

# **TELECOMMUNICATIONS ORDINANCE (CAP 106)**

## **Supplementary Determination under Section 36A of the Telecommunications Ordinance on the Terms and Conditions of Self-built Points of Interconnection between New World Telecommunications Limited and PCCW-HKT Telephone Limited**

### **Interpretation**

In this Determination, unless the context otherwise specifies:

“the parties” means PCCW-HKT Telephone Limited and New World Telecommunications Limited.

### **The Supplementary Determination**

2. On 23 April 2003, the Telecommunications Authority (“TA”) made a determination (the “First Determination”) under section 36A of the Telecommunications Ordinance (Cap 106) (the “Ordinance”) on the terms and conditions of self-built points of interconnection (“POI”) between the networks of New World Telecommunications Limited (“NWT”) and PCCW-HKT Telephone Limited (“PCCW-HKTC”). On 23 July 2003, NWT requested the TA to make a supplementary determination on the outstanding terms and conditions of self-built POI which were not determined by the TA in the First Determination (the “Supplementary Determination”).

3. The TA, in exercise of his power under section 36A of the Ordinance,

*having been satisfied* that the parties have been afforded reasonable opportunity in accordance with section 36A(4) to make representations to him as to why a determination should not be made;

*having considered* all submissions made by the parties concerning this Supplementary Determination;

*having considered* the Preliminary Analysis issued by the Interconnection Determination Committee (IDC) on 12 February 2004;

*having been satisfied* that the parties have been afforded reasonable opportunity to consider the Preliminary Analysis and to make representations to the TA in response to the Preliminary Analysis;

*having considered* the Final Analysis annexed to this Supplementary Determination submitted by the IDC and the recommendations therein;

hereby *determines* that

- (a) The eight POIs shall be the notional mid-points between the following pairs of exchanges, hubs or co-location facilities of NWT and PCCW-HKTC:

<u>NWT</u>	<u>PCCW-HKTC</u>
Tsim Sha Tsui	Jordan
Oxford House, Quarry Bay	King's Road
Kwai Chung	Kwai Shing
New World Tower, Central	West
Telford Plaza, Kowloon	Ngau Tau Kok
Discovery Park, Tsuen Wan	Tsuen Wan
51 Tsun Yip Street, Kwun Tong	Kwun Tong
Shatin	Yuen Chau Kok

- (b) The migration from the existing interconnection arrangement between the networks of the parties to the self-built POI interconnection arrangement shall be carried out according to the following migration plan:

- (1) The migration shall be carried out in two phases. The first phase ("Phase 1") covers the E1 and T1 links
- (i) that are leased under the existing interconnection arrangement between the parties; and
  - (ii) the minimum service period of which has either

expired or will expire by October 2004.

The second phase (“Phase 2”) covers the remaining E1 and T1 links that are leased under the existing interconnection arrangement between the parties;

- (2) Subject to paragraphs 3(b)(3), 3(b)(4), 3(b)(5), 3(b)(6) and 3(b)(7), within 30 calendar days (“Negotiation Period”) after receipt of a written request from NWT, PCCW-HKTC shall, in consultation with NWT, devise a detailed migration schedule for completion of the Phase 1 migration. The detailed migration schedule shall, inter alia, specify the eight pairs of manholes at which interconnection shall be facilitated;
- (3) The migration of the E1 links in Phase 1 shall be performed at an average rate of not less than 63 links per month and distributed as evenly as practicable among the eight pairs of exchanges listed in paragraph 3(a) to attain optimal diversity;
- (4) The T1 links to be migrated in Phase 1 should be migrated to not more than three out of eight pairs of exchanges listed in paragraph 3(a);
- (5) Subject to paragraphs 3(b)(6) and 3(b)(7), the actual migration process for Phase 1 shall start within six weeks from the end of the Negotiation Period and complete within [X] months from the end of the six-week period following the end of the Negotiation Period;
- (6) If PCCW-HKTC and NWT cannot agree on the detailed migration schedule for the migration of Phase 1 within the Negotiation Period, NWT may, upon the expiry of the Negotiation Period, propose a detailed migration schedule for Phase 1 to PCCW-HKTC and the TA. NWT’s proposed migration schedule shall satisfy the requirements set out in sub-paragraphs (i) – (vi) below, as well as those stipulated in Paragraph 3 of the First Determination, unless the parties

agree to dispense with any of such requirements:

- (i) After the migration, the E1 links shall achieve an overall efficiency of not less than 85% of the total capacity of the PCCW-HKTC's transmission equipment for the self-built POI between the parties;
- (ii) Without prejudice to paragraph 3(b)(6)(i), the E1 links shall be distributed as evenly as practicable among the eight pairs of exchanges listed in paragraph 3(a) to attain optimal diversity;
- (iii) The T1 links to be migrated in Phase 1 should be migrated to not more than three out of eight pairs of exchanges listed in paragraph 3(a);
- (iv) The choice of the eight pairs of manholes by NWT for interconnection in its detailed migration schedule shall not deviate from that proposed by NWT in its submissions to the TA in these proceedings (see paragraph 15 of the Final Analysis), subject to any physical constraints in respect of any of the manholes proposed. In respect of the exchanges "51 Tsun Yip Street, Kwun Tong (NWT) – Kwun Tong (PCCW-HKTC)" and "Shatin (NWT) – Yuen Chau Kok (PCCW-HKTC)", for which NWT has not made any proposal on the choice of manholes, NWT shall, in accordance with the concept of notional mid-point, specify manholes that are physically able to accommodate the interconnection;
- (v) The migration of the E1 and T1 links falling within Phase 1 shall take place as evenly as practicable and complete in [X] months; and
- (vi) The migration shall only take place in respect of those E1 and T1 links the minimum service period of which has expired.

- (7) The TA will, as soon as he receives NWT's proposed detailed migration schedule submitted under paragraph 3(b)(6), examine the schedule to see if it conforms to all the requirements set out in paragraphs 3(b)(6)(i) – (vi) and paragraph 3 of the First Determination (except those requirements dispensed with by agreement of the parties). If the TA is satisfied that the schedule satisfies all requirements, the TA will confirm to both parties that the schedule shall be adopted and followed by the parties. The actual migration process shall start six weeks from the date the detailed migration schedule is confirmed by the TA. For the avoidance of doubt, the "six-week period" referred to in this sub-paragraph does not form part of the "[X]-month period" referred to in paragraph 3(b)(6)(v); and
- (8) The migration for the remaining E1 and T1 links in Phase 2 shall take place six weeks after PCCW-HKTC has received a written request from NWT for migration of these links. For the avoidance of doubt, the written request from NWT shall not be issued earlier than six weeks before the completion of the migration of Phase 1. The actual migration of the E1 and T1 links in Phase 2 shall take place as soon as after the minimum service period of the E1 and T1 links concerned has expired.

## **Publicity**

4. This Determination will be made public.

(M H Au)  
Telecommunications Authority

Date: 14 May 2004

**Supplementary Determination under Section 36A of the  
Telecommunications Ordinance on the  
Terms and Conditions of Self-built Points of Interconnection  
between New World Telecommunications Limited and  
PCCW-HKT Telephone Limited**

**Final Analysis**

**14 May 2004**

**Introduction**

In accordance with the “Procedures for Making Determination on the Terms and Conditions of Interconnection under Section 36A of the Telecommunications Ordinance” (the “Procedures”) issued by the Office of the Telecommunications Authority (“OFTA”) in October 1995 and revised on 27 September 2001, the Interconnection Determination Committee (“IDC”) has considered all written submissions from the parties to this determination and issued a Preliminary Analysis on 12 February 2004 to set out the preliminary views of the IDC on the terms and conditions of interconnection, the reasons for the preliminary views, and how the determination should proceed. The parties have since submitted their comments on the Preliminary Analysis.

2. The IDC has reviewed the comments received, finalised its views and submitted its recommendations to the Telecommunications Authority (“TA”) for consideration. This Final Analysis sets out the considerations of the IDC in reaching the conclusions and recommendations in this determination.

**The Request for Supplementary Determination**

3. On 23 April 2003, the TA made a determination (the “First Determination”) under section 36A of the Telecommunications Ordinance (Cap 106) (the “Ordinance”) on the terms and conditions of self-built points of interconnection (“POI”) between the networks of New World

Telecommunications Limited (“NWT”) and PCCW-HKT Telephone Limited (“PCCW-HKTC”). On 23 July 2003, NWT requested the TA to make a supplementary determination on the outstanding terms and conditions of self-built POI which were not determined by the TA in the First Determination (the “Supplementary Determination”).

### **Legal Basis on which the Supplementary Determination is to be Made**

4. The TA is empowered under the Ordinance to determine the terms and conditions of interconnection and to issue directions in relation to interconnection under sections 36A and 36B respectively.

