

**For discussion on  
9 December 2013**

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

**Establishment of Fill-in Stations for  
the Digital Terrestrial Television Service  
of Radio Television Hong Kong**

**PURPOSE**

This paper invites Members' views on the proposal to establish 22 digital terrestrial television (DTT) fill-in stations to extend the network coverage of Radio Television Hong Kong's (RTHK) DTT services from 75% to around 99% of Hong Kong's population.

**BACKGROUND**

2. The Chief Executive-in-Council decided in September 2009 that RTHK should be tasked to fulfill the role of the public service broadcaster (PSB) in Hong Kong, and that RTHK should be allocated resources and frequency spectrum so that it may develop an all-round broadcasting service to the community, including the provision of dedicated digital television (TV) channels.

3. Given that RTHK does not have any previous experience in the operation of a TV station, it will develop its DTT service in a progressive and step-by-step manner. In this regard, the first and foremost task of RTHK is to establish a DTT transmission network. Upon the establishment of the transmission network and subject to progress of the other preparatory work, RTHK may develop its DTT services progressively according to the needs of the community.

4. To provide the DTT service, RTHK has been developing the technical infrastructure by phases. Similar to the two existing free TV licensees, i.e. Asia Television Limited (ATV) and Television Broadcasts Limited (TVB), RTHK needs to develop its DTT transmission network via some key hilltop sites (for covering large geographical areas) and a number of fill-in stations (for covering the areas not covered by the key hilltop sites). To achieve cost effectiveness and save time in establishing RTHK's DTT network, RTHK's development strategy is to set up transmission facilities at the existing network stations of ATV and TVB so as to share space, electricity supply and transmission antennae at their existing sites. RTHK has established the transmission facilities on four hilltop sites, namely Temple Hill, Kowloon Peak, Castle Peak and Golden Hill by April 2013. Transmission facilities on three more hilltop sites, namely Mount Nicholson, Cloudy Hill and Lamma Island are scheduled for completion by the end of 2013. Upon completion of these sites, RTHK's DTT network coverage will reach about 75% of Hong Kong's population.

## **JUSTIFICATION**

### **Geographical need**

5. Given Hong Kong's mountainous terrain and dense clusters of high-rise buildings, it is essential to establish a total of 22 fill-in stations to further extend RTHK's DTT network coverage so that various parts of the territory can be covered. This is similar to what is being done by the two incumbent free TV licensees.

6. The proposed fill-in stations are to be established at the existing sites of fill-in stations of ATV and TVB to achieve cost effectiveness. The proposal will provide an essential and cost effective supplementary network to enhance the coverage of RTHK's DTT service from about 75% to around 99% of Hong Kong's population.

7. As the PSB in Hong Kong, one of the objectives of RTHK is to provide quality TV services that are not adequately provided by commercial TV broadcasters, and to provide a diversity of TV programmes to serve a broad spectrum of audiences and cater to the needs of the minority interest groups. To effectively fulfill this objective, we consider it necessary and in the public interest for RTHK's DTT service coverage to reach around 99% of the territory's population, matching that of the other commercial DTT broadcasters. Without establishment of the supplementary network of fill-in stations, about 24% of Hong Kong's population will be deprived of access to RTHK's DTT programmes.

### **Development of RTHK's DTT service**

8. RTHK will be providing DTT service with three high definition TV channels. Since 1 July 2012, RTHK has been conducting signal tests for the TV channels and will start trial of DTT channel transmission from January 2014. The proposed supplementary network of fill-in stations is planned for completion by 2018 when RTHK's DTT service is planned for 24-hour broadcast.

### **FINANCIAL IMPLICATIONS**

9. We estimate that the capital cost of the project will be \$64.2 million, with the breakdown as follows -

	<b>\$ million</b>
(a) Construction of equipment cubicles	11.4
(b) Procurement and installation of DTT transmission equipment –	46.3
(i) DTT Transmitters/On-channel Transposers	18.4
(ii) Radio Frequency (RF)	8.3

Combiners	
(iii) Studio-to-Transmitter Link Equipment	8.4
(iv) Supervisory Control and Data Acquisition system	11.2
(c) Contingency (11% of item (a) and (b))	6.5
<b>Total</b>	<b>64.2</b>

10. Regarding paragraph 9(a) above, subject to detailed site investigation, it is estimated that about 14 sites require construction of a cubicle to install the transmission equipment, at a cost of about \$0.8 million per site.

11. Regarding paragraph 9(b) above, the equipment listed out in items (i) to (iv) is required for the 22 fill-in stations for the transmission of the DTT signals and operation of the fill-in stations. The cost of installation of electrical and mechanical equipment is also included.

12. Regarding paragraph 9(c) above, contingency is provided for any unforeseen circumstances during project implementation such as unforeseen site conditions.

13. The estimated cash flow requirement for the project is as follows –

<b>Year</b>	<b>\$ million</b>
2014-15	17.0
2015-16	18.7
2016-17	17.1
2017-18	11.4
<b>Total</b>	<b>64.2</b>

14. The additional recurrent expenditure for operating and maintaining the equipment at the fill-in stations is around \$14.6 million and will be absorbed within RTHK's existing resources.

### **IMPLEMENTATION PLAN**

15. We plan to install the 22 fill-in stations by phases starting from January 2015. The whole project is expected to take about four years for completion by the end of 2018 as set out below –

	<b>DTT fill-in Stations</b>	<b>Target completion date</b>
(a)	Beacon Hill, Brick Hill, Sai Wan Shan, Hill 374 and Pottinger Peak (5 fill-in stations)	December 2015
(b)	Stanley Hill, Tai Po Tsai, Hill 275, Hill 297, Chiu Keng Wan Shan and Ap Lei Chau (6 fill-in stations)	December 2016
(c)	Piper's Hill, Sheung Yeung Shan, Robin's Nest, Cheung Chau, Tai O and Hill 141 (6 fill-in stations)	December 2017
(d)	Ying Pun, Kau Wa Keng, Tung Chung, Sham Tseng and Pokfulam (5 fill-in stations)	December 2018

16. We plan to start the preparation work in the first quarter of 2014. The works include the conduct of feasibility studies, site surveys, site designs, and discussion with the TV operators of the respective sites. Upon completion of the preparation work, we plan to start the tendering process by mid-2014. A work programme is set out at the **Enclosure**.

### **ADVICE SOUGHT**

17. Members are invited to comment on the proposal. Subject to Members' views, we plan to seek funding approval from the Finance Committee in the first quarter of 2014.

**Commerce and Economic Development Bureau  
Radio Television Hong Kong  
December 2013**

