

SUPPLEMENTARY RESPONSE

To

The Second Consultation on
Digital Terrestrial Broadcasting in Hong Kong

(Issued by the Communications and Technology Branch,
Commerce, Industry and Technology Bureau,
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by

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1. Introduction

- 1.1 This joint submission supplements responses of Asia Television Limited (ATV) and Television Broadcasts Limited (TVB), 1 March and 5 March 2004 respectively, to the Second Consultation on Digital Terrestrial Broadcasting in Hong Kong (2nd Consultation).
- 1.2 In this Joint submission, ATV and TVB would like to bring the Communications and Technology Branch (CTB) and Commerce, Industry and Technology Bureau's (CITB) attention to industry concerns and outline our proposal for Government and Industry cooperation for the successful launch and deployment of Digital Terrestrial Television (DTT) in Hong Kong.

2. Practical and Proactive Proposal

- 2.1 From the latest discussions and updates on Single Frequency Network (SFN) technology and lessons learned from the introduction of DTT in other parts of the world as well as after studying the responses from other industry players to the 2nd Consultation, we have identified **two major challenges in the successful launch of DTT in Hong Kong:**
- (1) **Building reliable SFN Networks with least interference on existing analogue services; and**
 - (2) **Offering attractive incentives for consumers to switch to DTT.**
- 2.2 We believe the Government must have high hopes in proposing to introduce DTT and harness the benefits for the people of Hong Kong. ATV and TVB have committed to invest in launching DTT in the form of digital simulcast and network roll out in our respective Domestic Free TV Programme Services Licence and multiplex operation in our Carrier Licence. It is imperative that the consumer take-up of DTT in Hong Kong be as fast as possible for making the Government's introduction

of DTT a success, for the people of Hong Kong to enjoy its benefits and for us to realise a return on our investment.

- 2.3 ATV and TVB would like to take a more proactive role in proposing an implementation plan to foster cooperation between Government and industry to provide reliable DTT transmission services and in stimulating the adoption of DTT by offering truly new consumer benefits.

ATV & TVB's Practical Proposal

- 2.4 **From industry news and examples of success and failure of the launch of DTT in other parts of the world¹, the message is very clear: free TV, differentiation and value-added services in terms of HDTV and interactive TV would help to drive audience take-up of DTT.**

We request the Government to pre-assign a Single Frequency Network (SFN) each to ATV and TVB in addition to the proposed 50% of the Multiple Frequency Network (MFN) for digital simulcast. The additional SFN each would enable ATV and TVB with the frequency capacity to provide Free TV, Added Value Services in the form of high definition television (HDTV) programmes and data-enhanced/interactive services, the necessary incentives for DTT adoption. This would also assure the community that there will still be free TV services after analogue switch-off.

- 2.5 **With the pre-assignment of an additional SFN each, since ATV and TVB will be building our own SFN networks, we are willing to work with new operators, if they so wish, in the sharing of existing facilities and in the building of new facilities on fair commercial terms. In sharing the major transmission sites' facilities, we will**

¹ Morris, Andrew. 20 April 2004, "NAB Reports on Transition to Digital TV," *NAB On Line Daily News*, http://www.imaspub.com/nabdaily/tue_am/NAB_Reports_Transition.shtml

be sharing our years of experience in technical know-how with new operators.

We will also be willing to assist in the trial and testing of the reliability and stability of the SFNs. This is necessary as SFN technology has not been tested under such a difficult and congested environment as that in Hong Kong. Furthermore, in our engineers' discussions with major transmission equipment suppliers (for the major European, Japanese and U.S. markets) and transmission engineers at NAB 2004 (Las Vegas, U.S.A., 17-22 April) and during the recent ATV-TV B transmission tests in Hong Kong, time delay between propagation path affecting signal synchronisation has been the major concern. The length of multiple re-bounced signals due to the close proximity of high-rise buildings, as in Japanese cities and Hong Kong, may far exceed the guard interval allowance designed under the European DVB-T and Japanese ISDB-T systems. For practical considerations, transmission experts have proposed the deployment of Dual/Double Frequency Network (DFN) to minimise the problem. (Such an option would require the assignment of two frequencies to a network which is a luxury that Hong Kong can ill-afford.) Also, Chinese experts pointed out practical concerns in SFN deployment and warned that SFN might be an expensive and inefficient technology, in an essay discussing the implementation of SFN².

