# Withdrawal of Mandatory Type II Interconnection

## Statement of the Telecommunications Authority

**3 July 2008**

## Introduction

The Government announced on 6 July 2004[1] that the regulatory intervention under the mandatory Type II interconnection policy applicable to the telephone exchanges for individual buildings covered by such exchanges would be gradually withdrawn on a building by building basis, applying to buildings already connected to at least two self-built customer access networks ("CAN"s), and that the withdrawal should be fully implemented by the final sunset date of 30 June 2008. This Statement gives an update on the market environment and sets out issues to be followed up after the sunset date. Nothing in this Statement shall prejudice the generality of the power exercisable by the Telecommunications Authority ("TA") under the Telecommunications Ordinance ("Ordinance").

## Background

2. Type II interconnection, a regulatory tool widely deployed in the world, requires the incumbent fixed network operator ("FNO") to open up its copper-based CAN to new entrants so that the latter may provide competing service to customers in the start-up phase when their own self-built CANs are not as extensive as the incumbent's. The different configurations of Type II interconnection are illustrated in Annex 1. In Hong Kong, mandatory Type II interconnection was introduced in 1995 when the local fixed market was first liberalized. It was applied to the three FNOs that entered the market in 1995[2], namely Hutchison Global Communications Limited ("HGC"), Wharf T&T Limited ("WT&T") and New World Telecommunications Limited ("NWT"), with the incumbent FNO PCCW-HKT Telephone Limited ("PCCW") being

[1] Please refer to the Legislative Council Brief (Ref: CTB/T 56/2/1(04)) "Review of Type II Interconnection Policy" (http://www.cedb.gov.hk/ctb/eng/legco/pdf/typeII.pdf).
[2] The other competitors who entered the market in 2003 and thereafter are not eligible for mandatory Type II interconnection as of right.

mandated to provide interconnection on request.

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3. In 2003, the Government carried out a review on the mandatory Type II interconnection policy and examined whether the policy remained relevant and necessary to facilitate effective competition and promote investment in the telecommunications market. The Government considered that the continuation of mandatory Type II interconnection was justified only if the benefits from facilitating effective competition and enhancing consumer choice outweighed any potential detriment arising from dampening of incentive for investment in network infrastructure. After carrying out two consultations on the subject, the Government announced on 6 July 2004 the decision that the regulatory intervention under the Type II interconnection policy applicable to telephone exchanges for individual buildings covered by such exchanges should be withdrawn, subject to the following conditions –

(a) the withdrawal should be fully implemented by 30 June 2008;

(b) in the run up to 30 June 2008, the withdrawal should be implemented on a building-by-building basis and apply to buildings already connected to at least two self-built CANs;

(c) the withdrawal at buildings already connected to at least two self-built CANs should be subject to a two-year transitional period to ensure no disruption of choice and service to consumers and a one-year "grandfather" period thereafter to protect the regulated interconnection terms (including charges) for lines connected before and during the transitional period;

(d) after the "grandfather" period, or 30 June 2008, whichever is earlier as the case may be, interconnection terms (including charges) should be subject to commercial negotiations between the carriers concerned; and

(e) buildings meeting the "essential facilities" criterion that justifies mandatory interconnection in the consumer interest should be exempt from the withdrawal arrangement.

## Implementation of the Revised Type II Interconnection Policy

4. In association with the announcement made by the Government, the TA issued two Statements setting out how the revised Type II interconnection policy would be implemented. They are:

(a) Statement on "Review of Type II Interconnection Policy" issued on 6 July 2004[3]; and

(b) Statement on "Implementation of Type II Interconnection Policy Announced on 6 July 2004" issued on 19 July 2004[4].

