

Review of the Regulatory Policy for Type II Interconnection

Consultation Paper

23 May 2003

INTRODUCTION

The Commerce, Industry and Technology Bureau announced in January this year as one of its major tasks for 2003 to review and consult the public on Type II interconnection arrangements, in view of the rapidly changing market landscape in telecommunications, the advent of new or improved technologies and the fact that more than seven years have passed since the implementation of narrowband interconnection. Indeed the importance of the availability or otherwise of, and the arrangements for, Type II interconnection to the telecommunications industry can hardly be overemphasised. In this context, the issue has major implications on service provision by operators, benefits to consumers, incentive to operators to invest in facilities, competitiveness of our telecommunications infrastructure, and *a fortiori*, the competitive landscape of the telecommunications industry and structure of the telecommunications market as a whole. Thus, the review on the future arrangements for Type II interconnection will have impact at all levels of public policy considerations, from the evolution of the Government's policy objectives, the shaping of the future structure and development of the industry to the regulatory regime.

BACKGROUND

2. Since 1995, the Government has progressively liberalised the fixed telecommunications facilities market. The Government develops its policy on Type II interconnection with a view to:

- promoting the telecommunications industry;
- encouraging investment in network;

- facilitating effective competition in the telecommunications market and enhancing consumer choice.

3. Type II interconnection is interconnection at the customer access network level. The rationale and underlying principle for Type II interconnection are succinctly stated in the revised statement issued by the Telecommunications Authority (TA) on “Interconnection Configurations and Basic Underlying Principles” dated 18 March 2002 (TA Statement No 6 (Revised)):

The TA agrees with the view that the local loop established by a fixed telecommunications network operator is owned by that operator. However, the TA also takes the view that if a customer connected to the end of a local loop could exercise free choice not to continue with the local access service supplied by the operator owning the local loop, the piece of wire and the associated facilities constituting the local loop would immediately become idle. In the Hong Kong environment, it might be difficult for the new entrant network operators to establish an alternative local loop to serve this customer. Many buildings have bottlenecks and it may, in fact, be impractical to install a second local loop. Clearly it would compound the difficulties if existing wiring was pulled out and withdrawn from service simply to enable a new wire to be laid. In addition, the construction of additional parallel local loops to serve the same customer amounts to wasteful duplication and may cause disruption and inconvenience to a number of end customers. The TA therefore considers it desirable for interconnection to be permitted at local loop level but subject to the proviso that such interconnection will only be permitted at the request of the customer being connected to the local loop concerned. The customer request may be expressed directly to the network operator from which the customer chooses to take service and the form of the customer request will be approved by the TA. The owner of the local loop will be compensated by an interconnecting network operator for the reasonable relevant cost incurred in interconnecting that network operator to its local loop. (Paragraph 6)

4. Competition was introduced into the local fixed network market as from July 1995 (with the licensing of three new fixed telecommunications network services (FTNS) operators), which was also the date when Type II interconnection was implemented for narrowband services. Subsequently, Type II interconnection was extended to broadband services as announced by the TA Statement entitled “Broadband Interconnection” issued on 14 November 2000.

5. After more than seven years of the implementation of Type II interconnection policy, the new FTNS operators are increasingly gaining prominence in the local market. They are providing narrowband services via their own networks as well as Type II interconnection. It is clear that the market structure now is very different from what it was seven years ago, when there was a monopoly in fixed telecommunications services. The Government considers that the time is appropriate to conduct an overall review of the entire Type II interconnection policy, to see whether the policy remains relevant and necessary to facilitate effective competition and promote investment incentives in the telecommunications facilities market. In this Consultation Paper, we will set out the issues relevant to the review and invite comments from all interested parties on these issues.

CURRENT MARKET CONDITIONS AND REGULATORY FRAMEWORK

6. To put the review in proper context, we will first give an overview of the current market conditions and briefly describe the current Type II interconnection regulatory framework and its implementation.

Current Market Conditions

7. In the following paragraphs, we will review the current market conditions in terms of network rollout, market share and the availability of alternative choices.

Network rollout

8. In May 1999, the Government extended to 31 December 2002 the moratorium on the issue of further local FTNS licences for the construction of new fixed wireline-based networks, subject to satisfactory commitments from the three new FTNS licensees, namely Hutchison Global Communications Limited (HGC), Wharf T&T Limited (Wharf T&T) and New World Telecommunications Limited (NWT) on further network roll-out during the moratorium¹. Their commitments specified the numbers of buildings that would be served by self-built networks, and the PCCW-HKT Telephone Limited (PCCW-HKTC)'s exchanges that would be co-located for Type II interconnection by the end of December 2002². The overall effect of their commitments in terms of service coverage would be that:

- (a) it was estimated that over 50% of the residential customers would have the choice of an alternative service provided by one of the three FTNS licensees; and
- (b) the three FTNS licensees' service coverage would be extended to many parts of Hong Kong including the New Territories.

We have completed the checking of the network rollout commitments by the three operators and are satisfied that the commitments are all fulfilled.

9. In January 2000, Hong Kong Cable Television Limited (HKCTV) was issued an FTNS licence to provide telecommunications services using cable modem technology over its hybrid fibre coaxial cable network. HKCTV's telecommunications network has since been rolled out quickly. Its cable modem service has already achieved over 80% home passed. At present, the telecommunications services provided by HKCTV are broadband Internet access services, but the technology has the capability of providing narrowband telephony services in due course.

¹ For the background of the extension of the moratorium, see "Legislative Council Brief – 1998 Review of Fixed Telecommunications – Moratorium on the Issue of Further Local Fixed Telecommunications Network Services Licences and Licensing of Additional External Facilities-Based Operators" dated 4 May 1999: www.ofta.gov.hk.

² For details of the commitments, see "Legislative Council Brief – 1998 Review of Fixed Telecommunications – Progress Report on the Moratorium on the Issue of Further Local Fixed Telecommunications Network Services Licences" dated 10 September 1999: www.ofta.gov.hk.

10. In early 2000, the TA also issued a number of local wireless FTNS licences to enable operators to provide fixed services making use of wireless technology. Of these local wireless FTNS licensees, Hong Kong Broadband Network Limited (HKBN) is the most active and has achieved construction of a network that covers over 3 000 buildings. Before the end of 2002, HKBN did not have any right to operate wireline-based facilities across unleased land and public streets. The network of HKBN therefore consisted of in-building wiring systems owned by HKBN connected to HKBN switches through wireless means or leased circuits supplied by wireline-based FTNS operators. From January 2003 onwards, HKBN has been granted the right to install wireline-based facilities and is therefore expected to provide fibre connections to the in-building wiring systems already installed.

