

Interconnection and Related Competition Issues
Statement No. 7 (Third Revision)
“Carrier-to-Carrier Charging Principles” (for Fixed Carrier Interconnections)

Statement of the Telecommunications Authority

27 April 2009

Introduction

This Statement is an update¹ to the Telecommunications Authority (TA)’s Statement on Interconnection and Related Competition Issues Statement No. 7 (Second Revision) “Carrier-to-Carrier Charging Principles” (“Statement No. 7 (Second Revision)”) issued on 18 March 2002. This Statement provides guidance on carrier-to-carrier charging principles for fixed carrier interconnections that the TA will rely on in making a determination under section 36A of the Telecommunications Ordinance (Cap. 106). The TA may make a determination under that section for interconnection between fixed telecommunications networks in Hong Kong.

2. To ensure that the regulatory regime remains conducive to the development of fixed-mobile convergence (“FMC”), the TA issued two consultation papers on 21 September 2005 and 14 July 2006 respectively for review of the regulatory issues pertinent to FMC². As a conclusion of the FMC review, the TA issued a Statement entitled “Deregulation for Fixed-Mobile Convergence” on 27 April 2007 (“FMC Statement”) and concluded that, among others, the regulatory guidance for fixed-mobile interconnection charge (“FMIC”) in favour of the mobile party’s network pays (“MPNP”) model will be withdrawn subject to a 2-year transition period commencing from 27 April 2007. According to the FMC Statement, after the transition period, which ended on 27 April 2009, there would be no pre-set regulatory guidance for the interconnection charging arrangements between fixed and mobile carriers. Another outcome of the FMC review is the creation of the Unified Carrier Licence (“UCL”) under which a unified, single carrier licence will be used for

¹ This update has been made after consideration of the views and comments expressed by the industry in response to a consultation paper titled ‘Modification of Interconnection and Related Competition Issues Statement No. 7 (Second Revision) “Carrier-to-Carrier Charging Principles” (for Fixed Carrier Interconnections)’ issued by the TA on 16 January 2009.

² The consultation papers on “Revision of Regulatory Regimes for Fixed-Mobile Convergence” dated 21 September 2005 and “De-regulation for Fixed-Mobile Convergence” dated 14 July 2006.

licensing of any fixed, mobile and/or converged services³. On 9 May 2008, the TA issued a Statement entitled “Licensing Framework for the Unified Carrier Licence” (“UCL Statement”). In the UCL Statement, the TA indicated that the existing arrangement for fixed-fixed interconnection charge (“FFIC”) and mobile-mobile interconnection charge (“MMIC”) will remain unchanged, i.e. operators are free to set FFIC and MMIC commercially subject to observance of such regulatory guidance given by the TA. Unified carrier licensees will be free to negotiate interconnection agreements with other carriers under their licence obligations and the relevant statutory provisions, and in accordance with the prevailing regulatory guidance. For converged service provided under the UCL, the TA will decide on a case-by-case basis whether the service is primarily a fixed or mobile service if the TA considers it necessary to intervene in interconnection matters between a unified carrier licensee and other carriers. This Statement revises and updates relevant parts of the Statement No. 7 (Second Revision) issued on 18 March 2002 to reflect the regulatory arrangements as set out in the FMC and UCL Statements as well as other relevant Statements⁴ issued by the TA since March 2002.

3. In this Statement, unless the context otherwise requires, “fixed carrier licence” includes fixed telecommunications network service (“FTNS”) licence, fixed carrier licence and unified carrier licence under which the licensee is authorized to provide fixed services. “Fixed carrier” means holder of FTNS licence, fixed carrier licence or unified carrier licence who is authorized to provide fixed services. “Mobile carrier” means holder of mobile carrier licence or unified carrier licence who is authorized to provide mobile services.