5. The TA considers that the matters under request for supplementary determination fall within the scope of section 36A of the Ordinance because

- (a) the TA may under section 36A(1) determine the terms and conditions of interconnection of the type mentioned in section 36A(3D);
- (b) the establishment of self-built POI between the networks of NWT and PCCW-HKTC is a form of Type I interconnection falling within the ambit of section 36A(3D); and
- (c) the matters requested to be determined by the TA fall within the ambit of section 36A(3A).

6. The TA in deciding to accept NWT’s request for supplementary determination has taken into account the following considerations:

- (a) the Government’s policy objectives for the telecommunications industry

Type I interconnection, being interconnection between network gateways, is fundamental to ensure that a customer in any one network can have access to any other customer or any service offered in any interconnecting network. It is only when networks are interconnected to achieve this “any-to-any”

connectivity that new entrants are able to compete with the incumbent who owns a ubiquitous network. The Supplementary Determination on the terms and conditions of self-built POI ensuring that the interconnection can be done as quickly as possible is therefore in line with the Government policy objectives for the telecommunications industry.

(b) the consumer interests

Consumers demand more choices of high quality telecommunications services at competitive prices, and Type I interconnection is fundamental to facilitate the offer of choices. It is therefore in the interest of the consumers that the Supplementary Determination is made so that interconnection by self-built POI can be done as quickly as possible.

(c) encouraging efficient investment in telecommunications infrastructure

At present, NWT is leasing interconnection links from PCCW-HKTC to establish Type I interconnection between its network and that of PCCW-HKTC. NWT intends to replace the existing arrangement by self-building POI to connect with PCCW-HKTC's network. In the First Determination, the TA determined the basic terms and conditions of self-built POI and left the remaining terms to be commercially agreed between the parties. The parties have not been able to come to an agreement on these remaining terms and conditions. The TA considers that the Supplementary Determination that will settle these terms and conditions will encourage the parties to make efficient investment in telecommunications infrastructure.

(d) the nature and extent of competition among the parties to the interconnection concerned and their respective abilities to compete with each other fairly

With PCCW-HKTC still being the dominant operator of the local fixed line market, it is essential that Type I interconnection be

made with PCCW-HKTC's network in an effective and efficient manner to facilitate a level playing field for other operators to compete. Self-built interconnection will be a long term establishment to replace interconnection by leasing links from PCCW-HKTC, and enables new network operators like NWT to develop truly self-reliant networks in competition with the incumbent.

(e) such other matters as the TA considers appropriate in the particular circumstances of the case such as

- the efforts made by the requesting party to secure an agreement with the other party within a reasonable time

In the First Determination, the TA determined the basic terms and conditions of self-built POI and left the remaining terms to be commercially agreed between the parties. The TA specified in the First Determination that if the parties were not able to reach agreement on these remaining terms and conditions within three months, either party could make a request to the TA for a supplementary determination. When NWT submitted the request for supplementary determination after the three-month period had expired, the parties were still not able to achieve any progress on the negotiation of the remaining terms and conditions.

- the chance for both parties to reach a commercial agreement with the other party within a reasonable time if the negotiations are to be continued

In view of the history of negotiations between the parties, the TA considers that it is unlikely for the parties to reach a commercial agreement within a reasonable time if the negotiations are to be continued.

- the consequences should the TA decide not to intervene

If the TA does not intervene, the parties are unlikely to reach

a commercial agreement within a reasonable time and this will hinder NWT's roll-out of its self-built interconnection network.

### **Scope of Determination**

7. Having considered the request for supplementary determination submitted by NWT, and the representations made by PCCW-HKTC on NWT's request, the TA set out the scope of the determination in a letter addressed to both parties on 13 August 2003:

- (a) location of the eight common POIs for self-built interconnection between the networks of the parties; and*
- (b) the migration plan for the migration of the existing interconnection arrangement between the networks of the parties to self-built POI interconnection arrangement.*

8. Subsequent to the TA's acceptance of NWT's request, the parties made submissions and provided information to the TA on matters falling within the scope of the Supplementary Determination, and were given the opportunity to comment on each other's submission and information. Having considered the submissions, the IDC set out its preliminary views in the Preliminary Analysis and invited the parties to comment on the Preliminary Analysis. The IDC has now reviewed the parties' comments and sets out its conclusion in the Final Analysis.

### **Background – The First Determination**

9. In the First Determination dated 23 April 2003, the TA determined the following:

- (a) the parties shall establish eight common POIs for self-built interconnection;
- (b) the eight POIs shall be the notional mid-points between eight out

of 11 exchanges, hubs or co-location facilities of NWT, and PCCW-HKTC's exchanges that are closest to the eight exchanges, hubs or co-location facilities of NWT;

- (c) a mix of T1 and E1 interface shall be deployed for the self-built POI interconnection, with the deployment of E1 links being capped at [REDACTED] units;
- (d) the OC-3 interface shall be deployed as the optical interface for the self-built POI interconnection;
- (e) each party shall bear the costs of constructing its own links to the common POIs and the associated establishment costs.

10. The TA left the issues of the location of the eight common POIs and the migration plan to the parties to negotiate. The TA stated that the migration should best be completed in stages, but in any event within reasonable time taking into account

- (a) the expiry dates of the current POI leasing agreements between the parties;
- (b) the fact that some of the hubs of NWT might still be under construction<sup>1</sup>; and
- (c) the need for PCCW-HKTC to migrate the services provided to the other customers using the spare margins of the links leased to NWT.

11. The parties were given three months to reach agreement on these terms and conditions. If no agreement could be reached on the expiry of the three-month period, either party could make a request to the TA for a supplementary determination. On 23 July 2003, NWT submitted a request for supplementary determination on the ground that the parties were not able to reach agreement on the outstanding terms and conditions.

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<sup>1</sup> In its submission to the First Determination, NWT stated that its [REDACTED], [REDACTED] site and [REDACTED] site were under construction.

## The Preliminary Analysis – Submissions of the Parties

### *Initial submissions of NWT*

12. On the choice of the common POIs, NWT submitted that radial distance should be applied to determine which PCCW-HKTC’s exchanges were “closest” to the 11 exchanges, hubs or co-location facilities of NWT. The table below is NWT’s submission of the 11 pairs of exchanges that lie closest to each other based on radial distance, the first eight pairs being the ones chosen by NWT for self-built common POIs:

	<i>NWT’s exchange</i>	<i>PCCW-HKTC’s exchange</i>	<i>Estimated radial distance (km)</i>	<i>Chosen by NWT</i>
1	Tsim Sha Tsui Exchange	Jordan Road Exchange <sup>2</sup>	1.05	Yes
2	Chai Wan Exchange	Chai Wan Exchange	0.79	Yes
3	New World Tower, Central	Admiralty Exchange	0.71	Yes
4	Renaissance Harbour View Hotel, Wanchai	Telecom House Exchange	0.34	Yes
5	Oxford House, Quarry Bay	King’s Road Exchange	1.25	Yes
6	Telford Plaza, Kowloon	Ngau Tau Kok Exchange	0.18	Yes
7	Discovery Park, Tsuen Wan	Tsuen Wan Exchange	0.53	Yes
8	Kwai Chung	Kwai Shing Exchange (or Kwai Chung Exchange)	1.52	Yes
9	Methodist House, Wanchai	Lockhart Exchange	0.10	No
10	51 Tsun Yip Street, Kwun Tong	Kwun Tong Exchange	0.32	No
11	Shatin	Yuen Chau Kok Exchange	2.53	No

13. NWT chose the first eight pairs of exchanges for self-built common POIs for the following reasons:

- (a) the eight sites of NWT were selected from the 11 locations specified in the First Determination;
- (b) there was a geographical balance of the locations: four in Kowloon and four on the Hong Kong Island;

<sup>2</sup> NWT submitted that PCCW-HKTC’s Hermes House Exchange was actually closer, but due to the ongoing KCR East Rail works it would be inconvenient to perform civil works in that area. Jordan Road Exchange was the nearest best alternative.

- (c) the eight locations were chosen on the basis of the transmission capacity availability between these locations and NWT Central Offices; and
- (d) the fibre network infrastructure of NWT in the chosen districts was relatively extensive so that agreement of notional mid points could be reached more easily.

14. NWT requested the TA to define the exact locations of the mid-points in this Determination. NWT submitted that “notional mid-points” should take the ordinary meaning of “theoretical, suggested or ideal” mid-points which were mutually agreeable to both parties, as opposed to PCCW-HKTC’s argument (during the parties’ negotiation) that notional mid-points meant the actual physical mid-points between the parties’ respective exchanges.