Market share

11. The following tables show the market share of the operators³ in the narrowband and broadband markets:

*Table 1
Narrowband Market (as at end of December 2002)*

	No. of lines connected via Type II interconnection	No. of lines connected via self-built network	Total no. of lines	Market share
HGC	329 006	375 724	704 730	18.3%
HKBN				
NWT				
Wharf T&T				
PCCW-HKTC	0	3 137 017	3 137 017	81.7%
Total	329 006	3 512 741	3 841 747	100%

³ The data relating to the new entrants are shown in aggregate format.

Table 2
Broadband Market (as at end of December 2002)

	LMDS and leased circuits	xDSL	FTTB	HFC	Total no. of lines	Market share
HGC	-	-	√	-	452 342	44.7%
HKBN	√	-	-	-		
HKCTV	-	-	-	√		
NWT	-	√	-	-		
Wharf T&T	-	√	√	-		
Others	-	√	-	-		
PCCW-HKTC	-	√	√	-	559 422	55.3%
Total	>100 000	473 697	155 539	>200 000	1 011 764	100%

12. In respect of the narrowband market (Table 1), of the 704 730 lines served by the new entrants, more than 320 000 lines (representing 8.6% of total number of lines in service) were connected via Type II interconnection and more than 370 000 lines (representing 9.8% of total number of lines in service) via their self-built networks. According to the data of individual operators, the lines served by Wharf T&T and NWT via Type II are more than those served by their self-built networks. On the other hand, HGC has more lines served by its self-built network than by Type II interconnection. As for HKBN, the services are entirely provided via its own network (including leased circuits) as it is not entitled to Type II interconnection⁴.

13. For the broadband market, the unbundling of local loops for broadband Type II interconnection is still at the initial stage, with only insignificant number of lines connected so far. The market share of the new entrants (as shown in Table 2) is basically achieved through self-built networks. The breakdown of the means or technology through which broadband services are provided is given in the table.

⁴ See paragraph 19 below.

Availability of alternative choices

14. For narrowband services, with HGC, Wharf T&T and NWT having fulfilled their roll-out commitments⁵, over 50% of the residential customers already have the choice of service alternative to that of PCCW-HKTC. If the network of HKBN is also taken into account, even more consumers are able to enjoy alternative choices⁶. As for broadband services, HKCTV's network has achieved over 80% home passed. HGC and HKBN have also developed sizable self-built networks which are able to offer alternative choices to broadband users. Indeed Table 2 in paragraph 11 shows that the new entrants combined have gained almost 45% of the share in the broadband market.

15. We would review the policy and regulatory framework for Type II interconnection in the context of changing competition landscape as well as investment environment. After the burst of the "Internet bubble", and given the uncertainty in the global economy, investors' sentiment has shifted in favour of conservative investments. The review should take account of the prevailing investment environment in order to encourage investment in telecommunications infrastructure, which in turn will promote the industry as a whole.

Current Regulatory Framework

16. When the market was first liberalised in 1995, the TA considered that Type II interconnection was the best way to allow new entrants to provide alternative choices to the customers before their network reached the customers, or where it would not be commercially viable for alternative networks to reach those customers for a long time. There was also the consideration of avoiding wasteful duplication of copper-based networks. With the emergence of broadband in late 90s, the Type II interconnection framework was extended to cover broadband services. The current regulatory framework for Type II interconnection can broadly be described as follows:

- The regulation of narrowband and broadband Type II interconnection is separate. Narrowband Type II interconnection

⁵ See paragraph 8 above.

⁶ HKCTV is not providing narrowband telephone services. See paragraph 9.

is governed by a series of statements issued by the TA on “Interconnection and Related Competition Issues”, last revised on 18 March 2002. Broadband Type II interconnection is governed by the TA statement on “Broadband Interconnection” dated 14 November 2000.

- Broadly speaking, three types of customer access networks are open to Type II interconnection under the existing policy:
 - (a) Copper-based local loops between telephone exchange buildings and customer premises;
 - (b) Coaxial cable portion (also copper-based) of hybrid fibre coaxial cable systems;
 - (c) In-building wiring systems (blockwiring systems and coaxial cable distribution systems).
- For both narrowband and broadband Type II interconnection, Type II interconnection is not applied to optical fibres in customer access networks for the time being.
- For both narrowband and broadband Type II interconnection, the principle of “long run average incremental costs” (LRAIC), including a reasonable cost of capital commensurate with investment risk, is the starting point for constructing the pricing models. The TA considers that the LRAIC standard is suitable for a market environment where the new market entrants are still establishing their foothold in the industry. The LRAIC-based interconnection charges would fairly and adequately compensate the party providing interconnection while providing an economically efficient “build versus buy” signal.

We take the view that provision of Type II interconnection is part of the obligations to provide interconnection to other networks of FTNS operators promptly and efficiently under their licences.

17. At present, the following four wireline-based FTNS operators have the obligation to make available their copper-based local loops for Type II interconnection to each other:

- the incumbent operator, PCCW-HKTC and
- the three FTNS operators who entered into the market in 1995, namely HGC, Wharf T&T and NWT.

18. Given that the wireline-based local fixed networks of these new entrants are mainly based on fibre-to-the-building configurations and there are hardly any local loops (except copper blockwirings in individual buildings) for the other FTNS operators to interconnect to at their local exchanges, Type II interconnection to copper-based local loops is, in reality, invariably provided by PCCW-HKTC to the new entrants. However, the operators have commercial agreements to provide one another with Type II interconnection to in-building wiring systems owned and operated by them in individual buildings.

19. On the other hand, the following categories of local FTNS operators are not entitled as of right to obtain Type II interconnection in the form of co-location of facilities at other operators' telephone exchanges and access to the copper-based local loops, except in bottleneck situations:

- local wireless FTNS licensees, whose licences were issued in 2000
- HKCTV, who was issued an FTNS licence for telecommunications services based on the cable modem technology in 2000
- local fixed carrier licensees with their licences issued on or after 1 January 2003.

However, these operators have the right and obligation to other forms of Type II interconnection, e.g. in-building wiring systems in individual buildings.

MATTERS FOR REVIEW

20. This review is the first comprehensive review of the Type II

interconnection regulatory policy since the local FTNS market opened up in 1995. The review will cover all aspects of the Type II regulatory framework and examine in detail whether all or any of these aspects of the framework should remain, or whether any changes are needed to best achieve the policy objectives. To achieve the policy objectives of **promoting a market environment conducive to investment in network and facilitating effective facilities-based competition**, we will examine the following issues in detail:

- (a) whether Type II interconnection policy remains relevant and applicable in updated circumstances (paragraphs 24 to 29);
- (b) qualifying conditions for Type II interconnection (paragraphs 30 to 32);
- (c) points of interconnection (paragraph 33);
- (d) extension of interconnection to fibre networks (paragraph 34 to 38);
- (e) narrowband and broadband services (paragraph 39); and
- (f) time at which the local loops were installed (paragraphs 40 to 41).