Policy Objectives

4. In setting carrier-to-carrier charging principles, the TA is conscious of the Government’s pro-competition and pro-consumer telecommunications policies with the objectives⁵ as follows -

³ With the enactment of the concerned subsidiary legislation, the UCL has been implemented starting from 1 August 2008.

⁴ These include the Statements on “Charging Arrangements for International Call Forwarding Services” dated 11 June 2002; “Interconnection and Related Competition Issues Applicability of Statement No. 7 (Second Revision) issued on 18 March 2002 to Broadband Interconnection” dated 18 June 2002; “Implementation of ex post Regulation of the Tariffs of PCCW-HKT Telephone Limited under a New Fixed Carrier Licence” dated 13 January 2005; and “Withdrawal of Mandatory Type II Interconnection” dated 3 July 2008.

⁵ The policy objectives are promulgated on the website of Commerce and Economic Development Bureau, Communications and Technology Branch at <http://www.cedb.gov.hk/ctb/eng/telecom/tp.htm>

- that the widest range of quality telecommunications services should be available to the community at reasonable cost;
- that telecommunications services should be provided in the most economically efficient manner possible; and
- that Hong Kong should serve as the pre-eminent communications hub for the region.

The thrust of these policy imperatives for carrier-to-carrier charging principles is that such principles should be economically efficient and conducive to effective competition, which would in turn maximise consumer benefits and sustain a high performance in the telecommunications sector. Further, a more competitive telecommunications market will encourage private sector investment and innovation necessary for Hong Kong to maintain its position as a major telecommunications hub for the region.

Scope of the Charging Principles

5. As the telecommunications industry is a network-based industry founded on the principle that any customer of a network can communicate with, or gain access to, the customers or services connected to other networks, competing fixed carriers must establish commercial arrangements among themselves covering a wide range of matters, including for example acquisition of leased circuits, shared infrastructure, directory services, operator services and above all, interconnection issues. The fixed carrier licence conditions recognise this fact and there is a role for the TA to establish terms and conditions, including charges, for these arrangements particularly when the fixed carriers cannot agree on them. The TA has decided to establish some charging principles for his intervention on these matters. The charging principles fall into two classes :

- (i) Interconnection charging principles - covering matters which are subject to section 36A of the Telecommunications Ordinance and the corresponding licence conditions of the fixed carrier licences. These charging principles are applicable to issues such as points of interconnection, interconnection transmission links, calling line identification, interconnection of basic services, access to value-added services and personal number services, etc.

- (ii) Charging principles for non-interconnection matters - these cover all other fixed carrier to fixed carrier arrangements such as facilities and infrastructure sharing not directly associated with interconnection, directory and operator services, etc.

6. The TA is mindful of the appropriateness of the charging principles in relation to the status of the market development. The dynamic and evolutionary nature of the development of a competitive regime would thus justify that the charging principles be kept under review and developed in concert with the evolution of the industry and the establishment of competition.

Interconnection Charging Principles

General Principles

7. The TA has decided that fixed carrier to fixed carrier interconnection would be determined by him in accordance with the general principles set out below:

- *Fixed carriers must pay for the costs that they cause other fixed carriers to incur when interconnecting.* That is, where network interconnection is established and the use of that interconnection by one fixed carrier causes a second interconnected fixed carrier to incur costs, that second fixed carrier is entitled to recover those costs from the interconnecting fixed carrier. Cost causality dictates that each category of costs be analysed to determine the nature of the cost being incurred and why it was incurred. For example, if the cost is incurred as a result of another operator's request or as a result of another operator's use of the service, the responsibility to bear such cost would fall on the interconnecting fixed carrier making the request or benefiting from the use of the service.
- *In an interconnection of the Type I configuration between two fixed telecommunications networks, the operators of both networks are required by their licence conditions to interconnect with each other. They therefore have equal responsibility in ensuring that the two fixed networks are interconnected promptly and efficiently.* Therefore this principle, in application, suggests that where operators have an equal responsibility to interconnect their fixed networks, they should share equally in the cost of meeting those obligations.