15. NWT listed the exact mid-points proposed for all 11 pairs of exchanges (the first eight pairs were chosen by NWT):

	<i>NWT’s exchange</i>	<i>PCCW-HKTC’s exchange</i>	<i>Proposed common self-built POI mid-point<sup>3</sup></i>	
			<i>Point A</i>	<i>Point B</i>
1	Tsim Sha Tsui Exchange	Jordan Road Exchange	[✂ ]	[✂ ]
2	Chai Wan Exchange	Chai Wan Exchange	[✂ ]	[✂ ]
3	New World Tower, Central	Admiralty Exchange	[✂ ]	[✂ ]
4	Renaissance Harbour View Hotel, Wanchai	Telecom House Exchange	[✂ ]	[✂ ]
5	Oxford House, Quarry Bay	King’s Road Exchange	[✂ ]	[✂ ]
6	Telford Plaza, Kowloon	Ngau Tau Kok Exchange	[✂ ]	[✂ ]
7	Discovery Park, Tsuen Wan	Tsuen Wan Exchange	[✂ ]	[✂ ]

<sup>3</sup> For the sake of cable diversity, two manholes at Point A and Point B are used for the connection points of optical fibre cables connecting each pair of PCCW’s and NWT’s exchanges.

	<i>NWT's exchange</i>	<i>PCCW-HKTC's exchange</i>	<i>Proposed common self-built POI mid-point<sup>3</sup></i>	
			<i>Point A</i>	<i>Point B</i>
8	Kwai Chung	Kwai Shing Exchange	[X ]	[X ]
9	Methodist House, Wanchai	Lockhart Exchange	[X ]	[X ]
10	51 Tsun Yip Street, Kwun Tong	Kwun Tong Exchange	[X ]	[X ]
11	Shatin	Yuen Chau Kok Exchange	[X ]	[X ]

For the 2<sup>nd</sup>, 10<sup>th</sup> and 11<sup>th</sup> pairs of exchanges, NWT submitted that no civil works of interconnection were currently in place. The exact locations of common self-built POIs had to be determined if these locations were selected. The estimated provisioning lead time was six months. For the rest of the exchange pairs, there were existing civil ductings leading self-built fibres from NWT's exchanges to the co-location facilities in the corresponding PCCW-HKTC's exchanges. The proposed provisioning lead time was four weeks if these locations were selected.

16. NWT proposed that the migration of POI links should occur based on the following criteria:

- (a) assumption that the first seven common self-built POI would be ready by October 2003 or within one month of the date of the Supplementary Determination;
- (b) the E1 POI links would be distributed as evenly as practicable in order to attain optimal diversity for each POI. The T1 links would all be migrated to one common self-built POI for ease of management;
- (c) migration would occur only with respect to those existing POI links the minimum service period of which had expired;
- (d) subject to (c) above, the migration of existing POI links to the common self-built POI would occur to the maximum extent;

- (e) the cutover rate should be no less than 30 E1/T1 links per week. This reflected the parties' prior experience under the existing POI agreement.

*Initial submissions of PCCW-HKTC*

17. PCCW-HKTC submitted that the common POI locations should be distributed in Hong Kong, Kowloon East, Kowloon West, New Territories East and New Territories West regions. It proposed the following eight of its exchanges for self-built interconnection:

- King's Road
- Po Man
- Mong Kok
- Jordan
- Pak Tin
- Yuen Chau Kok
- Tai Po Central
- Kwai Shing

PCCW-HKTC referred to the eight common POIs proposed by NWT during their negotiations<sup>4</sup>, and stated that they had already agreed on three locations, namely Jordan for Kowloon, King's Road for Hong Kong Island and Kwai Shing for New Territories West. The TA should focus on determining the remaining five common POIs.

18. With regard to NWT's choice of Telecom House Exchange as one of the locations, PCCW-HKTC stated that it was not a PCCW-HKTC's exchange building. PCCW-HKTC further commented that NWT had equipment present in Shatin area, but had deliberately chosen points outside New Territories East. PCCW-HKTC considered it unfair for PCCW-HKTC to bear all the fibre cost from New Territories East to the other regions. PCCW-HKTC claimed that NWT seemed to be applying a "tromboning" approach<sup>5</sup> to facilitate

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<sup>4</sup> Which were the same common POIs proposed by NWT in this Supplementary Determination.

<sup>5</sup> PCCW-HKTC referred to paragraph 8 of TA Statement No 8 (Revised) dated 18 March 2002 on "Point of Interconnection", which states "[i]n an interconnection between two fixed networks, particularly when competing networks have not been fully rolled out, it is sometimes more convenient and efficient for a network to go through part of the backbone infrastructure of another network to reach a point of interconnection, often known as 'tromboning'".

interconnection. If the TA considered that the request of NWT for POI locations was reasonable and that such interconnection had to be facilitated by PCCW-HKTC, PCCW-HKTC should be allowed to be compensated for leasing its fibre / trunk capacities to reach NWT's proposed common POI locations.

19. PCCW-HKTC did not consider it appropriate for the TA to determine the exact migration plan before the following considerations had been fully addressed and resolved:

- (a) the exact locations of the eight common POIs;
- (b) the leasing agreements on T1 and E1 links between PCCW-HKTC and NWT currently in force, which would expire at different times;
- (c) the fact that some of the hubs of NWT were still under construction;
- (d) the need for PCCW-HKTC to vacate spare margins of the leased links by migrating some existing customers from the existing services.

PCCW-HKTC also submitted that before the actual migration, it was necessary to perform interworking test as the parties were using different types of equipment from different vendors.

20. PCCW-HKTC stated that it had no spare capacity of E1 equipment at the moment to facilitate migration. It might need to vacate spare links currently used by other customers to proceed with the migration. Some customers might be reluctant to be migrated out from existing links or might even demand financial compensation. Before PCCW-HKTC could proceed to work out the migration plan, both NWT and PCCW-HKTC had to agree on the compensation terms to be given to PCCW-HKTC and its affected customers.

*NWT's comments on PCCW-HKTC's submissions*

21. The parties were given the opportunities to comment on each other's initial submissions. NWT made the following comments on PCCW-HKTC's

submissions:

- (a) PCCW-HKTC had failed to apply the “closest” principle in selecting the common POI locations. Of the exchanges proposed by PCCW-HKTC, only King’s Road, Jordan and Kwai Shing (all chosen by NWT) and Yuen Chau Kok (not chosen by NWT) satisfied the principle;
- (b) PCCW-HKTC was mistaken in considering geographical diversity without regard to the fact that the choice had to be made from the 11 NWT’s exchanges. Geographical diversity should only be considered with respect to choosing eight out of 11 pairs of potentially “closest” pairs of exchanges. NWT had already considered geographical diversity in proposing the eight pairs of exchanges;
- (c) NWT agreed that Jordan, King’s Road and Kwai Shing were three PCCW-HKTC’s exchanges that should form the basis of the Supplementary Determination;
- (d) PCCW-HKTC’s local exchange was located in Telecom House, where NWT also housed its co-location facilities. So long as PCCW-HKTC’s local exchange was there, the location should be eligible for self-built common POIs. It was irrelevant whether or not PCCW-HKTC owned the building premises;
- (e) PCCW-HKTC’s cost concern over “tromboning” was irrelevant. If PCCW-HKTC applied the First Determination properly, the parties would have eight pairs of closest exchanges. Where there was close proximity of exchanges, there should be no problem with direct POI links and no need for any “tromboning”;
- (f) NWT disagreed that a migration plan could not be formulated pending the choice of the eight pairs of exchanges, and rejected PCCW-HKTC’s calls for further commercial negotiation on the migration plan. In the past, PCCW-HKTC had exhibited no genuine intention to negotiate in good faith. The TA must make a detailed migration plan to resolve the whole issue conclusively

and to end any further delay;

- (g) NWT disputed PCCW-HKTC's excuse of lack of E1 capacity. PCCW-HKTC was obliged to provide up to [X] E1 POI links according to the First Determination.

*PCCW-HKTC's comments on NWT's submissions*

22. PCCW-HKTC made the following comments on NWT's submissions:

- (a) The choice of the common POIs should not be down to the specifics (i.e. the choice of manholes) because the exact manholes for interconnection should be mutually agreed after the physical check of the on-site conditions. There might be potential duct blockages, congested joint-boxes, insufficient lead-in facilities of exchange buildings. The determination of the location of the common POIs should be just to the level of exchange areas;
- (b) The presence of NWT's self-built fibre projects in some of the proposed locations was irrelevant because the physical configurations and requirements of self-built POIs were completely different from those of self-built fibres to PCCW-HKTC exchanges for co-location purposes. For self-built fibre projects, NWT entrusted PCCW-HKTC to lay optical fibres from an external point to the co-location site. For self-built POIs, both parties ran their own optical fibres from their respective exchanges up to an external point. A lot of civil works were required for the implementation. The estimated provisioning lead time for civil works alone would be 9 to 12 months;
- (c) It was not a cost-effective approach to distribute the E1 POI links evenly amongst the eight common self-built POIs, as the modularity of E1 transmission was usually below 75 E1s. Further, the T1 links should not be concentrated into one common self-built POI for the optimal diversity;
- (d) The existing POI links should be terminated according to the

existing commercial agreements with the appropriate advance notice periods;

- (e) The productivity of migration of existing POI links was subject to a number of factors, such as the availability of staff resources, of spare E1 ports of interconnection gateways, of spare E1 transmission equipment, the need for PCCW-HKTC to migrate the services it currently provided to the others using the spare margins of the links, the results of inter-working test between different E1 transmission equipment of both parties, the need to perform labour-intensive network conditioning activities throughout the migration periods, the need to set up an observation period after each of the first few lots of migration, the methodologies to migrate (whether on the basis of route types, switch pairs or both) etc. In short, it was unreasonable to prescribe a minimum cutover rate;
- (f) After the eight exchanges, hubs or co-location facilities of NWT had been determined, PCCW-HKTC would choose the appropriate exchanges according to the “closest” principle. The word “closest” should not be taken to mean “nearest in distance” along a “radial” path between exchanges. The physical routing of underground ducts should also be considered. Under certain special circumstances, the “closest” exchanges should not be chosen (eg ongoing East Rail works in Tsim Sha Tsui and the busy roads along the Central Business Corridor);
- (g) The 11 locations specified in the First Determination were far from reasonable. This distribution showed an extreme bias to Hong Kong Island and could not reflect the current POI E1 distribution;
- (h) It was unreasonable to assume that the notional mid-points should be close to the PCCW-HKTC’s exchanges. The parties had to perform physical inspection to finalise the specific manholes or joint-boxes for the set up of common POI interconnection arrangement.