21. In addition, we will also review the Type II regulatory framework with respect to

- (a) consideration of PCCW-HKTC's plan or need to upgrade its predominantly copper-based customer access network to fibre-based customer access network (paragraphs 42 to 45);
- (b) issues relating to gaining access to in-building telecommunications systems (paragraphs 46 to 52); and
- (c) other considerations, such as whether there is a need to devise a regulatory policy specifically catered for certain types of consumers or end-users (paragraphs 53 to 57).

22. An indispensable part of the Type II review is a review of the charging principles. Instead of making Type II interconnection or any aspect of it available or unavailable based on various considerations, we may also consider applying different methodologies in the calculation of interconnection charges, so that the level of interconnection charges would send the pricing signals most appropriate to the prevailing conditions to the operators seeking interconnection. Hence a revision of the basic charging principles may be considered as an alternative to the discontinuation of all or any part of the Type II interconnection obligation⁷. If this is considered to be an alternative, the review will set the general direction of the applicable charging principles.

23. The Government does not have any pre-conceived views as to whether, and if so in what way the existing framework should continue or be changed. All relevant issues will be discussed in this Consultation Paper in an open manner. Comments are invited from all interested parties to express their views on the issues.

Promoting Investment and Effective Competition

24. Under the existing framework, PCCW-HKTC, HGC, Wharf T&T and NWT have obligation to provide Type II interconnection to each other, and they are also entitled to request for Type II interconnection as of right, provided that there are customer requests. Whether to use Type II interconnection is a commercial decision of the operator seeking access to the potential customers. Interconnection charges are used to provide the correct pricing signals to the operators in making the “build-or-buy” decisions. There are no conditions similar to, say, the “impairment” or “necessity” concept in the US Telecommunications Act of 1996⁸, or “essential facilities” and “near essential

⁷ See for example the European Union’s regulatory framework. Unbundled access to the local loop is provided for in the EC Regulation No 2887/2000: http://europa.eu.int/smartapi/cgi/sga_doc?smartapi!celexapi!prod!CELEXnumdoc&lg=EN&numdoc=32000R2887&model=guichett. The regulation came into force on 2 January 2001 and requires incumbent operators to provide competitors with full and shared unbundled access to their copper loops “under transparent, fair and non-discriminatory conditions”. Operators must publish a reference offer for unbundled access to the local loop, including charges. The charges should be set on the basis of cost-orientation. National regulatory authorities are given the power to impose changes on the reference offer, including prices, where such charges are offered. However, where a national regulatory authority determines that the local access market is sufficiently competitive, it shall relieve the incumbent operators of the obligation for prices to be set on the basis of cost-orientation, although the obligation to provide unbundled access remains.

⁸ In the US, the requirement for unbundled network element (UNEs) is provided for under the

facilities” concepts in the Canadian regulatory regime⁹, that qualify the right of entitlement to the unbundling of local loops

25. The market has now opened up for seven years. Some new FTNS operators have actively engaged in rolling out their networks using different technologies to directly access the buildings and individual flats. Table 1 in paragraph 11 shows that the number of lines (narrowband services) which are served directly by self-built networks of the new FTNS operators exceeds those served via Type II interconnection. For broadband services, the new operators have obtained almost 45% of the market share. This is achieved without reliance, or with reliance to a negligible extent, on Type II interconnection. **We consider that it is necessary to review whether the Type II interconnection policy remains relevant and applicable to promote investment in telecommunications infrastructure and effective competition.**

26. One argument is that Type II interconnection has served its role in promoting effective competition. The market is now sufficiently competitive with various end-to-end networks overlapping each other in most part of Hong Kong. These networks are still expanding. Type II interconnection, which is considered to be a measure to promote competition in the early stage of liberalisation to enable new entrants to establish a foothold in the industry, should therefore be phased out.

Telecommunications Act 1996. Section 251(d)(2) of the Act provides that “In determining what network elements should be made available for purposes of [access], the Commission shall consider, at a minimum, whether – (A) access to such network elements as are proprietary in nature is *necessary*; and (B) the failure to provide access to such network elements would *impair* the ability of the telecommunications carrier seeking access to provide the services that it seeks to offer.” (Emphasis added) In February 2003, the FCC completed its review on the UNE policies based on the necessity and impairment concepts pursuant to section 251(d)(2). The announcement of the review was made on 20 February 2003: http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-231344A1.doc (press release), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-231344A2.doc (attachments to the press release)

⁹ In a decision in May 1997, the Canadian Radio-television and Telecommunications Commission (CRTC) mandated the unbundling of certain incumbent local exchange carriers’ (ILECs) service and facility components that were considered as “**essential facilities**”. The criteria for deciding whether a facility is essential are whether (1) it is monopoly controlled; (2) a competitive local carrier (CLEC) requires it as an input to provide services; and (3) a CLEC cannot duplicate it economically or technically. In the same decision, the CRTC also mandated that certain facilities, functions or services which did not meet the definition of an essential facility, but for which the competitive supply is very limited (**near-essential facility**), also be unbundled for a period of five years. (Telecom Decision CRTC 97-8: <http://www.crtc.gc.ca/archive/ENG/Decisions/1997/DT97-8.htm>) By an order in March 2001, the CRTC extended the sunset period for near-essential facilities, without specifying a termination date, until such time as the market for such facilities is sufficiently competitive. (Order CTEC 2001-184: <http://www.crtc.gc.ca/archive/eng/Orders/2001/O2001-184.htm>)

27. Caution has to be exercised on this argument however, as the competition in the market today is not only achieved by services provided through end-to-end networks. As can be seen from Table 1, 46.7% of the narrowband services provided by the new FTNS operators (or more than 320 000 lines out of 704 730 lines they serve) was provided via Type II interconnection. A substantial part of the “50% coverage” of residential customers by the new FTNS operators, representing the availability of alternative choice to residential customers in narrowband services, is also achieved through Type II interconnection. If the services and coverage provided through Type II interconnection are discounted, the market share and coverage achieved by the new FTNS operators will be lower. The argument that the market is “sufficiently competitive”, in the sense that the competition comes from end-to-end alternative networks, will become weaker.

28. Further, the bottleneck issue continues to exist in some cases. Freedom may not exist for the operators to choose between rolling out their networks to directly access the customers and relying on local loops. For example, many buildings have bottlenecks caused by limitation in space for cable risers and equipment rooms, and it may be impractical for a second operator to install a second local loop between the telephone exchanges and the buildings¹⁰. Type II interconnection provides a real solution to resolve the bottleneck situations.

29. We will not draw any preliminary views as to how these considerations may play a role in determining whether the existing Type II interconnection should continue or be changed. We welcome interested parties to submit their comments, with relevant market and company records, data, statistics, and economic analysis in support. Information and data such as (but not limited to) operators’ up-to-date network coverage (in terms of number of buildings and areas covered by way of self-built networks or through Type II interconnection), level of investment and investment return (in terms of self-built networks and services provided via Type II interconnection) etc will be most relevant for our assessment.

