kong |
| 32 | Sham Tseng |
| 33 | Hill 297 (Yuen Long) |
| 34 | Hill 141 (Tai Lam Chung) |
| 35 | Fu Tei |
| 36 | Tuen Mun |
| 37 | Cheung Chau |
| 38 | Hill 275 |
| 39 | Tung Chung |
| 40 | Tai O |

List of Analogue Self-help Television Transposers

| Item | Self-help Transposers | Coverage Areas |
|-------------|---|--|
| 1 | Shek Pik, Lantau Island | Quarters of Correctional Services Department |
| 2 | Wang Chau, Yuen Long | Wang Chau, Yuen Long |
| 3 | Hong Lok Yuen, Yuen Long | Hong Lok Yuen, Yuen Long |
| 4 | On Lok Road, Yuen Long | On Lok Road, Yuen Long |
| 5 | Ma Wan Cultural and Recreational Centre | Ma Wan Main Street |
| 6 | Royal Ascot, Shatin | Lok Lo Ha Village, Shatin |
| 7 | Lam Tei, Tuen Mun | Lam Tei, Tuen Mun |
| 8 | Tin Liu Village, Ma Wan | Tin Liu Village, Ma Wan |
| 9 | Pan Chung Tsuen , Tai Po | Pan Chung, Tai Po |
| 10 | Yoho Town, Yuen Long | Sheung Yau Tin Tsuen, Yuen Long |
| 11 | Sha Tau Kok Fire Station | Sha Tau Kok |

Coverage of Digital Terrestrial Television Transmitting Stations

| Transmitting Station | Coverage Areas | Launch Schedule |
|-----------------------------|--|------------------------|
| 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 | Service launched |
| Kowloon Peak | Siu Sai Wan, Chai Wan, Shau Kei Wan, Sai Kung, Tseung Kwan O, Yau Tong, Kwun Tong | July 2008 |
| Golden Hill | Lai Chi Kok, Kwai Chung, Tsing Yi, Tsuen Wan, Ting Kau, Sham Tseng, Tsing Lung Tau | July 2008 |
| Castle Peak | So Kwun Wat, Tuen Mun, Lam Tei, Yuen Long, Tin Shui Wai, Tung Chung | July 2008 |
| Cloudy Hill | Ma On Shan, Ma Liu Shui, Tai Po, Fanling, Sheung Shui, Lo Wo | August 2008 |
| Lamma Island | Repulse Bay, Wong Chuk Hang, Ap Lei Chau, Aberdeen, Pok Fu Lam, Lamma Island | August 2008 |
| Mount Nicholson | Happy Valley, Causeway Bay, Wan Chai | August 2008 |