5. The above TA Statements set out, among others, the following regulatory arrangements:

(a) In respect of interconnection at the telephone exchange level (Point A):

(i) To be qualified as an alternative CAN covering a building (such that the withdrawal of mandatory Type II interconnection would be triggered), the CAN should meet the necessary assessment criteria as specified in the Statement on "Implementation of Type II Interconnection Policy Announced on 6 July 2004" issued on 19 July 2004;

(ii) The TA would publish on a half-yearly basis a list of the buildings to which alternative CANs had been rolled out. The concerned building list was published by the TA in September 2004, March 2005 and September 2005[5]; and

(iii) The TA would implement other measures to support the implementation of the revised Type II interconnection policy, including facilitation to operators in gaining access to buildings

[3] See the Statement at http://www.ofta.gov.hk/en/tas/interconnect/ta20040706.pdf.
[4] See the Statement at http://www.ofta.gov.hk/en/tas/interconnect/ta20040719.pdf.
[5] In January 2006, after consultation with the relevant operators, the building list was not further updated given that only a very short transition period was left for buildings in the list prior to the final sunset date of 30 June 2008 for total withdrawal.

for rolling out their self-built CANs[6], issuing and/or updating code of practice on local access links (LALs)[7], and developing relevant guidelines addressing the availability and provisioning for in-building wiring systems[8]. These measures have since been implemented after consultation with the concerned operators.

(b) Mandatory Type II interconnection at the street level (Point B) will be maintained. However, the TA would review in a few years' time the situation taking into account the evolvement of technology and market needs by that time;

(c) Mandatory Type II interconnection at the in-building level (Point C) i.e. to the copper wires of in-building systems (including blockwiring systems and in-building coaxial cable distribution system (IBCCDS)) will be maintained;

(d) In view of the Government's policy objective to encourage investment in the rollout of competitive fibre-based telecommunications infrastructure to provide choices of innovative and high capacity telecommunications services to suit the needs of the consumers, Type II interconnection would not be extended to the fibre-based CANs of the fixed carriers and would not be available to non-facility based service operators; and

(e) The TA would apply section 36A of the Ordinance in determining the charges, charging principles or other terms and conditions relating to

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6 OFTA established a Customer Access Network ("CAN") Working Group ("WG") in August 2004 to address the problems associated with the rollout of CAN in buildings and to develop the necessary guidelines in order to facilitate the industry in the provision of access networks in buildings. As a result of the work carried out by the CAN WG, three codes of practice were issued, namely (a) Code of Practice for Installation and Maintenance of In-Building Telecommunications Systems and In-building Access by Telecommunications Network Operators (December 2004); (b) Code of Practice for the Provision of Access Facilities in Buildings for Supply of Telecommunications and Broadcasting Services (December 2005); and (c) Code of Practice for the Installation and Maintenance of In-building Telecommunications Systems by Class Licensees (November 2005).

7 Having addressed a number of technical and operational issues relating to the implementation of Type II interconnection in the Local Access Links (LAL) Forum, the TA updated the Industry Code of Practice for the Interconnection of Broadband and Narrowband Local Access Links on 22 November 2004 (Issue 4) and 15 June 2005 (Issue 5).

8 OFTA established the Blockwiring Forum ("BW Forum") in November 2004 with participation of the local FNOs. The BW Forum was tasked to develop operational principles and procedures to facilitate Type II interconnection at Point C. With the inputs of the BW Forum, the TA issued a Statement entitled "Guideline on Availability and Provisioning of Blockwiring for Type II Interconnection" on 28 July 2005".

Type II interconnection where circumstances justify.

## The Latest Market Situation

6. Since the announcement of the revised Type II interconnection policy in July 2004, the new FNOs have continued to invest and roll out their self-built networks[9]. As the tables below indicate, there is a progressive increase in the number of households in Hong Kong that are connected to at least two self-built CANs. As of March 2008, the figure has reached 81.2% of the total number of households. This is a substantial increase compared with four years ago when the corresponding figure was 53%.