Benefits of pre-assigning an additional SFN each to ATV & TVB

2.6 From our experience, the traditional business model for terrestrial free TV based on advertising revenue alone would not be able to support more free TV channels, analogue or digital – for years we have been operating our own English-language channel at a loss. Hong Kong could ill-afford additional free TV channels as the advertising revenue

² Liang, W. Q. et al. “單頻網實踐的探討(A discussion on the implementation of SFN)” April 2004. *International Broadcast Information* (Vol. 18 No. 4), pp 30, 32-33.

would be spread thin and, thus, less resources would be invested in the production of local content.

Hong Kong already has more than 200 digital Standard Definition TV (SDTV) or broadband channels, mostly pay services, available.

Programme service providers for Free or Pay TV would have to lease multiplex capacity or invest in building their multiplex network in order to provide their programme services. How could they make their investment commercially viable? And how could multi-SDTV channels, Free or Pay, with limited resources provide local and attractive content to drive DTT adoption?

Hence, the Government should pre-assign an additional SFN each to ATV & TVB:

- ◆ *ATV and TVB would be providing the digital simulcast of existing Free TV programme services on the DTT platform via the MFN. In addition, we would be committing a percentage of local, free TV and HDTV content on our respective assigned SFN.*
- ◆ *TVB and ATV would have the incentive to produce HDTV and local content to provide attractive content and the driving force for DTT adoption - HDTV would provide the product differentiation and data-enhanced interactive TV, the value added service for the mass audience.*
- ◆ *Consumers expect HDTV with the introduction of DTT and ATV and TVB can satisfy their demand with our pre-assigned SFN. As HDTV-ready flat displays such as plasma and LCD displays are being marketed in Hong Kong, consumers would expect "DVD" quality with the introduction of DTT. SDTV quality will not satisfy the consumers who are ready to adopt DTT. Also, the pricing for HDTV-ready plasma displays is dropping significantly – industry estimates indicated that by the end of 2004, pricing for made-in-China HDTV plasma displays would fall to US\$2,000.*

- ◆ To do so would also assure that there would be free TV services available in the fully digital era after analogue switch-off, directly addressing the concern of the community, especially that of the Consumer Council, as well as HDTV content to drive consumer acceptance at the launch of DTT in Hong Kong.
- ◆ If ATV and TVB have one and a half multiplexes each with the above programme service offerings, we would have the incentive to promote the adoption of DTT in order to have more assurance on our investment return, thus benefiting industry and the community as a whole.
- ◆ We believe that a combination of Free TV and Enhanced TV in the form of HDTV and data enhanced and interactive services would be the driving force for DTT adoption in Hong Kong. There is no other guarantee, nor even expressed interest, thus far for DTT multiplex investment with programme services to achieve this goal except from ATV and TVB.
- ◆ Also, there is the challenge of building SFN networks whose technology has not been tested in other similar markets. Investors would also have more confidence in entering the DTT market if the two principal and experienced players ATV and TVB have committed to such substantial investment.
- ◆ Furthermore, with ATV and TVB's commitment to have more stake in the DTT transmission networks and providing their trusted programme and broadcast services, the audience and community would have more confidence in the launch of DTT in Hong Kong and, thus, would be more willing to invest in STBs and integrated digital TV sets (idTVs).

3. Implementation Plan and Timeline

ATV and TVB are making a proposal for launching DTT in two phases to start solving reception problems using DTT technology, launch digital

simulcast on our MFN and assist the Government and new operators to facilitate Hong Kong towards the successful launch of DTT according to the proposed substantial coverage schedule in 2008 and eventual switch over to DTT.

We still believe that the consumer benefits enabled by having the same DTT standard as the Mainland's are worth the wait. **With the assignment of our respective 50% of the MFN and one additional SFN each, we are prepared to work with the Government in solving the majority of reception problems and wait for the Mainland standard in the following manner:**

One DTT Standard for Hong Kong and Maximise The Chance to Use The Same Standard as The Mainland's

3.1 We propose that Hong Kong should launch DTT as follows:

Phase 1 : To utilise the DTT technology to enable better reception in problem areas, build the MFN and SFNs, test the SFNs and for the Government to mandate a permanent DTT standard for Hong Kong:

- ◆ **Phase 1(a) To start building the MFN and launch within 2006, using DTT technology for areas with analogue reception problems, e.g., using an *interim* standard for head-end STB reception.**
- ◆ **Phase 1(b) To build and test the SFNs and the Government will decide on a mandatory common DTT standard for Hong Kong with the aim of achieving two objectives:**
 - (i) **To launch the MFN and 4 SFNs no later than 31 December 2007 and achieve 75% territory-wide coverage within 2008.**
 - (ii) **To use the same standard as the Mainland's as long as it does not conflict with objective (i).**

The decision on DTT standard will be made no later than 31 December 2006 in the manner suggested below (see 3.2 & 3.3 for details). In this Phase also, ATV and TVB will start to build and test (but not launch) the SFNs.