- *Where interconnecting fixed carriers receive benefits from interconnection arrangements, the interconnecting fixed carriers should bear a proportionate share of the responsibility for interconnection costs from such arrangements.* One example of such benefits include an ability to indirectly access another fixed carrier's customers. Where a fixed carrier receives a revenue for providing a specific service, or for providing a direct connection to a specific service, it is also that fixed carrier's responsibility to pay the interconnecting fixed carriers who have provided conveyance services to enable delivery of the service to the customers.
- *Responsibilities for charges would be assigned to fixed carriers in a manner that encourages and motivates them to use facilities efficiently and to minimise duplicated or wasteful facilities.* The assignment of responsibilities should motivate operators to establish optimal points of interconnection, install appropriate levels of capacity for physical facilities and use each other's facilities judiciously.
- *Charges for interconnection and other related transactions will be based on relevant costs.* That is, costs incurred as a result of interconnection and the use of related services and facilities *or* costs which could be avoided if such services and facilities were not provided. Consistent with the policy objectives of economic efficiency and the promotion of consumer interests, interconnection charges must ensure that the charges are fair and compensatory for the fixed carrier providing interconnection and that the fixed carrier procuring interconnection is not subsidised. Cost based charges, including a cost of capital for the assets used in provision of interconnection services, will assist the fixed carriers to make the appropriate "build-versus-buy" decisions and provide a sound basis on which fixed carriers can make their commercial decisions on infrastructure development. The approach is designed to be fair to all fixed carriers: it is pro-competitive and fairly compensates any fixed carrier providing interconnection services to other fixed carriers.
- *The relevant costs of interconnection and other related transactions will be measured as the long run average incremental costs ("LRAIC"), including a cost of capital for assets used.* LRAIC is defined as the difference in the fixed carrier's total costs with and without the services or facilities supplied, divided by the total output of the services or facilities. The LRAIC standard is supported by precepts of economic

efficiency and established regulatory practice elsewhere as the appropriate starting position for fixed carrier to fixed carrier interconnection charges in this industry. The TA considers that the LRAIC should be based on the incremental cost of the “entire conveyance service”, i.e. the conveyance service for the calls of the fixed carrier’s own customers (including service providers) and the interconnecting service for the other fixed carriers interconnected with the fixed carrier in question. Since the “entire conveyance service” is to be considered in assessing whether a cost is incremental, the incremental costs will include the shared costs which are common to all the service elements of the “entire conveyance service”, but no other services. The incremental costs will exclude shared costs that are common to the conveyance service and other services (e.g. access services) provided by the fixed carrier - for example, the indirect fixed costs at the corporate level are not causally related to the provision of the conveyance service and should not be included in the LRAIC calculations.

- *As the telecommunications market has become mature, the LRAIC shall include a mark-up for the recovery of indirect fixed costs of the fixed carrier providing interconnection.*
- *Relevant costs should be determined with reference to the current cost measurement of assets.* The current cost of assets represents the most economical replacement cost of the remaining service potential of the existing assets. In calculating the LRAIC for Type I interconnection charges, the TA will make reference to the network configuration of the most efficient fixed carrier wherever appropriate. At the same time, the TA will use the current or replacement cost standard, but will consider applying a cap based on the historical cost standard on all or part of the cost components in the LRAIC, particularly those cost components related to land and buildings. This is to balance considerations from different angles - economic efficiency and fair compensation⁶ when determining the interconnection charges.
- *Costs for fixed carrier to fixed carrier transactions should reflect cause and effect relationships to the maximum extent possible.* These costs should be based on the concepts and approaches set out in the

⁶ See the TA’s Statement entitled “Review of the Telecommunications Authority’s Statements No. 4, 5, 6, 7 (Revised) and 8 on Interconnection and Related Competition Issues” issued on 18 March 2002.