¹⁰ Access to in-building telecommunications systems, including blockwiring facilities installed by FTNS operators, is separately discussed in paragraphs 46 – 52.

Qualifying conditions for Type II interconnection

30. Where the existing Type II interconnection framework is found to be not appropriate to promote investment and competition in today's market conditions, consideration may be given to the introduction of some form of criteria to qualify the Type II interconnection obligation, so that its application is limited to certain circumstances that are justifiable. We consider that the following concepts are worth discussion:

- (a) the “bottleneck facilities” concept as given in the sharing of facilities under section 36AA of the Telecommunications Ordinance. Indeed at present, all local FTNS operators may ask for Type II interconnection if the facilities in question constitute bottleneck facilities;
- (b) the “alternative facilities” concept – whether the new local FTNS licensees have any alternatives other than through Type II interconnection to access the customers. In determining whether alternatives are available, considerations have to be given to whether there are any physical or technical limitations in providing the alternatives (such as road opening) and whether these alternatives are economically feasible.
- (c) the “essential facilities” concept – reference can be made to the definition provided in the Basic Telecommunications Reference Paper to which Hong Kong has committed in the WTO¹¹. “Essential facilities” is defined in the Reference Paper as

facilities of a public telecommunications transport network or service that (a) are exclusively or predominantly provided by a single or limited number of suppliers; and (b) cannot feasibly be economically or technically substituted in order to provide a service.

“Essential facilities” is also a doctrine found in the general competition law, which basically says that access to the facilities

¹¹ For Hong Kong's commitments in the WTO in the telecommunications service sector please access via: http://www.wto.org/english/tratop_e/serv_e/telecom_e/telecom_commit_exempt_list_e.htm.

will be granted when it is not possible for another undertaking to duplicate the facility in question, due to physical, legal or economic impossibility. Consideration should also be made to whether the facility is indispensable to the competitors¹².

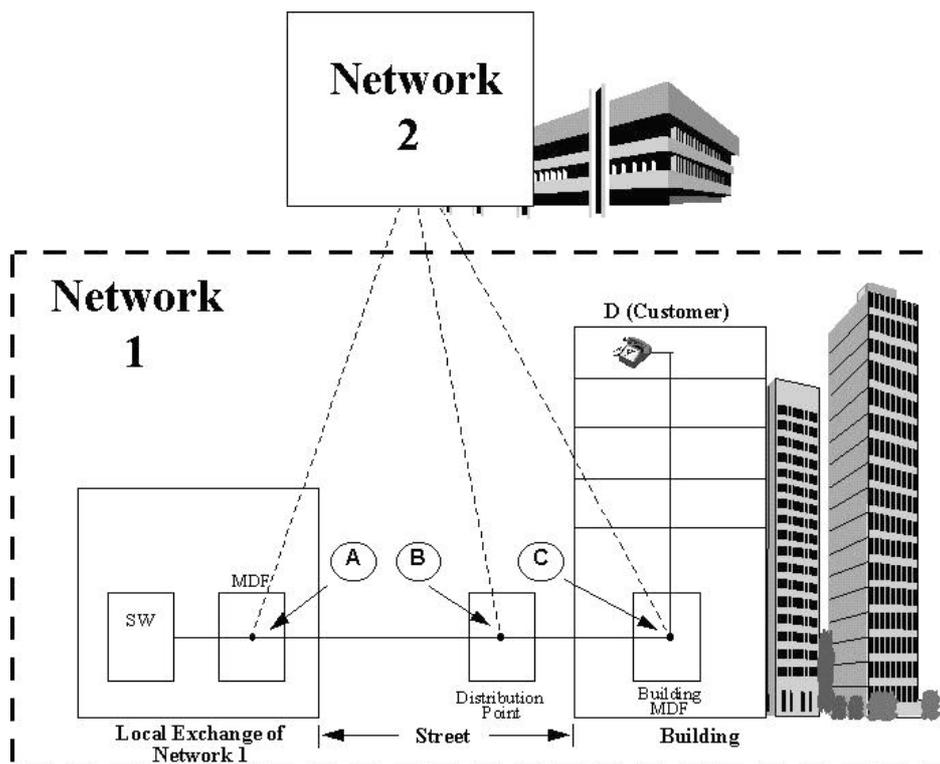
31. We recognise that the considerations applied in these concepts may differ or overlap. We would like to invite interested parties to express their views on the appropriate tests. When commenting on the existence of physical or technical limitations in providing the alternatives, the economic feasibility of these alternatives, or the physical, legal or economic impossibility to duplicate the facility, the parties are requested to submit relevant market and company records, data and statistics and economic analysis to justify their arguments.

32. If the use of criteria is to be the approach, we consider that the criteria should be applied at different levels or aspects of Type II interconnection, such as the points of interconnection (interconnection to networks outside buildings, interconnection to in-building systems), the types of technology (copper-based, fibre-based, wireless based, etc), the nature of services (broadband / narrowband), time at which the local loops were installed etc. These levels or aspects will be discussed in this Paper. After assessing different levels or aspects of the market, we will decide whether Type II interconnection framework will remain or be subject to change in respect of these levels or aspects. It is not our intention to conduct vetting process on a case-by-case basis, as this will be impracticable and only delay the process of Type II interconnection where it is justified.

Points of interconnection

33. According to Revised TA Statement No 6, Type II interconnection is possible at any one of the three points indicated in the following diagram:

¹² Richard Whish *Competition Law* (Butterworths, 2001) p 621.



If some pre-conditions (be they be based on the bottleneck, alternative or essential facilities concept) are to be applied to determine whether an obligation exists, it is necessary to consider whether each of the three interconnection points will be able to meet the pre-conditions. The case in relation to Point C (interconnection at the MDF within a building) is probably less controversial that it should remain open for interconnection given that bottleneck is most likely to occur at that point¹³. In relation to interconnection at Point A (MDF within an exchange) and Point B (distribution point), there are arguments in favour of and against maintaining the interconnection obligation, in terms of its effect on the promotion of investment and effective competition. We will not draw any conclusions at this stage and will invite interested parties to express their views.

Extension of interconnection to fibre networks

34. The review will not only focus on the issues relating to the continued obligation to unbundle copper-based local loops. At present, Type II interconnection does not cover the fibre networks of any of the local FTNS operators. In the TA Statement on Broadband Interconnection in November

¹³ More discussions on interconnection with in-building telecommunications systems are made in paragraphs 46 – 52.

2000, it was stated that the decisions made under that statement were confined to Type II interconnection over copper medium only, for the reason that

... the households in Hong Kong are mainly connected by copper local loops and hence the TA considers that the availability of Type II interconnection to the local loops based on the copper medium is sufficient to cater for the immediate need of the broadband market. (paragraph 3.2.31 of the TA Statement on Broadband Interconnection).