- ◆ **Phase 2: To launch the MFN and 4 SFNs within 2007 and achieve 75% territory-wide coverage within 2008 (See 3.4 for details).**

3.2 Phase 1(a) – Solving reception problems using DTT technology within 2006

ATV and TVB would start work on the MFN network and use DTT technology, e.g., DVB-T as the *interim* transmission standard, starting from the Temple Hill site in 2006 for solving analogue reception problems aiming for the use of in-building systems' head-end STBs in poor reception areas. If such a measure is implemented, the Broadcasting Authority (BA) and Office of Telecommunications Authority (OFTA) must free ATV and TVB of the obligation of continuing to build additional transposers for our analogue networks.

In this Phase we will be advising consumers that we are using an interim standard, e.g. DVB-T, in order to improve reception in problem areas starting with the Temple Hill transmitter.

We would advise our audience not to purchase individual STBs or idTVs if possible until the permanent common DTT standard has been set and the MFN for simulcast and the 4 SFNs are launched. This would enable audience living in reception problem areas to receive better quality TV signals satisfying this more urgent need to deploy DTT technology earlier in Hong Kong. This would cost the consumers much less when we change the transmission standard to the permanent common standard.

If the Mainland were to decide on which DTT standard to adopt in 2005 or early 2006, if it is technically feasible, we would be launching the digital simulcast using the permanent standard, the same standard as the Mainland's, via the MFN starting from sites covering problem analogue reception areas.

When this proposal is accepted, we will discuss with OFTA on the roll-out plan for using DTT for problem reception areas in detail.

3.3 **Phase 1(b) Decision on Permanent Common DTT Standard and Building and Testing of SFNs**

The Government-mandated permanent common DTT standard for Hong Kong should be set as follows: -

- (a) If at any time on or before 31 December 2006 the Mainland announces DVB-T as the choice of DTT standard, the Government can immediately announce that Hong Kong's choice of common DTT standard is DVB-T. However, the technical specifications (including audio standard) should be identical to the Mainland's. All the 4 SFNs can then be permitted to launch as soon as possible and it could well be within 2006.
- (b) If at anytime on or before 31 December 2006 the Mainland announces its own proprietary standard as its choice of DTT standard, the Government can immediately announce this proprietary Chinese standard to be Hong Kong's permanent DTT standard as well. The service launch date of the 4 SFNs can be set in consultation with the multiplex licensees but it will be no later than 31 December 2007.
- (c) If by 31 December 2006, the Mainland has not yet announced its choice of DTT standard, then the Government can announce that DVB-T will be the permanent common DTT standard. The service launch date of the 4 SFNs can be as soon as it is feasible for the multiplex licensees and we expect that it will definitely be within 2007.

In this Phase, ATV and TVB will commence building the network infrastructure for the MFN and SFNs and testing of the transmission system of the SFNs. The objectives in this Phase will be to do sufficient transmission site build-up and testing to enable our 2 pre-assigned SFNs as well as the other 2 SFNs, if new operators so wish, to be launched speedily in Phase 2. The exact details and time table for building the infrastructure of the SFNs in this Phase can be worked out with OFTA.

Commencement of building the MFN and SFNs before a decision on DTT standard has the further advantage that when the MFN and SFNs are launched in Phase 2, network coverage will be more than 50% at launch and rise to at least 75% rapidly. Consumers will have less uncertainty on whether they are within the network reception area and greater momentum of DTT adoption will be generated.