*Further information provided by the parties*

23. Upon review of the submissions and comments of the parties, the IDC requested the parties to make clarifications on their submissions or supply further information. In response to the IDC's request, NWT provided the following further information:

- (a) A list showing the expiry dates of the minimum service period of the POI links currently leased by NWT from PCCW-HKTC;
- (b) Copies of the leasing agreements; and
- (c) Confirmation that the construction of [X ] had been completed<sup>6</sup>.

PCCW-HKTC was given the opportunity to comment on these clarifications and further information. PCCW-HKTC pointed out that by the end of November 2003, NWT had leased [X ] T1s, not [X ] as shown in NWT's list. It also said that NWT should reveal its plan of establishing additional new sites, particularly in New Territories East, New Territories West, Central Kowloon and Hong Kong West.

24. At the request of the IDC, PCCW-HKTC provided the following further information:

- (a) Besides the common choice of Jordan, King's Road and Kwai Shing exchanges, PCCW-HKTC only identified Yuen Chau Kok exchange to match NWT's Shatin site<sup>7</sup>. It claimed that it needed more time and study to explore the pairing of the remaining four choices;
- (b) Information relating to the customers of PCCW-HKTC that were served by the spare margins of links leased to NWT

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<sup>6</sup> In its submissions to the First Determination, NWT stated that the two sites were under construction.

<sup>7</sup> PCCW-HKTC only nominated its own exchanges in its initial submissions. It made no reference to its choice of the eight NWT's sites to pair up with its exchanges. PCCW-HKTC was specifically asked by the IDC to clarify its proposal in relation to the "pairing" of PCCW-HKTC and NWT exchanges.

PCCW-HKTC claimed that [X] customers would be directly affected and [X] customers indirectly affected by the migration. There were two types of services currently provided to the directly affected customers: one was dataline E1 for general business customers, the other was IDA E1 for mobile network operators. Most of these services were tariffed services subject to the gazetted terms and conditions. The installed capacity involved was about [X] E1s. PCCW-HKTC had no detailed plan on the migration of the services of these customers. The required technical work and provisions were subject to case by case consideration. PCCW-HKTC reiterated that NWT should compensate its loss in revenue, costs incurred, migration and engineering efforts together with any financial payment, losses or damages to be claimed by PCCW-HKTC's customers as a result of migration from leased POI to self-built POI arrangement.

25. NWT had been given the opportunity to comment on PCCW-HKTC's further information. NWT considered that PCCW-HKTC had had ample time to provide its own proposal on the pairing of the exchanges but had not done so. Further, PCCW-HKTC's decline to propose a migration plan for its customers was in effect withholding information on the possible internal hurdles in implementation and migration. PCCW-HKTC had been given the opportunity to be heard and the TA must proceed to make the Supplementary Determination based on the information before him. NWT considered that PCCW-HKTC should absorb the full liability, loss in revenue, claims of its customers etc resulting from the implementation of the self-built POI arrangement. It was only the neglect or tactics of PCCW-HKTC not to make use of the ample time (from April 2003 onwards) to plan ahead that resulted in its customers having to suffer, if at all.

## **The Preliminary Analysis – The IDC's Views**

### *Location of eight common POIs*

26. In the Preliminary Analysis, the IDC referred to the First Determination<sup>8</sup>, which stated that the common POIs had to be the notional mid-

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<sup>8</sup> Paragraph 3(b) of the First Determination.

points between eight out of 11 specified NWT's sites and the PCCW-HKTC's exchanges that were closest to these sites. Before the actual notional mid-points were chosen, the pairing of NWT's / PCCW-HKTC's exchanges had to be decided first. The IDC noted in the Preliminary Analysis that the parties had basically agreed on the choice of three pairs of exchanges:

<u>NWT's exchanges</u>	<u>PCCW-HKTC's exchanges</u>
Tsim Sha Tsui	Jordan
Oxford House, Quarry Bay	King's Road
Kwai Chung	Kwai Shing

The IDC therefore focussed on selecting the remaining five pairs of exchanges.

27. The First Determination had prescribed that the choice had to be made from the listed NWT's sites. With three of them already agreed by the parties, there left eight NWT's sites to choose from:

- Chai Wan Exchange
- New World Tower, Central
- Renaissance Harbour View Hotel, Wanchai
- Telford Plaza, Kowloon Bay
- Discovery Park, Tsuen Wan
- Methodist House, Wanchai
- 51 Tsun Yip Street, Kwun Tong
- Shatin

28. In its submission, PCCW-HKTC raised the issue of geographical diversity, and submitted that the common POI locations should be distributed in Hong Kong, Kowloon East, Kowloon West, New Territories East and New Territories West. The IDC opined that this issue had been thoroughly discussed by the IDC and considered by the TA in the First Determination, in which the TA had affirmed the IDC's view that:

*... it would not be fair to require NWT to establish interconnection links to accommodate only the network planning of PCCW-HKTC, given that this is a scheme of establishing "common" POIs. A review of the list of hubs / exchanges of NWT and the list of PCCW-HKTC's exchanges co-located by NWT shows that NWT's current*

*network has not extended to Tuen Mun, Tin Shui Wai, Yuen Long, Sheung Shui, Fanling and Tai Po. It is therefore unreasonable to require NWT to physically build its network to cover these areas to accommodate PCCW-HKTC's network planning. (paragraph 90 of the Final Analysis of the First Determination)*

29. The purpose of this Supplementary Determination was to decide the outstanding matters that were left by the First Determination. The IDC said that it would not re-visit issues on which the TA had already taken a view and determined. The choice of the eight common POIs should therefore be made from the 11 NWT's sites that were listed in the First Determination.

30. This, however, was not to say that the choice was to be made without any regard to PCCW-HKTC's need for geographical diversity. The IDC referred to paragraph 92 of the Final Analysis of the First Determination, which stated that:

*Although the IDC does not consider that PCCW-HKTC is entitled to demand NWT to build its network to cover the New Territories area identified by PCCW-HKTC, PCCW-HKTC's needs should be accommodated to the extent possible, having regard to the current network expansion of NWT.*

This meant that PCCW-HKTC's need for geographical diversity would be considered within the confines of the 11 NWT's sites listed in the First Determination.

31. PCCW-HKTC complained in its submission that NWT's choice was heavily biased towards the Hong Kong Island. Of the 11 NWT's sites, five were located on the Hong Kong Island, and six in Kowloon / New Territories. Given that PCCW-HKTC had a ubiquitous network, the IDC considered that more common POIs should be chosen on the Kowloon / New Territories side. The IDC was of the preliminary view that two common POIs should be sufficient for the Hong Kong Island, and all of six NWT's sites in Kowloon / New Territories (out of which two have been agreed by the parties) should be chosen for establishing common POIs. They were:

- Kwai Chung (agreed by parties)

- Tsim Sha Tsui (agreed by parties)
- Telford Plaza, Kowloon Bay
- Discovery Park, Tsuen Wan
- 51 Tsun Yip Street, Kwun Tong
- Shatin

32. On the Hong Kong side, the parties had already agreed on the pairing of “Oxford House, Quarry Bay (NWT) – King’s Road (PCCW-HKTC)” in Hong Kong East. NWT’s other four sites on the Hong Kong Island were located respectively in Central (one site), Wanchai (two sites) and Chai Wan (one site). Bearing in mind the need to give as much geographical diversity as possible to both parties, the IDC did not regard Chai Wan an ideal choice for it was too close to Quarry Bay and too far away from the Central Business District. Of the three NWT sites in Central and Wanchai, the IDC indicated that it had no particular preference, but noted that PCCW-HKTC had voiced concerns about choosing its Telecom House Exchange<sup>9</sup> (which, according to NWT, paired up with NWT’s Renaissance Harbour View Hotel site), and NWT had not chosen its Methodist House site<sup>10</sup>. Taking into account these submissions, the IDC took the preliminary view that the New World Tower Exchange in Central should be selected as the second site on the Hong Kong Island for self-built POI interconnection.