However, the TA did mention in the statement that as the coverage of fibre-to-the-building (FTTB) increased to a significant percentage, the TA might re-visit this issue.

35. More than two years have elapsed since the broadband statement. According to the data in hand, as at December 2002, the broadband services provided via FTTB of all local FTNS network operators combined made up about 15.4% of the total broadband market¹⁴. So far there is no fibre to the home (FTTH) yet. But it is still fair to say that fibre networks are acquiring significance in providing alternative technologies to serve the customers direct. We consider that a review on Type II interconnection regulatory policy will not be complete without looking at networks offered by alternative technologies.

36. When “fibre networks”, FTTB or FTTH is mentioned in the context of Type II interconnection, the focus is on the section of fibres or fibre-based transmission channels over the customer access networks from a telephone exchange up to the individual flats of a building or home of a customer. Several possible connection scenarios exist:

- (a) FTTH for the whole path;
- (b) FTTB and then copper loops for the blockwiring; and
- (c) fibre to point B in the diagram in paragraph 33 and copper loops to point C in the diagram and also copper loops for blockwiring.

The issue is whether this section of fibres / fibre-based transmission channels or any portion of it should be opened up for Type II interconnection, and if so under what circumstances and for what purposes.

¹⁴ See Table 2 in paragraph 11.

37. The argument against Type II interconnection to fibre-based customer access networks is that operators should be encouraged to develop their infrastructure using advanced technology such as fibre. One may argue that requiring the operators to provide Type II interconnection to their fibre networks may discourage their incentives to invest in new fibre networks¹⁵. On the other hand, the considerations of resolving bottleneck situations will also be relevant. All these considerations must be balanced to work out a framework that will be most effective to continue to promote effective competition in the market.

38. We have identified the following questions relevant to Type II interconnection over fibre medium:

- (a) Should Type II interconnection be extended to cover fibres or fibre-based transmission channels over the customer access networks?
- (b) If so, should any qualifying conditions (eg by applying the bottleneck / lack of alternatives / essential facilities concept) be imposed before the obligation arises?
- (c) Who should have the right to demand for and who should have the obligation to provide interconnection?
- (d) If fibres or fibre-based transmission channels over the customer access networks are to be covered by Type II interconnection, which part or which kind of fibres is to be covered? For example:
 - the entire portion of fibres or fibre-based transmission channels between a telephone exchange and a customer access point - customer premises in case of FTTH and/or interface with copper-based blockwiring in case of FTTB,

¹⁵ See for example the new rules adopted by the FCC on 20 February 2003 after completion of its review. The FCC requires, inter alia, no unbundling of fiber-to-the-home loops for both broadband and narrowband services: : http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-231344A1.doc (press release), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-231344A2.doc (attachments to the press release).

and if so, for narrowband and/or broadband services;

- the portion between the exchange and local distribution point interface with copper-based blockwiring and for voice services only;
- dark fibres or fibre-based transmission channels at Synchronous Transport Module (STM) or lower level for narrowband and/or broadband services.

Narrowband and broadband services

39. Different considerations may apply depending on whether the local loop is used for providing narrowband or broadband services. The narrowband network of PCCW-HKTC is a legacy network from the monopoly years. To deploy the legacy copper-wires for broadband services, PCCW-HKTC may have incurred extra investment to upgrade the network, e.g replacement with Category 5 wiring. We would consider whether this should form a relevant consideration in deciding whether broadband Type II interconnection should continue to be mandated in the future. One side of the argument is that to mandate PCCW-HKTC to open its upgraded network for Type II interconnection may discourage PCCW-HKTC's incentive to continue investment to upgrade its network. On the other hand, it may be argued that PCCW-HKTC is already fully compensated by the interconnection charge and hence the obligation should continue. Another issue is that the economics to justify investment in alternative customer access networks may well differ for narrowband and broadband services, as is evidenced by the coverage of alternative customer access networks for broadband services.

Time at which the local loops were installed

40. We also consider that it is worthwhile to explore whether different considerations should be given to the "age" of the local loops. In respect of the legacy part of PCCW-HKTC's network, the investment cost must have long recovered and its equipment fully depreciated. It is probably not a valid argument that mandatory obligation of interconnection will discourage incentive to invest in its "old" network. Rather, PCCW-HKTC's cost in providing interconnection will be fully compensated through the

interconnection charge. On the other hand, PCCW-HKTC may decide to improve its “old” network, either by replacing the old copper loops with new ones, or undertaking an upgrading process on a larger scale by replacing the copper loops with fibre ones. For the “improved” or “newer” part of the network, there may be an argument that Type II interconnection may discourage its incentive to improve or upgrade its network. We would like to explore whether this should form a relevant consideration in determining the interconnection obligation, and if so, how this should be applied, especially in deciding the “cut-off date” from which the obligation differs.

41. We would like to invite comments on the issues raised in paragraphs 24 – 40 in relation to Type II interconnection from the aspects of points of interconnection, technologies, nature of services, and time of installation. In particular, we would welcome comments on

- **the appropriateness of applying some qualifying conditions (bottleneck / alternatives / essential facilities concept) to determine whether the obligation should arise**
- **who should have the right to ask for interconnection**
- **who should have the obligation to provide interconnection.**

Interested parties are requested to provide relevant market and company records, data, statistics, and economic analysis to support their views.

Upgrade of PCCW-HKTC’s Network

42. As discussed in paragraph 18 above, although the current obligation of unbundling copper-based local loops is imposed on four local FTNS operators, in reality, only PCCW-HKTC is providing unbundling of copper-based local loops between telephone exchanges and customer premises, as the other three operators’ networks are basically fibred-based and do not have copper local loops for unbundling purpose.

43. Although optical fibres are used extensively in the trunk network, the existing customer access network of PCCW-HKTC is predominantly a copper-based legacy network, constructed during the era of monopoly. The network is ubiquitous in nature. On the other hand, as it is copper-based it is an “old”

network in the sense that modern customer access networks are mostly fibre-based, which incur fewer resources (eg smaller and fewer exchange buildings) but offer much higher capacity. We consider that in reviewing the Type II interconnection policy, it is necessary to take into account the possibility that PCCW-HKTC may wish to upgrade its copper-based customer access network to a fibre-based one. From the point of view of encouraging the development of advanced telecommunications infrastructure, this move should be welcome. On the other hand, the upgrading of PCCW-HKTC's network may open up a number of issues in respect of Type II interconnection. We have identified the following issues:

- (a) If PCCW-HKTC decides to upgrade its exchanges which have been co-located, ie there are new local FTNS operators already providing services to end customers via PCCW-HKTC's local loops in those exchanges, should PCCW-HKTC be permitted to retire the copper local loops?
- (b) If PCCW-HKTC decides to upgrade the customer access network to a particular building with optical fibres, should PCCW-HKTC be permitted to retire the copper local loops to that building?
- (c) If PCCW-HKTC is permitted to retire the local loops, what should be the arrangement for the new local FTNS operators who have already co-located and are providing services to end-customers making use of PCCW-HKTC's local loops? For example, would the employment of a cut-off date be viable to determine which local loops may or may not retire? Will a phasing out plan be necessary?
- (d) Will there be less concern if PCCW-HKTC intends to only upgrade those exchanges that are not co-located or are not planned for co-location?
- (e) Should the retirement of copper local loops be permitted only in certain areas or districts?