3.4 **Phase 2 – Service Launch of the MFN and 4 SFNs within 2007 and Achieving 75% Territory-wide Coverage within 2008**

Phase 2 of the DTT roll-out in Hong Kong represents the service introduction of the MFN and 4 SFNs including the 2 pre-assigned SFNs requested by ATV and TVB for HDTV services. By the time Phase 2 commences after the permanent common DTT standard has been decided in Phase 1(b), a lot of the groundwork in terms of the building of infrastructure at transmission sites and solving the technical and operational problems associated with deploying SFNs in Hong Kong would have been done by ATV and TVB. Furthermore, ATV and TVB have offered to share our main hill-top sites' facilities on fair commercial terms with all other multiplex operators (if they so desire). We anticipate that the actual work of launching the MFN and 4 SFNs within Phase 2 will be able to proceed very quickly. Thus, we are confident that 75% territory-wide coverage can be achieved within 1 year of service launch.

The actual start date of Phase 2 will vary depending on the various scenarios regarding the decision on the common DTT standard as set out earlier under Phase 1(b); but in every case, the MFN and 4 SFNs will be launched within 2007 or earlier and will achieve 75% territory-wide coverage within 2008.

With the above plan, the following objectives and benefits are achieved:

- (a) The deployment of DTT utilising part of the MFN infrastructure using the *interim* DVB-T standard will commence well within 2006. A large proportion of viewers in reception problem areas will get quick relief to their reception problems.**
- (b) The launch of the 4 SFNs will only be delayed by at most one year (within 2007 instead of within 2006) but 75% territory-wide coverage of SFNs will probably be achieved no later than in the Government's original plan.**
- (c) Hong Kong will greatly increase its chances of having the same DTT standard as the Mainland's and enjoying all the consumer, social and economic benefits attached thereto.** (For details on the benefits of having the same DTT standard as the Mainland's, please refer to our respective response submission 1 March and 5 March 2004 to the 2nd Consultation and joint submissions to the first Consultation on Digital Terrestrial Broadcasting in Hong Kong, 26 February and 3 April 2001.)
- (d) Hong Kong will have one common DTT standard and Hong Kong consumers will benefit greatly. As building reliable SFN networks with synchronised signals, free of interference among SFN networks and on existing analogue services are already a great challenge. To have more than one transmission standard would further complicate the technical problems – as experts advised the use of the same standard for cross border areas, it would be even more important for a**

small place such as Hong Kong to have only one transmission standard. Furthermore, consumers will not have to bear the added costs for having multiple devices or multi-standard devices for different multi-media appliances.

- (e) At service launch of the SFNs, the SFN technology would have been thoroughly tested and a high level of network coverage achieved. Consumers will again benefit greatly from this.
- (f) New multiplex operators will be able to quickly leverage on a strong transmission infrastructure built by ATV and TVB and designed for sharing.
- (g) With an additional SFN each, ATV and TVB will be fairly treated and strongly motivated to contribute HDTV and other content necessary to make DTT adoption a success.
- (h) When the MFN and SFN are launched in 2007, prices for HDTV sets would drop to a more affordable level.
- (i) The data enhanced interactive TV services offered by ATV and TVB will enable those with no computer knowledge to access information at their fingertips and help to bridge that knowledge gap and associated generation gap.
- (j) Ultimately, with the success in meeting the technical challenge of providing reliable and stable SFN transmission service, having HDTV and other added value services to speed up adoption rate and enabling the majority of the public to enjoy the benefits of DTT, Hong Kong will become a model DTT city in the region. The position of Hong Kong as a regional broadcasting hub would be definitely enhanced.

3.5 The Government's Cooperation

This proposal is ATV and TVB's sincere effort in realising a successful launch of DTT in Hong Kong. The timeline and implementation plan are made without knowing the official timeline on the Mainland's introduction of DTT for the nation. In order for our plan to become even more realistic, we request the Government to continue to request for more information and clearer indication of when a decision for the national DTT standard would be made and when would DTT be expected to launch on the Mainland.

4. Conclusion

We believe the above proposal would help to provide a win-win DTT adoption environment for Hong Kong benefiting the people, community, industry, Government and economy of Hong Kong.

As we have mentioned before, we are willing to work with departments concerned on implementation details of our proposal. This proposal is only a first step towards the launch of DTT in Hong Kong. To make this plan viable, there are many other obstacles to tackle, for example the standardisation of Set-top Boxes, the relaxation of existing advertising and programme regulations to enable viable interactive services, etc. We welcome the Government's consultation in any form, formal or informal, anytime in the licensing process and preparation for the launch of DTT in Hong Kong.