33. With all eight NWT’s sites chosen, the IDC proceeded to the next step which was the choosing of the pairing PCCW-HKTC’s exchanges. The IDC considered that this was where the “closest” distance principle came into play. NWT proposed to use radial distance to do the measurement, and identified 11 PCCW-HKTC’s exchanges that were closest to its own 11 sites. PCCW-HKTC disagreed with the radial distance approach but had not shown, as the IDC had specifically requested, how the eight PCCW-HKTC’s exchanges that it proposed satisfied the closest distance principle.

34. The IDC considered that measurement by radial distance was a more transparent and straight-forward way to decide which PCCW-HKTC’s exchanges were closest to NWT’s sites. The physical routing of underground ducts (that PCCW-HKTC referred to as being relevant information) was likely to be information not readily available to either or both parties and would take

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<sup>9</sup> See paragraph 18 above.

<sup>10</sup> See paragraph 12 above.

a long time and effort for them to assess and verify. This would only delay the whole process of the self-built POI interconnection. The IDC hence agreed with NWT's proposal to use the radial distance approach.

35. As PCCW-HKTC had not submitted any contrary information or data to show that NWT's measurement by radial distance was inaccurate, the IDC accepted NWT's submission that the PCCW-HKTC's exchanges proposed by NWT were closest to NWT's own sites. The pairing of the exchanges should therefore be:

<u>NWT</u>	<u>PCCW-HKTC</u>
Tsim Sha Tsui	Jordan (agreed by parties)
Oxford House, Quarry Bay	King's Road (agreed by parties)
Kwai Chung	Kwai Shing (agreed by parties)
New World Tower, Central	Admiralty
Telford Plaza, Kowloon	Ngau Tau Kok
Discovery Park, Tsuen Wan	Tsuen Wan
51 Tsun Yip Street, Kwun Tong	Kwun Tong
Shatin	Yuen Chau Kok

36. The First Determination specified that the POIs had to be the "notional mid-points" between the respective pairs of NWT and PCCW-HKTC exchanges. The IDC took the view that the concept of "notional mid-points" clearly did not mean the exact or actual mid-points by measuring the distance between the two exchanges. The fact that reference was made to "notional" allowed flexibility to the parties of interconnection to find the most ideal, convenient and / or technically feasible points for interconnection<sup>11</sup>.

37. NWT's submission made detailed proposal on the exact manholes at which the common POIs should be located. PCCW-HKTC considered that the determination should not be made to such specific details. The IDC was of the preliminary view that physical check of the on-site conditions was desirable before a specific manhole was cleared for being deployed as a common POI. However, the IDC said it was also aware that such desirability for "further inspection" might potentially be exploited by a party as a tactic to

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<sup>11</sup> "[I]nterconnection shall be facilitated at any point in a network where interconnection is technically feasible upon request by a fixed network operator for interconnection. The POI is a notional point in the middle of the link connecting the two networks," paragraph 3 of TA Statement No 8 (Revised) dated 18 March 2002 on "Point of Interconnection".

delay the self-built POI project. What the IDC therefore proposed to do was that the migration plan would allow a specific period which the IDC regarded as reasonable for the parties to perform on-site inspections and negotiations to determine the exact manholes / locations for establishing common POIs. The assistance of OFTA staff might be called upon if necessary to give advice. The parties were expected to complete the selection and negotiations during the specified period and move on to the next step to implement the self-built POI arrangement. More details on the migration plan were given in paragraphs 39 – 52.

38. The IDC also addressed the “tromboning” argument of PCCW-HKTC. The IDC considered that the self-built POI configuration as envisaged in the First Determination or this Supplementary Determination had nothing to do with tromboning. Tromboning only occurred where a network went through part of the backbone infrastructure of another network to reach a point of interconnection. This was not the case here. In respect of all eight pairs of exchanges nominated by the IDC for self-built POI interconnection, the parties would directly interconnect with each other at the notional mid-points by establishing eight common POIs. There was no need to go through any intermediate backbone infrastructure to effect the interconnection.

#### *Migration plan*

39. On migration plan, the first question before the IDC was whether it was appropriate for the TA to map out the migration plan at this stage. PCCW-HKTC said no but NWT urged the TA to make a determination on this point to avoid further delay.

40. The IDC found that there was no sound basis to support PCCW-HKTC’s argument that that TA should not make a determination on the migration plan. The choice of the eight common POIs would have been decided in this Supplementary Determination. NWT had submitted a list of the T1 and E1 links that were currently leased from PCCW-HKTC. The IDC noted that about [ ] of these links had already expired (as of end 2003) and another [ ] would expire before the end of 2004. With such information available, the IDC was of the preliminary view that there was no reason why a migration plan could not be worked out.

41. PCCW-HKTC claimed lack of spare E1 links for the migration, as well as difficulty of migrating its customers who were using the spare margins of the E1 or T1 links currently leased to NWT. The IDC did not consider that these constituted valid reasons to stall the migration process or formulation of the migration plan. It was stated in the First Determination that the migration plan should take into account, inter alia, the need for PCCW-HKTC to migrate the services provided to the other customers using the spare margins of the links leased to NWT. The intention was to allow PCCW-HKTC to plan an orderly and smooth migration of the services provided to these customers whilst implementing the self-built POI arrangement. However, PCCW-HKTC's submission in this Supplementary Determination was effectively saying that its customers could not be migrated at all without incurring loss and compensation on the part of PCCW-HKTC, and PCCW-HKTC was looking to NWT for compensation.

42. The IDC considered that PCCW-HKTC was putting forward an argument that was different from the one envisaged and dealt with by the TA in the First Determination. PCCW-HKTC's problem, as submitted in this case, was in fact not a question of how the migration plan (of transitioning to the self-built POI arrangement) could be adjusted to enable PCCW-HKTC to migrate its services to the customers. The position of PCCW-HKTC appeared to be that no form of adjustment to the migration plan was possible or would be considered by PCCW-HKTC unless the compensation issue was sorted out first. The real issue for PCCW-HKTC was therefore one of compensation, not timetable, or manner of implementation that was envisaged in the First Determination. The IDC did not consider that PCCW-HKTC was entitled to claim compensation from NWT to migrate the services provided to its own customers. Indeed it was not a pre-condition that services provided to PCCW-HKTC's customers had to be migrated before the migration to the self-built POI arrangement could take place. Whilst the parties should try to accommodate as realistically as possible PCCW-HKTC's needs of service migration, if PCCW-HKTC was, for one reason or another, unwilling or unable to migrate the services provided to its customers at all in order to spare the E1 links for the self-built POI arrangement, then the IDC considered that PCCW-HKTC had to find some other way to implement the self-built POI arrangement. In coming to this view, the IDC also referred to paragraph 95 of the Final Analysis of the First Determination:

*... the IDC would like to point out that the establishment of self-built POIs involves investment from both interconnecting parties. Whilst NWT is expected to invest in T1 links when the cap on the [X] E1 connection is exceeded, PCCW-HKTC should also invest in E1 links if its current stock is not able to support the requirements.*

The IDC said that, at the end of the day, if PCCW-HKTC could not spare E1 links or did not have spare E1 links to implement the self-built POI arrangement, then it should invest in E1 links in order to comply with the TA's determination.

43. Having said that, and despite the lack of information and proposal from PCCW-HKTC on how the services provided to its customers could be migrated, the IDC would map out a migration plan that would take into account PCCW-HKTC's need to migrate its customers. In so doing, the IDC bore in mind paragraph 3(e) of the First Determination that the migration should be completed "in any event within reasonable time".

44. On the distribution of the links, NWT proposed that the E1 links should be distributed as evenly as practicable, whilst the T1 links would all be migrated to one common POI. PCCW-HKTC disagreed to this approach. On this issue, the IDC took the preliminary view that while it was generally agreed that the E1 links should be distributed as evenly as possible to attain optimal diversity, the need to migrate the services provided to the other customers using the spare margins of the links leased to NWT as stipulated in the First Determination would need to be taken into account as a consideration. To facilitate making use of the spare margins, the IDC also accepted that modularity should be considered with a view to minimising the number of the transmission equipment deployed by PCCW-HKTC in the self-built POI. The IDC therefore considered that the "even distribution" approach should be modified to accommodate these considerations. Further, to be consistent with the principle of distributing links evenly, the IDC did not accept the proposition of migrating all the T1 links concerned to one common self-built POI. On the other hand, the IDC accepted NWT's concerns over the need for ease of management and sees the undesirability of having a small number of T1 links distributed among all eight pairs of exchanges. In view of the fact that the connection of the existing [X] T1 links (or [X] T1 links as PCCW-HKTC claims) was made between three exchanges of PCCW-HKTC to two exchanges

of NWT, the IDC took the view that these T1 links should be accommodated in not more than three pairs of exchanges.