44. As at the end of December 2002, the total number of PCCW-HKTC's exchanges which have been co-located by HGC, Wharf T&T and NWT was 31,

with 329 006 local access links (LAL) in operation. We are aware that there are more exchanges being planned for co-location. Given the vast amount of LALs in function, the retirement of copper local loops for upgrading purpose is more than simply a practical issue which affects the implementation of Type II interconnection. The issue may indeed affect the very framework of Type II interconnection.

45. We would like to invite interested parties to comment on the issues raised in paragraph 43 and any other relevant issues. Any proposals from the parties on how the issues can be tackled are also welcome. When providing their comments or proposals, interested parties are requested to supply all relevant market and company records, data, statistics, and economic analysis in support of their arguments.

In-building Telecommunications Systems

46. The Government encourages the development of intelligent buildings in Hong Kong to facilitate expansion of broadband coverage within individual buildings. The TA created the Class Licence for In-Building Telecommunications Systems (Class Licence) in October 2002 to enable property owners to install their own in-building telecommunications systems within the common parts of the buildings. Based on the technology neutral approach, the Class Licence does not restrict the type of in-building telecommunications systems to be installed. The system can be typical blockwiring system using copper wires, fibre-based, or wireless in nature. The TA recognises that the space available in the buildings in Hong Kong is usually limited. In-building telecommunications systems potentially constitute bottleneck facilities. Hence, the Class Licence provides that the system shall be opened up to all public telecommunications network and services licensees for interconnection on a non-discriminatory basis.

47. The in-building parts of the local FTNS networks are no different in nature from the in-building telecommunications systems under the Class Licence. Although the local FTNS licensees generally have the right to enter buildings to roll-out their own in-building telecommunications systems¹⁶, it is

¹⁶ PCCW-HKTC, HGC, Wharf T&T, NWT and HKCTV have unrestricted right of access to the common parts of buildings under section 14 of the Telecommunications Ordinance. Access by

highly unlikely that the demand of all licensed FTNS operators to roll out networks within buildings can be accommodated given the limited space in the common parts available within buildings. Further, from the angle of effective deployment of resources, it is not economically sensible to install multiple in-building telecommunications systems to provide services to a limited number of users. In view of these considerations, we consider that Type II interconnection to the in-building telecommunications systems of local FTNS networks (ie Point C in the diagram in paragraph 33) merits a review separate from the other levels / aspects of interconnection.

Blockwiring Systems

48. We are aware that the local FTNS operators have generally entered into reciprocal arrangements with each other to lease copper wires of blockwiring systems installed by the other operator. There does not appear to be any strong opinion from any of the operators that the existing system is not functioning well. **We will nonetheless like to invite comments from interested parties on whether the interconnection obligation should continue or be changed, or whether some qualifying conditions (as discussed in paragraph 30) should be applied to determine whether and with regard to which operators the obligation should continue.**

Fibre-based In-building Telecommunications Systems

49. At present, in-building telecommunications systems regulated under the Class Licence is subject to interconnection requirement irrespective of the technology (i.e. whether copper or fibre-based) used. This is necessary in order to avoid the in-building telecommunications systems restricting the access to residents or occupiers inside the building. Because of the Broadband Statement in November 2000, the interconnection obligation is not extended to cover fibre-based in-building telecommunications systems established by local FTNS operators, although there is nothing to preclude FTNS operators from reaching commercial agreement to provide each other with access. **We would like to invite comments on whether the obligation should be extended to cover fibre-based systems inside buildings, or whether qualifying conditions should be applied to determine whether and**

wireless FTNS operators and operators who are granted fixed carrier licences for operation of local FTNS services after 1 January 2003 will be granted by the TA on a case-by-case basis.

with regard to which operators the obligation should arise.

In-building Coaxial Cable Distribution and Other Systems

50. On 1 June 1993 HKCTV was issued a cable television licence. The licence is deemed to be a telecommunications licence for the carriage of the television services of HKCTV under the Telecommunications Ordinance. On 18 January 2000, HKCTV was also issued an FTNS licence to allow it to provide FTNS services using its hybrid fibre coaxial cable network. Under the licences, HKCTV has the obligation to provide interconnection of the coaxial cable portion of its network to other operators. This is also a form of Type II interconnection. In the TA Statement on Broadband Interconnection in 2000, the TA confirmed that Type II interconnection covered interconnection to the in-building coaxial cable distribution systems (IBCCDS). In that statement, the TA also considered that IBCCDS generally (ie not limited to those of HKCTV and including satellite master antenna television (SMATV) systems) were bottlenecks and Type II interconnection should be mandated. A number of determinations under section 36A of the Telecommunications Ordinance have been made which cover the point of connection at the rooftop sites for satellite signals.

51. The existing IBCCDS of the network of HKCTV, SMATV systems, communal antenna broadcast distribution systems and in-building telecommunications systems under the Class Licence inside individual buildings are in general interconnected so that all the telecommunications and broadcasting signals can go into the individual premises. This is necessary because there is only one horizontal lead in coaxial cable entering one premises. If there is no interconnection the residents of the premises will not be able to receive all the telecommunications and broadcasting signals provided by different service providers and hence the choice of services will be limited. This interconnection at any part of the in-building coaxial cable distribution system is a form of Type II interconnection. If the concerned parties cannot reach agreement on the interconnection, any of them may seek TA's determination according to section 36A of the Telecommunications Ordinance. At present, the use of the frequency channels in the coaxial cable is regulated in accordance with the Frequency Layout Plan of In-building Coaxial Cable Distribution Systems - Statement of Telecommunications Authority issued on 15 July 1999. So far, six determinations have been made by the TA under

section 36A on the interconnection with SMATV systems. The charges for interconnection were based on full recovery of the relevant cost incurred.

52. Comments are invited on whether this practice of Type II interconnection to coaxial cable distribution systems and the charging principles should continue, whether there are alternative technologies or arrangements available to replace this practice, and whether and if so how the tests of bottleneck, alternative or essential facilities should fit in.