**Table 1 – Households covered by New Fixed Network Operators (2004 - 2008)**

| | No. of Households | % of Total Households |
|---|---|---|
| July 2004 | 1,252,532 | 53% |
| Sept 2004 | 1,450,103 | 61.2% |
| June 2005 | 1,736,592 | 71.4% |
| July 2006 | 1,882,061 | 76.0% |
| July 2007 | 1,979,553 | 79.1% |
| March 2008 | **2,032,382** | **81.2%** |

[9] The new FNOs include HGC, WT&T, NWT, Hong Kong Broadband Network Limited ("HKBN") and Hong Kong Cable Television Limited ("HKCTV"). The hybrid-fibre coaxial cable (HFC) network of HKCTV has been gradually upgraded since 2004 with capability to provide broadband and IP telephony services and starting from March 2005, those buildings covered by parts of HKCTV's HFC network which met the criteria for qualification as an alternative CAN have been included in the building list published by the TA referred to in sub-paragraph 5(a)(ii).

**Table 2 - Households covered by Fixed Network Operators (March 2008)**

| | No. of Households | % of Total Households[10] |
|---|---|---|
| At least 2 Networks | **2,032,382** | **81.2%** |
| At least 3 Networks | 1,459,310 | 58.3% |

7. For those FNOs which have relied on using Type II interconnection circuits leased from PCCW for providing services to customers, the total number of Type II circuits as of March 2008 is about 206,500, representing a drop of more than 50% from the figure of 438,000 in July 2004. As for the remaining customers still served by Type II circuits, the FNOs have either made the necessary commercial arrangements with PCCW beyond the sunset date or have taken action to migrate the customers to their own self-built networks.

8. Apart from the more extensive geographical reach of the self-built networks of the new FNOs, the TA has also observed the introduction of more advanced and innovative services by FNOs using their high-capacity self-built CANs. These include the following:

(a) More affordable and faster broadband Internet access service to customers, with a household penetration of 77% in March 2008;

(b) The upgrade of the HFC network of HKCTV to provide both broadband and IP telephony service using cable modem technology, thus giving additional choice of telecommunications services to those customers who are already provided with the pay TV service by the company;

(c) The deployment of fibre-to-the-home ("FTTH") technology by the FNOs[11], which is capable of delivering transmission capacity of up to 1000Mbps to individual premises. According to a recent

[10] The figure published by the Census and Statistics Department ("C&SD") for the total number of households in Hong Kong in 2008 (2,502,800) is used.
[11] FTTH solutions are provided by FNOs including PCCW, HKBN and HGC.

report published by the FTTH Councils of Asia Pacific, Europe and North America[12], with a household penetration of 23.4 percent, Hong Kong ranks the second amongst the major economies in the world in the penetration of FTTH and fibre-to-the-building (FTTB) plus local area networks;

(d) The launch of IP telephony service by almost all FNOs and service-based operators (SBO) over broadband connections. The total number of IP telephony subscribers reaches 388,000 in March 2008, accounting for about 9% of all fixed line telephone customers;

(e) The launch and increasing popularity of local IP television services. With over one million customers in December 2007, Hong Kong ranks the first in the world in the household penetration of IP television services[13]; and

(f) The offer of "triple-play" services by a number of FNOs providing bundled packages of telephony, broadband access and IP television services to customers.

9. Judging from the results as shown above, the policy goals in the withdrawal of the mandatory Type II interconnection have been achieved quite remarkably. Thanks to the significant level of facility-based competition in the market for fixed service, 81% of the residential households have now a genuine choice of at least two fixed carriers. The TA also observes a smooth transition in the intervening period during which customers served by Type II circuits are migrated smoothly to the self-built CANs of the new FNOs.

## Arrangements after the Sunset Date

*Follow-up Issues*

10. Against the background of the policy principles and regulatory

[12] The report published by the FTTH Councils of Asia-Pacific, Europe and North America can be downloaded from the following URL : http://www.ftthcouncil.org/?t=282.