45. In the First Determination, the TA stated that the migration should, among other things, take into account the need to migrate the services provided to the other customers using the spare margins of the links leased to NWT. The IDC was of the view that the essence of the need was whether PCCW-HKTC was given reasonable lead-time to cope with the redeployment of the existing transmission equipment for the E1 links and carry out the necessary arrangements required to minimize service interruption to those customers who would potentially be affected by the migration process. To address the need, the IDC considered that the migration should take into account the modularity of the E1 transmission equipment and should take place in sequence with a prescribed rate.

46. Of the links under the existing POI leasing agreement connecting the networks of the parties, [X] E1 and [X] T1 links had already expired at the end of 2003, while another [X] E1 links would expire by the end of October 2004. The expiry dates of the remaining [X] E1 and [X] T1 links spread over a 12-month period starting from the second half of 2005. The IDC considered that the migration should be conducted in two phases. The first phase involved the links that had already expired and those that would expire by October 2004 (“Phase 1”), while the second phase covered the remaining links (“Phase 2”).

47. The IDC also took note of a TA’s determination made in March 2001 in respect of interconnection capacity between PCCW-HKTC and Wharf T&T Limited<sup>12</sup> (“POI Capacity Determination”) in which it set a negotiation period of 30 calendar days for the parties to agree on the terms of interconnection and a delivery time of six weeks for additional POI capacity over new routes using existing switch or involving expansion at existing switch. Although the POI Capacity Determination was not made on the provisioning time for a migration plan to common POIs, the IDC considered that the timeframe should be used as far as possible in respect of provisioning of POI capacity in the migration process given the similarity of the procedures and technical considerations involved.

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<sup>12</sup> Determination under section 36A of the Telecommunications Ordinance of the terms and conditions for the provision of point of interconnection capacity for interconnection between the fixed telecommunications networks of New T&T Hong Kong Limited [now Wharf T&T Limited] and PCCW-HKT Telephone Limited dated 16 March 2001.

48. NWT proposed a cut-over rate of no less than 30 E1/T1 per week but PCCW-HKTC disagreed with prescribing such a requirement. Based on the modularity of typical E1 transmission equipment, the IDC proposed to specify a migration rate of at least 63 E1 links per month to avoid protracted migration process. The rate should enable the migration of all the E1 links involved in Phase 1 in [X] months. To cater for flexibility in carrying out the actual implementation, the IDC considered that the rate of migration might, if the parties agreed, vary for any given month, but the whole migration process for Phase 1 should in any case be completed in [X] months at an average rate of not less than 63 E1 links per month.

49. Having regard to the need for the migration, the IDC took the view that PCCW-HKTC should be in a better position to devise a migration plan at the initial stage. After the completion of the Supplementary Determination, PCCW-HKTC shall, in consultation with NWT, within 30 calendar days (“Negotiation Period”) after receipt of a written request from NWT for migration of the E1 and T1 links subject to their expiry dates under the existing leasing agreement, devise a detailed migration schedule for completion of the Phase 1 migration in [X] months. The migration of the E1 links shall be performed at an average rate of not less than 63 links per month. The detailed migration schedule shall, inter alia, also specify the eight pairs of manholes at which interconnection shall be facilitated. The actual migration process shall start within six weeks from the end of the Negotiation Period.

50. The IDC further stated that if PCCW-HKTC and NWT cannot agree on the detailed migration schedule for the migration in Phase 1 within the Negotiation Period, NWT may, upon the expiry of the Negotiation Period, propose a detailed migration schedule to PCCW-HKTC and the TA. NWT’s proposed migration schedule is required to satisfy the following requirements as well as those stipulated in the First Determination (see Paragraph 3 of the First Determination), unless the parties agree to dispense with any of the requirements:

- (a) The E1 links after the migration shall achieve an overall efficiency of not less than 85 % of the total capacity of the PCCW-HKTC’s dedicated E1 transmission equipment for the common POI taking into account of the modularity of the

transmission equipment<sup>13</sup>;

- (b) Without prejudice to (a), the E1 links after migration shall be distributed as evenly as practicable among the eight pairs of exchanges to attain optimal diversity;
- (c) The eight pairs of manholes specified by NWT for interconnection in its detailed migration schedule shall not deviate from those proposed by NWT in its submissions to the TA (see paragraph 15), subject to any physical constraints in respect of any of the manholes proposed. In respect of the exchanges “51 Tsun Yip Street, Kwun Tong (NWT) – Kwun Tong Exchange (PCCW-HKTC)” and “Shatin (NWT) – Yuen Chau Kok (PCCW-HKTC)”, for which NWT has not made any proposal on the choice of manholes, NWT is required to specify manholes that are physically able to accommodate the interconnection;
- (d) The migration of no less than [X] E1 and [X] T1 links shall take place as evenly as practicable and complete in [X] months; and
- (e) Migration shall only take place in respect of those existing POI links the minimum service period of which has expired;

The TA will, as soon as he receives NWT’s proposed detailed migration schedule, examine the schedule to see if it conforms to all the requirements set out in this paragraph (including the requirements stipulated in the First Determination). If the TA is satisfied that the schedule satisfies all requirements, the TA will confirm to both parties that the schedule shall be adopted and followed by the parties. For the avoidance of doubt, the actual migration process shall start within six weeks from the date the detailed migration schedule is confirmed by the TA.

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<sup>13</sup> According to PCCW-HKTC, the utilization efficiency of the E1 transmission equipment would be as low as 60 % if [X] E1s are evenly distributed over the eight pairs of exchanges. It would not be a cost-effective approach for both parties. It is noted that accommodating all [X] E1s requires [X] pieces of transmission equipment with a modularity of 63 E1s. To allow for more flexibility in the migration process, the IDC considers that the E1s can be accommodated in not more than [X] pieces of the transmission equipment. This is converted into a utilization efficiency of at least 85 % ( $\sim [X] / ([X] \times 63)$ ).

51. For the remaining E1 and T1 links to be migrated in Phase 2, the IDC considered it unnecessary to prescribe any special arrangements to police the migration progress for the following reasons:

- (a) the relatively small amount of links involved in this phase;
- (b) the availability of abundant lead-time for the necessary coordination activities;
- (c) the experience that the parties would have accumulated in the migration process for Phase 1; and
- (d) the availability of E1 links that would be rendered idle in the migration process for Phase 1.

The IDC considered that the migration shall simply take place within six weeks after the date of receipt of written request from NWT for migration of these links, and complete by the time the minimum contract period of the last E1 or T1 links leased by NWT expires.

52. The IDC emphasised that in working out the detailed migration schedule and implementing the migration, the parties would be expected to comply with the time frame of the migration plan set out by the TA in the Supplementary Determination. Delay or non-compliance with the migration plan or any other terms and conditions of the First Determination or the Supplementary Determination will be a matter seriously looked upon by the TA. Under section 36B of the Ordinance, the TA is empowered to issue a direction requiring the parties to take such action as necessary to secure interconnection. Failure to comply with the direction will attract a penalty under section 36C.

### **The Final Analysis – Submissions of the Parties**

53. The parties have been invited to comment on the Preliminary Analysis issued on 12 February 2004. In response, NWT submits that it fully concurs with the Preliminary Analysis and has nothing further to add. PCCW-HKTC's comments are summarised in paragraphs 54 – 66 below.

*Location of the eight common POIs*

54. PCCW-HKTC disagrees that the selection of the eight common POIs should be made from the 11 NWT's sites listed in the First Determination. The locations of the eight common POIs should be determined based on the most currently updated exchanges, hubs or co-location facilities of NWT. Relying on the latest information received pursuant to the "Guidelines for Road Opening for Telecommunications/Broadcasting Operators" relating to road openings for the purposes of laying ducts by other operators over the past years, PCCW-HKTC claims that NWT has already rolled out its self-built networks to New Territories including Tuen Mun, Tin Shui Wai, Yuen Long, Sheung Shui, Fanling and Tai Po. PCCW-HKTC further argues that the scope of this Supplementary Determination as stated in OFTA's letter dated 13 August 2003 has not limited the selection of the eight common POIs from the sites set out in the First Determination.

55. PCCW-HKTC submits that the IDC has not considered the geographical diversity and actual distribution of traffic flowing in the territory in proposing two POI locations in the Hong Kong Island, three in Kowloon, and three in the New Territories. The selection is biased as PCCW-HKTC has to bear all the costs to cope with the self-built POI arrangement by conveying interconnection traffic from the common POIs to PCCW-HKTC's local exchanges located in more remote New Territories areas.

56. In choosing the common POIs, the parties should not only take into account the "radial distance" factor. There are many other factors that should be taken into account to arrive at the most cost-effective, fastest and technically feasible long-term solution. These factors generally refer to the physical and technical feasibility of interconnecting with the exchanges.