Other Considerations

53. In devising a regulatory policy for Type II interconnection, it is necessary to consider also the impact that the policy may generate. The roll out of telecommunications infrastructure involves substantial investment. It is therefore not surprising to see that new entrants will generally target their business on markets that involve relatively lesser investment but generate higher returns. New FTNS operators indeed tend to roll out their networks in the business districts and urban districts with dense population. The cost of road works is understandably lower due to the compactness of these districts, whereas the users' demands for various types of services are higher. If the Type II interconnection policy makes no special adjustments, certain categories of consumers may have to wait for a long time before alternative choices of services are available. We would therefore like to explore whether there is a need to devise a regulatory policy that is conducive to attracting the new operators to roll out their networks in less popular areas. We have identified some areas for discussion in the following paragraphs.

Urban and Rural Areas

54. Whilst physical constraints (eg bottleneck) may characterise the difficulties faced by the new entrants in rolling out end-to-end networks in the urban areas, economic constraints may be a more acute problem in the rural areas. The data collected by OFTA show that the network roll-out of the new FTNS operators by Type II interconnection is more mature in the urban than rural areas. As at the end of December 2002, the total number of urban exchanges¹⁷ co-located by HGC, Wharf T&T and NWT was 27, with 327 301

¹⁷ The classification of whether the exchanges are rural or urban is made by PCCW-HKTC.

working LALs. This is to compare with 4 rural exchanges¹⁸ being co-located, with only 1 705 working LALs. For buildings with direct access, it is estimated that HKBN and HGC combined have over 5 000 buildings in the urban area, compared with no more than 100 buildings in the rural districts.

55. We would like to know in the first place whether and if so in what way the new FTNS operators encounter more difficulties in rolling out their networks (by self-built networks and Type II interconnection) in the rural areas. We would further invite comments on

- **whether different regulatory treatment should be given to the local loops in the urban and rural areas to encourage roll-out in the rural areas**
- **if so, how the treatment should differ.**

Business and Residential Buildings/Customers

56. Consideration will also be given to whether separate regulatory treatment is justified depending on whether the buildings are business or residential buildings. Operators generally impose different retail tariffs depending on whether it is a provision of business or residential line. We have identified the following issues for exploration:

- Does this differentiation in tariffs reflect the different cost incurred in the roll out?
- Would direct access to business buildings be easier or more difficult than to residential buildings in terms of physical or technological constraints?

57. We also recognise that there is potential difficulty in categorising a building as business or residential. Clear cut cases are found in large commercial and residential development projects, but there are also buildings, especially older buildings which serve as both residential flats and shops/offices. This kind of buildings makes categorisation impractical. We

¹⁸ Including those exchanges that are classified as “parts of” rural according to the commercial agreement between PCCW-HKTC with the other operators.

wonder if the differentiation should really be between services to business or residential customers. We, however, recognise that many business customers operate within buildings for residential and business purposes with similar access problems as for the residential buildings. **We would like to invite comments on whether, and if so, how different regulatory treatment should be given to Type II interconnection for service to business and residential buildings / customer and the reasons thereof.**

Implementation Issues

58. Depending on the results of the review, the existing interconnection policy or any parts of it may not continue. There may be interconnections already implemented at present that will not qualify under the new framework. A transitional policy will need to be worked out to deal with these interconnections. In this regard, a phasing out or “sunset” policy will be necessary to transition the existing framework to the new one¹⁹. We have identified the following categories of interconnections:

- LALs that are already providing services
- Exchanges co-located and sub-tie cables that have been installed to prepare for connection with the LALs (but no LALs are yet in service)
- Exchanges that have been planned for co-location but the site set up works are yet to commence.

59. One way to deal with the interconnections that no longer qualify is to freeze their numbers by a certain date, and to provide that these existing

¹⁹ See for example, the regulatory policy adopted by Australia. In Australia, the unbundling of local loops is implemented through the access regime under the Trade Practices Act 1974, by declaring the local loops as “declared systems”. The Productivity Commission has recommended that Part XIC of the Trade Practices Act 1974 should include an explicit provision for sunset declaration. The maximum life of a given declaration should not exceed five years unless a further enquiry recommends its extension. The Australian government has now enacted the Telecommunications Competition Act 2002 to implement, inter alia, this particular recommendation of the Productivity Commission: http://www.dcita.gov.au/Article/0,0_1-2_3-4_113606,00.html and <http://scaleplus.law.gov.au/cgi-bin/download.pl?/scale/data/pasteact/3/3567>. See also CTRC’s decision in 1997 which set a sunset period of five years for near-essential facilities. This decision was subsequently superseded by CTRC’s order in 2001, which extended the sunset period without specifying a termination date. Refer further to Note 9.

interconnections should continue to function for a certain period of time and should then be phased out. Different cut-off dates and phasing out periods may apply to different categories of interconnections. **We would welcome comments in relation to employing a “sunset” policy and suggestions on the transitional arrangements.**

Charging principles

60. As mentioned in paragraph 22, this review also covers the charging principles applicable to Type II interconnection. Charging principles play an important role in fairly and adequately compensating the carrier for providing the interconnection service, as well as sending the proper “build or buy” signal to stimulate efficient investment in telecommunications infrastructure.

61. In previous sections, the issues discussed revolve around whether it is necessary or desirable to retain Type II Interconnection under different circumstances. Alternatively, such “necessity” and “desirability” may simply be a matter of setting the proper interconnection charges based on the underlying principles. For example, instead of considering a “sunset” clause for Type II interconnection, an “escalation” clause for interconnection charges might as well achieve the same goal of encouraging self-built networks.

62. Under the present regime, both narrowband and broadband Type II interconnection are based on the principle of “long run average incremental costs” (LRAIC) as the starting point for constructing the pricing models, for its merit of rapidly introducing competition to the market where the new entrants are still establishing their foothold. Taking a forward looking stance, however, we are open to industry comments on any modification to LRAIC or adoption of other charging principles for Type II interconnection, in anticipation of a more developed market environment for both narrowband and broadband services. Below is a list of possible charging principles to facilitate discussion:

- **Long Run Average Incremental Cost (LRAIC)** is defined as the difference in the carrier’s total costs in the long run with and without the service or facility supplied, divided by the total output of the service or facility. It includes a cost of capital as a

reasonable return for the carrier's risk of network investment. The LRAIC principle is established to provide a proper "build or buy" signal to the market. A new entrant would opt to "build" rather than "buy" if (and only if) its cost base is lower than that of the incumbent, thus ensuring investment efficiency and avoiding unnecessary resources duplication. However, LRAIC does not typically include indirect fixed costs at the corporate level which are not causally related to the interconnection, and may therefore be inadequate in compensating the incumbent or stimulating investment.