[13] http://www.economist.com/displaystory.cfm?story_id=11318291

arrangements as set out in the revised Type II interconnection policy and the associated TA Statements (as referred in paragraphs 3 to 5 of this Statement), the TA would follow up with the issues below:

(a) The TA decided in July 2004 that the mandatory interconnection at the street level (Point B) should be retained, subject to review in a few years' time taking into account the evolvement of technology and market needs by that time. At present, the TA understands that no operators are using Type II interconnection arrangement at Point B, and he has not received any request for such kind of Type II interconnection. Having reviewed the latest situation, the TA is of the view that there might be little market demand for such kind of Type II interconnection. Nevertheless, as he has pointed out in the TA Statement of 6 July 2004, in case where genuine bottlenecks exist within the in-building systems (i.e. Point C), interconnection at the street level (i.e. Point B) may serve as an alternative. Where economic or technical constraints do not allow the new FNOs to terminate their self-built fibres in individual buildings, it may be economically viable and technically feasible to terminate the fibres instead at Point B, which is in close proximity to a cluster of buildings, and interconnect it with the copper-based local loops of PCCW leading into the buildings. On balance, the TA maintains the view that Type II interconnection at the street level (Point B) will remain mandatory in the meantime. The TA will however keep the situation in view and observe new developments that may take place in the near future (please refer to paragraph 12 of this Statement) which call for review of the regulatory regime;

(b) The TA published the list of buildings that were connected by at least two self-built CANs in September 2004, March 2005 and September 2005. While the TA did not publish the detailed building list after September 2005, he has continued to publish the updated coverage figures of the new FNOs for public information in October 2006 and November 2007. The coverage figures are useful indicators depicting the effectiveness of facility-based competition in the fixed market. In this regard, the TA will continue to monitor the rollout of the self-built CANs and publish the updated figures on a periodic basis; and

(c) The TA will continue to facilitate the network rollout of FNOs by streamlining approvals of road opening and building access[14], making available spectrum for wireless access applications and offering assistance either by informal means or formal intervention as and when necessary.

*The "Essential Facilities" Criterion*

11. As explained in paragraph 20 of the Legislative Council Brief (Ref. CTB/T 56/2/1(04)) "Review of Type II Interconnection Policy", some households in Hong Kong are either technically not feasible or economically not viable for a carrier to roll out its CAN to them. After the final sunset date, the Government would need to protect those remaining households from being deprived of the benefit of competition. As such, the TA will apply the "essential facilities" criterion in deciding whether to mandate Type II interconnection at the telephone exchange level. This concept is based on the established competition law principles, whereby the TA will assess a request for interconnection on the basis of whether PCCW's CAN can be duplicated and whether refusal to access that customer access network will foreclose competition. If PCCW's CAN is considered "essential" for competition based on these two factors, the TA will accept the request and mandate interconnection.

**Way Forward**

12. Market force will continue to drive the rollout of self-built CANs by FNOs using new and innovative technologies. Recently, one FNO has launched a new service using means of wireless access[15]. Broadband wireless access ("BWA") will soon be available in Hong Kong with the auctioning of BWA spectrum expected to be held by the end of this year. The deployment of alternative access technologies will help to expand the CANs of the new FNOs

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[14] A more streamlined procedure for authorization of road opening and building access will be adopted and applied to existing FNOs and future unified carrier licensees. For details, please see paragraphs 10-11 of the TA Statement on "Licensing Framework for Unified Carrier Licence" issued by the TA on 9 May 2008.

[15] The coverage figures in Tables 1 and 2 are up to end March 2008 and do not cover the new fixed service launched by this FNO. If the wireless access network of this FNO meets the relevant assessment criteria (sub-paragraph 5(a)(i) of this Statement refers) and is qualified as an alternative CAN, the coverage of this new fixed service will be included in the compilation of the coverage figures that the TA will publish in future.

to the remaining 19% of the households which are only served by the CAN of the incumbent fixed operator. With such developments, it is expected that the total number of those remaining households which are not technically feasible or economically viable to be reached by the new FNOs should continue to fall.