57. PCCW-HKTC reveals the common POI arrangements made respectively with [REDACTED]

] as benchmark references:

- POI locations agreed with [REDACTED]

]

- POI locations agreed with [✂

]

58. For the Hong Kong Island, PCCW-HKTC prefers only one common POI. If the IDC insists on adopting two common POIs, the second POI should not be too close to King's Road (which is agreed by the parties). PCCW-HKTC proposes the second common POI to be between West Exchange and New World Tower, Central, in replacement of the IDC's choice of Admiralty Exchange – New World Tower. The radial distance from the New World Tower to West Exchange is 0.9 km, whereas the radial distance from the New World Tower to Admiralty Exchange is 0.7 km. The difference of 0.2 km is negligible. PCCW-HKTC says that West Exchange is better located and equipped for establishing self-built POI. [✂ ] have both chosen West Exchange as one of their common POIs.

59. PCCW-HKTC submits that the IDC's choices for Kowloon (Ngau Tau Kok and Kwun Tong) are too close to each other. Besides, neither exchange is desirable because of the insufficiency of various facilities and the possible redevelopment of that area. In addition to Jordan (which is agreed by the parties), PCCW-HKTC reiterates its proposal of Po Man, Mongkok and Pak Tin, but Pak Tin will have to be dropped if the IDC insists on having two common POIs on the Hong Kong Island.

60. For the New Territories, PCCW-HKTC agrees to the selection of Kwai Shing and Yuen Chau Kok, but considers that Tsuen Wan should be dropped for being too close to Kwai Shing. PCCW-HKTC reiterates its proposal of Tai Po Central.

#### *Migration plan*

61. PCCW-HKTC insists that the TA should not make a determination on the migration plan until the exact locations of the common POIs and implementation details have been finalised.

62. It also disagrees that the negotiation period of 30 days set by the TA in the POI Capacity Determination should apply to this case. The POI Capacity Determination was based on the provisioning lead-time for leased POI, where the same transmission equipment was used end-to-end. In the present case, PCCW-HKTC and NWT are using different equipment vendors. Interworking test is required to confirm the compatibility of transmission equipment. PCCW-HKTC also argues that additional work is required for implementing self-built POI arrangement, such as civil work and traffic migration from the existing leased POIs to common POIs.

63. Moreover, with limited capacity of E1, PCCW-HKTC may need either to migrate existing customers to spare out the E1 capacity, or to build additional E1 capacity. It usually takes months to make appointments with target customers for the implementation of an interruption-free service migration during low traffic periods. On the other hand, additional E1 capacity provisioning would require longer lead-time for equipment ordering and delivery from overseas suppliers, as well as installation and testing.

64. On the distribution of the E1 links to the eight common POIs, PCCW-HKTC proposes the following provision plan with 95% efficiency:

Points	Installed	In Use	Efficiency
1	[X ]	[X ]	100%
2	[X ]	[X ]	75%
3	[X ]	[X ]	100%
4	[X ]	[X ]	100%
5	[X ]	[X ]	100%
6	[X ]	[X ]	100%
7	[X ]	[X ]	100%
8	[X ]	[X ]	100%
Sum	[X ]	[X ]	95%

For T1 links, there would be unlimited growth and hence it is not necessary to restrict the distribution to not more than three pairs of exchanges.

65. PCCW-HKTC reveals the migration rate for T1 links in its implementation of self-built POI arrangement with [X ] as benchmarking reference. PCCW-HKTC claims confidentiality on the exact rate (which is disclosed to the IDC). Suffice it to say that the rate was below the average migration rate of 63 E1 links prescribed by the IDC in the Preliminary Analysis.

PCCW-HKTC claims that it is impossible to migrate all [X] E1 links of Phase 1 in [X] months. It considers the following schedule more practical:

<i>Month</i>	<i>Activities</i>
1 – 3	Agree on the exact location of eight common POIs (3 months)
1 – 20	Migrate other customers using spare margins of the links leased to NWT (20 months)
4 – 7	Conduct inter-working test (4 months) <sup>14</sup>
8 – 21	Implement eight common POIs (14 months) <sup>15</sup>
22 – 24	Install the redeployed or new transmission equipment (3 months)
25	Take online traffic at common POIs

66. Further, to manage such a large scale project, PCCW-HKTC proposes to implement the project in two phases. Phase A will cover the first lot of four common POIs at the agreed exchanges, ie Jordan, King's Road, Kwai Shing and Yuen Chau Kok, starting from May 2004 to May 2006 (25 months). Phase B will cover the second lot of four common POIs at locations to be determined, starting from May 2005 to May 2007 (25 months).

### **The Final Analysis – The IDC's Views**

67. Having considered the further submissions of the parties, the IDC has come to a final view on the issues. The analysis and conclusions of the IDC are set out in the paragraphs that follow.

#### *Location of the eight common POIs*

68. The IDC takes note of the two other self-built POI arrangements that PCCW-HKTC makes with [X]. In both cases, the parties have established two POIs on the Hong Kong Island, three in Kowloon, and three in the New Territories. In view of these previous arrangements, the IDC has difficulty in understanding PCCW-HKTC's preference for only one common POI on the Hong Kong Island. In fact, whilst the IDC's selection of

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<sup>14</sup> PCCW-HKTC provides benchmark references of 4 – 5 months in the cases with [X].

<sup>15</sup> PCCW-HKTC provides benchmark references of 14 – 16 months in the cases with [X].

the eight common POIs has been based on considerations like the roll out coverage of NWT and the need of PCCW-HKTC for geographical diversity, the IDC's preliminary choice happens to fall within the broad geographical pattern of the other two self-built POI arrangements, with two POIs on the Hong Kong Island (King's Road, Admiralty), three in Kowloon (Jordan, Ngau Tau Kok, Kwun Tong) and three in the New Territories (Kwai Shing, Tsuen Wan, Yuen Chau Kok). Given these considerations, the IDC does not consider there are any justifiable grounds to reduce the number of POIs on the Hong Kong Island to one.

69. Regarding the choice of the individual common POIs, PCCW-HKTC has indicated its acceptance of the "Shatin (NWT) – Yuen Chau Kok (PCCW-HKTC) pair, thus making the total number of POIs agreed or accepted by the parties to four. On the Hong Kong Island side, the "Oxford House – King's Road" pair is already agreed. For the second POI, PCCW-HKTC prefers West Exchange to Admiralty Exchange. The IDC accepts that the difference of 0.2 km in distance from the NWT's site to the respective PCCW-HKTC's exchanges is negligible. As such the "closest distance" factor is neutralised. The IDC also notes that NWT has rolled out its network to that area through co-locating its facilities at West Exchange, and that the exchange has also been accepted by [X] and [X] for their respective self-built interconnection arrangements. Taking all these considerations into account, the IDC is prepared to accept the pairing of "New World Tower – West Exchange" as the second common POI for the Hong Kong Island in replacement of its preliminary proposal.

70. In respect of the common POIs in Kowloon, only the "Tsim Sha Tsui (NWT) – Jordan (PCCW-HKTC)" pair is agreed. The IDC considers that the Po Man, Mongkok and/or Pak Tin exchanges proposed by PCCW-HKTC lie too far away from the NWT's sites of Telford Plaza and Tsun Yip Street in Kowloon to satisfy the "closest distance" factor, or have an effect of "neutralising" the factor. As repeatedly explained in the First Determination and the Preliminary Analysis of this Supplementary Determination, NWT should not be required to establish interconnection links to accommodate only the network planning of PCCW-HKTC. PCCW-HKTC's need for geographical diversity should be taken care of to the extent possible having regard to the network coverage of NWT. In the circumstances, the IDC will maintain its choices of all three common POIs in Kowloon.

71. For the New Territories, the pairing of “Kwai Chung (NWT) – Kwai Shing (PCCW-HKTC)” and “Shatin (NWT) – Yuen Chau Kok (PCCW-HKTC)” is accepted by the parties. The IDC’s choice of “Discovery Park (Tsuen Wan) – Tsuen Wan (PCCW-HKTC)” is not accepted by PCCW-HKTC. PCCW-HKTC claims that NWT has already rolled out to many parts of the New Territories, and the choice of common POIs should be based on the most currently updated sites of NWT, but not restricted to those 11 sites listed in the First Determination.

72. The present determination is “supplementary” to the First Determination. This necessarily means that the present determination is meant to resolve the issues arising from or remaining to be decided in the First Determination. Paragraph 3(b) of the First Determination expressly states that the POIs shall be notional mid-points between eight of the 11 NWT’s sites listed in that sub-paragraph (1) and the PCCW-HKTC’s exchanges that are closest to those eight NWT’s sites. Accordingly, paragraph 3(g) of the First Determination<sup>16</sup>, as well as the scope of this Supplementary Determination laid down in OFTA’s letter of 13 August 2003, should be understood to mean that the common POIs should be chosen within the boundaries set out in the First Determination.