- **Total Service LRAIC (TSLRIC) or Total Element LRAIC (TELRIC)** Since a local loop system is typically shared among different services, such as the providing carrier's own telephone line services as well as Type II interconnection service, the straight application of the LRAIC concept (i.e. the avoidable cost if the Type II interconnection service were not provided) would not be sufficient as an incentive for investment. The TA has so far applied the "total service" LRAIC concept in Type II interconnection²⁰, i.e. computing the avoidable cost if the entire local loop system were not provided. That would enable all costs (e.g. duct costs) incremental to the provision of the local loop system to be included in the LRAIC calculations. TELRIC is the concept developed by the FCC for the implementation of the unbundling of network elements in USA. It reflects the incremental costs of setting up and maintaining the network elements supplied, e.g. the costs of setting up and maintaining the entire local loop system. Thus when applied to a network component like local loop, the application of TSLRIC and TELRIC would arrive at similar result.
- **Fully Distributed Cost (FDC)**, which will include the direct cost of the interconnection service plus the fully allocated common fixed costs incurred at the entity level. This approach usually involves costs of multiple products or services that cannot be separately attributed to individual segments. FDC is typically adopted in circumstances where the interconnection service is

²⁰ Paragraph 3.4.10 of the TA Statement on "Broadband Interconnection" issued on 14 November 2000.

provided to established competitors, or where it constitutes a substantial proportion of the business of the supplier of that service. The major drawback of the FDC model is higher interconnection charges which may retard new entry. Also, FDC is based on historical rather than current cost and therefore cannot provide an efficient “build” or “buy” signal. Arguably, the “full” allocation of common fixed costs is subject to arbitrary assumptions.

- **TSLRIC/TELRIC plus markup** is a costing model in-between that of TSLRIC/TELRIC and FDC in allocating shared indirect fixed costs. Which indirect fixed cost components to include, and to what extent, must be determined based on judgment, which is often arbitrary. However, this model can strike a balance between the pros and cons of LRAIC and FDC.
- **Retail minus** approach, which sets the price cap for interconnection at the contemporary retail price minus costs incurred by the retail activities of the network operator’s in-house/affiliated service providers. It is appropriate for a dynamic and fully competitive market, reflecting cost structures, market rates of return, business risks, etc., in a timely manner. It produces a neutral build-buy dichotomy, so disincentives are minimized. But if the market is immature and dominated by a few companies, then retail prices can reflect excess profits and interconnection prices will deviate from cost. If this is the case, it may be a deviation from the cost-based approach envisaged under section 36A(3B) of the Telecommunications Ordinance²¹. Alternatively, retail prices can be below cost to stimulate the market, and the interconnection price would not cover network costs.
- **Opportunity cost** incurred by the foregone option of the network operator in providing services itself to the end-customers. The opportunity cost principle has not been accepted by regulators

²¹ Section 36A(3B) provides that “The charges in a determination shall be based on the relevant reasonable costs attributable to interconnection, and in determining the level, or method of calculation, of the relevant reasonable costs attributable to interconnection, the Authority may select from among alternative costing method what he considers to be a fair and reasonable costing method.”

elsewhere, due to critical demerits of perpetuating monopoly profits in network operators and rewarding inefficiencies.

63. Another area for review is the principle of the lower of current or historical cost. Under the present regime, Type II interconnection charges are based on the current or replacement costs of the existing configuration of the incumbent's network using the most efficient technology. In certain situations (e.g. where the local loop concerned was constructed under the protection of monopoly and is fully depreciated and the provider of the local loop is pricing its own retail services based on the book value of the local loop)²², the TA may consider capping the interconnection charges at historical costs in order to balance considerations on economic efficiency, promotion of competition and fair compensation. However, the interconnection charges when capped at historical costs may fail to reflect the contemporary market signals. We will consider whether to retain the cap, generally or specifically for certain cost components.

64. We will also review the methodology in setting the appropriate weighted average cost of capital (WACC) for Type II interconnection. We have observed a recent trend of a widening gap between the WACC for incumbents and new entrants, driven by a shift of investors' appetite in favour of conservative investments amid global economic downturn, intense competition in telecommunications markets and the burst of the "Internet bubble". If the interconnection charge is based on the incumbent level of WACC, it might not provide adequate incentive for new entrants to "build". If it is based on the new entrant level of WACC, it might result in "windfall profits" for the incumbent and escalate the capital barriers to entry. The industry-average WACC might be a more balanced option, but it could as well be "stuck in the middle" in achieving various objectives.

65. In addition, we will consider the possibility of applying different charging principles under different circumstances of Type II interconnection, depending on the degree of essentiality of the facilities involved. We have identified several dimensions across which different levels of charges may be applied:

²² Paragraph 35 of TA Statement No. 7 (Second Revision) on "Carrier-to-Carrier Charging Principles" issued on 18 March 2002.

- **Service** (e.g. narrowband vs broadband);
- **Location** (e.g. urban vs rural);
- **Buildings/customers** (e.g. business vs residential)
- **Technology** (e.g. copper vs fibre);
- **Points of interconnection** (points A, B or C as mentioned above);
- **Timing** (before and after a “sunset” date); and
- Whether there is a **bottleneck**.

66. **We would like to invite interested parties to give their views on the issues brought up in the preceding paragraphs, itemised as follows for easier references:**

- **The charging principles adopted for Type II interconnection;**
- **The adoption of current or historical cost;**
- **The methodology in setting the appropriate WACC;**
- **The application of different charging principles to different circumstances of Type II interconnection.**

This review will set the general direction of the charging principles to be applicable for Type II interconnection but will not lay down details of the principles. Details of the principles will be the subject matter of separate consultation after the general direction is determined.

TIMING

67. Given the extensive nature of the review, we consider that this will be the first round of consultation, in which views will be solicited from interested parties on the issues and options in connection with Type II interconnection policy. This first consultation will end on **22 August 2003**. The comments received will be posted on OFTA’s website for information of the public. After consideration of the comments received, we will issue a further consultation paper listing the options that are under contemplation. The Government would expect to conclude the review exercise and make a decision by the end of 2003 or early 2004.

INVITATION OF COMMENTS

68. Views and comments on this consultation paper should reach the Office of the Telecommunications Authority on or before **22 August 2003**. **We would like to emphasise that in giving their comments, parties are requested to provide all relevant market and company records, data, statistics, and economic analysis in support. Such information is important for us to assess the current market conditions and shape a view as to the appropriate Type II interconnection framework conducive to further the market development.** Any person who submits the views and comments should be aware that we may publish all or any part of the views and comments received and disclose the identity of the source in such manner as we see fit. Any part of the submission which is considered commercially confidential should be marked. We would take such markings into account in making a decision as to whether or not to disclose such information. Submissions should be addressed to

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29/F Wu Chung House
213 Queen's Road Central
Wanchai
Hong Kong
Attention: Senior Regulatory Affairs Manager (Economic
Regulation) 3
Fax: 2803 5112
E-mail: ecchui@ofta.gov.hk

An electronic copy of the submission should be provided by e-mail to the address indicated above.

Office of the Telecommunications Authority
23 May 2003