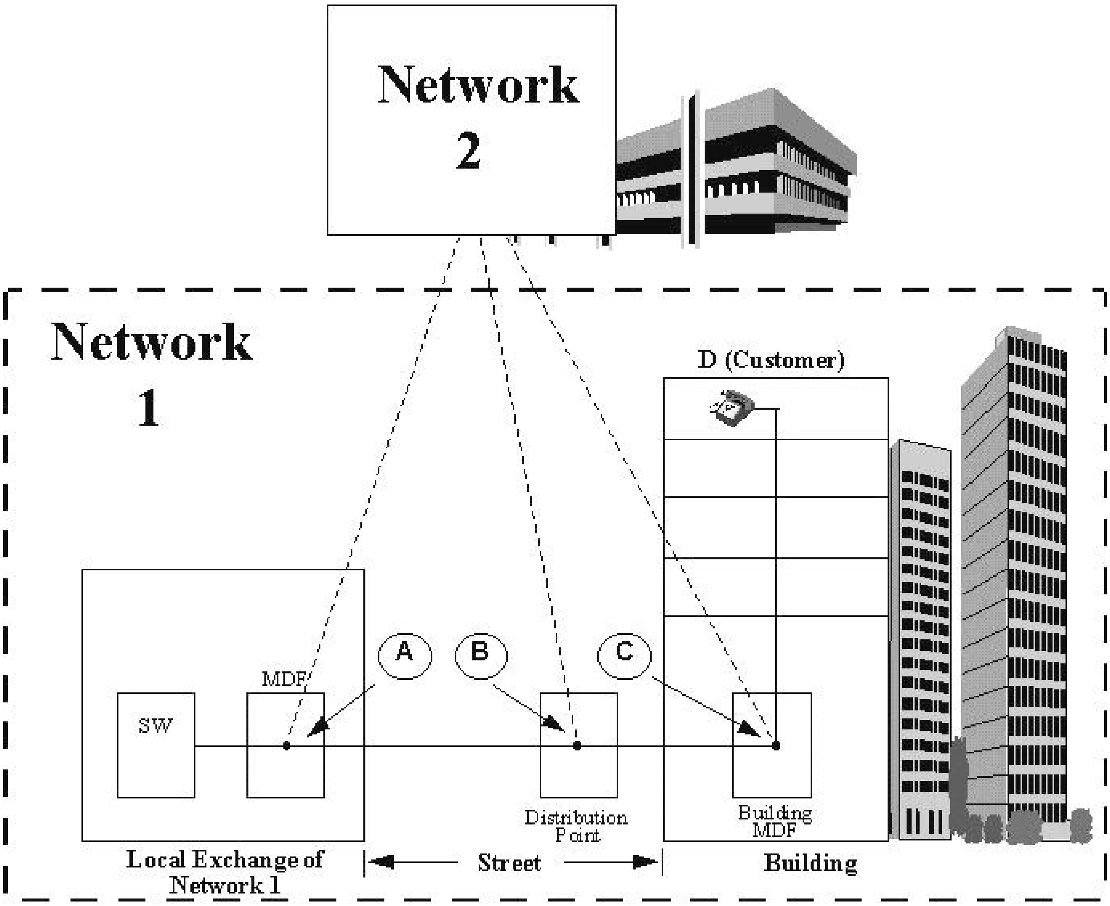
**Conclusion**

13. The withdrawal of mandatory of Type II interconnection on 1 July 2008 marks an important milestone underlining the significant degree of facility-based competition achieved by Hong Kong in its fixed line market. Hong Kong is among the first few economies in the world to phase out this mandatory regulatory intervention in its mainstream regulatory policy in the opening up of the "last mile" of the incumbent fixed operator. The TA recognises that this was brought about by a combination of appropriate government policy and market competition. The TA strongly believes that with sound policy and competition in the market, customers will continue to enjoy wide choices of quality and innovative services at affordable price.

**Office of the Telecommunications Authority**
**3 July 2008**

**Annex 1**

## Type II Interconnection Points

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