73. The IDC accepts that in exceptional cases where the circumstances are fully justifiable, the TA may re-consider or re-visit the issues that have been determined in a previous determination. However the IDC does not consider that the arguments and supporting evidence submitted by PCCW-HKTC in this case justify such reconsideration. In the first place, the alleged expanded network coverage of NWT is only an “estimation” by PCCW-HKTC based on the road opening applications submitted by NWT. This does not necessarily represent the actual road works undertaken by NWT.

74. The IDC also finds it unsatisfactory that PCCW-HKTC chooses to submit the argument and the supporting information at this late stage, as under the Procedures, NWT does not have an automatic opportunity to respond to the argument. Nonetheless, the IDC has considered whether it should exercise its

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<sup>16</sup> Paragraph 3(g) of the First Determination provides that “[t]he parties shall negotiate further with a view to agreeing on the exact location of the eight common POIs and the detailed migration plan. If the parties are not able to reach any agreement within three months from the date hereof, either party may make a request to the TA for a supplementary determination on these issues...”

discretion to ask NWT to specifically respond to this argument, and concluded that it is not necessary to do so. For one, the case has already protracted for too long, bearing in mind that NWT first initiated the negotiation in August 1998. PCCW-HKTC has had ample opportunities before, during or after the First Determination to raise these issues to NWT, either directly during their negotiation or through the determination process. Indeed, even at the early stage of these proceedings for the Supplementary Determination, when the parties were required to exchange their submissions for comments, PCCW-HKTC still chose not to submit this argument and divulge relevant information. To invite NWT to respond to the last minute arguments of PCCW-HKTC will only delay the matter. The IDC is not prepared to take this course lightly.

75. Most important of all, the IDC finds that the common POI arrangement agreed between [X] and PCCW-HKTC for the New Territories does not feature exchanges lying in Tuen Mun, Tin Shui Wai, Yuen Long, Sheung Shui, Fanling or Tai Po. Rather, the parties have chosen Fo Tan, Yuen Chau Kok and Kwai Shing. Fo Tan lies in or near the Shatin area. This shows that PCCW-HKTC is not only able to convey traffic to the farther parts of the New Territories through common POIs established in the Shatin and Kwai Chung areas but has actually agreed to such method of diversification with another operator on a commercial basis. In view of this benchmark reference, the IDC does not consider that there are exceptional circumstances that justify a revisit of the issues that have been determined by the TA in the First Determination.

76. Taking into account of the analysis above, the IDC has reached a final view that the location of the eight common POIs should be the notional mid-points between the following eight pairs of exchanges:

<u>NWT</u>	<u>PCCW-HKTC</u>	
Tsim Sha Tsui	Jordan	(Kowloon)
Oxford House, Quarry Bay	King's Road	(HK Island)
Kwai Chung	Kwai Shing	(NT)
New World Tower, Central	West	(HK Island)
Telford Plaza, Kowloon	Ngau Tau Kok	(Kowloon)
Discovery Park, Tsuen Wan	Tsuen Wan	(NT)
51 Tsun Yip Street, Kwun Tong	Kwun Tong	(Kowloon)
Shatin	Yuen Chau Kok	(NT)

### *Migration plan*

77. On whether the migration plan should be decided by the TA pending identification of the exact locations of the common POIs, the IDC does not find any overriding factors from PCCW-HKTC's submission which justify a departure from the IDC's considered views given in the Preliminary Analysis. The IDC maintains the conclusion that the scope of this Supplementary Determination should include the migration plan.

78. While dissenting from the migration schedule based on the time scale in the POI Capacity Determination made in 2001 (i.e. 30 calendar days plus six weeks), PCCW-HKTC proposes a migration schedule based on its practical experience of establishing self-built common POIs between the networks of PCCW-HKTC and other operators. The IDC, however, is not convinced that there is a need to adjust the migration schedule prescribed in the Preliminary Analysis in the light of the following considerations:

- (a) The First Determination has outlined a basic principle for determining the reasonable time of the migration. The principle places a focus on the expiry dates of the current leasing agreement between the parties rather than PCCW-HKTC's practice of establishing common POI with other operators. The IDC considers that the migration schedule proposed by PCCW-HKTC has failed to address the expiry dates of the T1 / E1 links under the current leasing agreement.
- (b) PCCW-HKTC elected not to indicate any migration schedule for consideration in the Preliminary Analysis while NWT made a proposal on the provisioning lead time for the self-built POI implementation at the respective exchanges. The IDC notes with caution that further exchange of the views at this late stage may potentially place a party at a disadvantage as it will protract the whole migration process.
- (c) While outlining the guidance and general principles, as well as other essential requirements, the First Determination left the

migration to the parties to negotiate. In prescribing the migration plan in the Preliminary Analysis, the IDC had regard for the fact that PCCW-HKTC had already been given ample time for preparation of the migration activities, including the arrangements to migrate the “target” customers and provisioning of the required E1 link capacity, since the issue of the First Determination on 23 April 2003.

- (d) Except for migration of the existing services using the spare margins of links leased to NWT, both parties are required to shoulder equal responsibilities in the self-built POI. The IDC also notes that NWT is prepared to bear more civil works by offering the POI at the manholes near and in front of PCCW-HKTC’s exchanges. As NWT is capable of completing the activities required for self-built POI at exchanges with existing civil ductings in four weeks, the IDC cannot see any reason why the first POI cannot be completed in a much longer time scale of six weeks plus one month<sup>17</sup>. As regards those exchanges with no civil works of interconnection, the provisioning lead-time required by NWT was six months. The migration plan prescribed by the IDC in the Preliminary Analysis allows establishment of the self-built POI at these exchanges after the completion of those with existing civil ductings. With parallel processes of the migration activities at more than one exchange, the IDC considers that all the POIs concerned can be completed within [ ] months after the Negotiation Period and six weeks of preparation stage that follows.

79. PCCW-HKTC does not subscribe to the IDC’s view on the migration rate of 63 E1s per month and contends that the practical rate should be well below this figure. In compilation of the Preliminary Analysis, the IDC did not have the PCCW-HKTC’s input but NWT’s request for a migration rate of 30 E1s/T1s per week (or about 120 E1s/T1s per month). Mindful of the expiry dates of the current POI leasing agreement and the typical transmission equipment modularity, the IDC decided that the migration should be set at a

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<sup>17</sup> The actual migration process for Phase 1 shall start six weeks from the end of the Negotiation period. With a migration rate of not less than 63 E1s per month, the first POI with a capacity of 63 E1s can be established in six weeks plus one calendar month after the Negotiation Period.

level of 63 E1s per month. The IDC does not find sufficient merit in the PCCW-HKTC's argument to justify a re-consideration of the migration rate.

80. Regarding the six weeks' period for commencement of the actual migration process for both Phase 1 migration (paragraph 49 of the Preliminary Analysis<sup>18</sup>), the IDC would like to clarify that the intention was to allow the parties the full period for preparation work before the migration shall take place. Regarding the migration for Phase 2 (paragraph 50 of the Preliminary Analysis<sup>19</sup>), the IDC would like to clarify that the actual migration process shall not begin until after completion of the Phase 1 migration.

81. Having considered PCCW-HKTC's comments on the distribution of T1 and E1 links, the IDC considers it unnecessary to make any changes to its conclusion in the Preliminary Analysis. The link distribution prescribed by the IDC strives for a balance between the divergent views of the parties and is intended to be followed in the absence of consensus.

82. In closing, the IDC would wish to highlight the importance of the provision of all relevant information, evidence and arguments by the parties to the determination proceedings to assist the TA to come up with the optimal solution. In conducting the present proceedings, the IDC gathers the impression that PCCW-HKTC has not been forthcoming in providing useful and constructive information, arguments and proposal to the IDC. As the TA can only make a determination based on the information available before him, if a party withholds relevant information, then the TA has to make a decision based on the "imperfect" information before him. The terms and conditions so determined may not necessarily be the optimal solution to the issues.

83. For this reason, the IDC does not rule out the possibility that in implementing the self-built POI arrangement, the parties may find an alternative approach more desirable than that determined by the TA. The determination made by the TA is, after all, meant only to resolve the deadlock situation so that the self-built POI arrangement can be implemented as quickly as practicable. If *both parties agree* that an alternative approach may be better, the parties may proceed on the basis of their agreement and vary the terms and conditions of the determination to that extent. The IDC however

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<sup>18</sup> See also paragraph 50 above.

<sup>19</sup> See also paragraph 51 above.

must emphasise in no uncertain terms that *any change or alteration of the terms and conditions determined by the TA on the self-built POI arrangement must be agreed by both parties*. If one party refuses to depart from the terms and conditions determined by the TA, the other party must comply with those terms and conditions, failing which the TA may take such regulatory action as necessary, including issuing direction under section 36B of the Ordinance, and impose penalty under section 36C if the direction is not complied with.

**Interconnection Determination Committee  
Office of the Telecommunications Authority  
14 May 2004**