Accounting Manual. In particular, LRAIC should be developed from a detailed analysis of the activities that cause costs to be incurred. In all instances, costs should reflect an efficient provisioning standard, that is, costs that would be incurred by deploying the most productive technologies and business processes.

- *Interconnection and related services and facilities will be provided on a desegregated basis.* An elemental service or facility is one that is readily separable within the context of the network's architecture or business process design and its cost can be determined with reasonable accuracy. This will enable fixed carriers to only purchase those components that they need. The desegregation should be to the extent that is justifiable by the cost-benefit of the desegregation. Geographic desegregation should also be provided where appropriate.
- *The structure of interconnection charges must reflect the behaviour of the underlying costs.* Relevant interconnection costs may have different relationships with interconnection activity, i.e., some costs may be fixed while others may vary. To the maximum extent possible, fixed costs should be recovered through fixed charges while variable costs should be recovered through a per unit charge related to the underlying activity. On this basis, where the cost is one-off (i.e. non-recurrent), the cost should be recovered as one-off (lump sum) charge. Where the cost is recurrent, but traffic independent, the cost should be recovered by fixed recurrent rentals. Where the costs of network component are traffic sensitive, they are best recovered through usage charges. Moreover, the current use of a two-tiered charging structure, namely cost per call attempt and cost per call occupancy minute, should further help reflect differences in the behaviour of the underlying costs.
- *If the TA makes a determination for the charges, he will base the charges on the cost of the most efficient fixed carrier, wherever appropriate, and the charges will be symmetrically applied to both interconnecting fixed carriers.*
- *In making reference to the most efficient fixed carrier, the TA may do all things that are necessary in order to eliminate any network inefficiency and he may take into account all relevant factors in providing the interconnection service when deciding the reasonable relevant costs of interconnection.*

8. In another Statement⁷, the TA set out the basic types of interconnection configurations that he would consider in an interconnection determination. In the context of the above general interconnection principles, specific principles in relation to each type of interconnection are discussed below.

Type I Interconnection

9. Type I interconnection is defined as interconnection between network gateways. Gateways may be toll exchanges, tandem exchanges, local exchanges or dedicated interconnection gateways. A point of interconnection (“POI”) is a notional mid-point of the link interconnecting network gateways. Type I interconnection charging principles are discussed in relation to initial establishment charges and usage charges.

Establishment Charges

10. Interconnection establishment costs relate to the costs incurred by fixed carriers in order to operationalise network interconnection, i.e. the costs of network interconnection provisioning. Such costs may be considered in two categories, i.e., costs incurred in establishing the physical link between fixed networks and network conditioning costs to prepare and maintain each fixed carrier’s own network for interconnection.

11. **Physical Link.** Set up costs associated with establishing and maintaining interconnection facilities will be based on the LRAIC standard and will be shared equally among the parties establishing the interconnection link. All asset related and operating costs actually incurred in establishing physical linkages between fixed networks will be included in the pool of costs shared equally by the fixed carriers. The set up costs of the physical links will include the costs of the ports and datafill activities associated with the links. The set up costs of the physical links (if identifiable, causally related and attributable to the provision of the interconnection service) may be regarded as part of the incremental costs for the provision of the interconnection service and recovered through the usage charge of interconnection. Where one party (or parties) requests functionality in excess of that required for establishing and maintaining basic interconnection, the costs will be borne by the party

⁷ Interconnection and Related Competition Issues Statement No. 6 (Revised) - 18 March 2002 “Interconnection Configurations and Basic Underlying Principles”.

(or parties) requesting the extra functionality. Such costs will be determined by the TA if required.

12. In a determination made in March 2001/November 2001, the TA has established a model for achieving a fair sharing of the risk in the investment in the network equipment for the provision of interconnection capacity which exceeds the capacity that could be agreed by both parties⁸. In particular, the model institutes some form of discipline – a commitment on minimum traffic volume over a definite period – on the operator requesting interconnection capacity so that it would bear the cost consequence of making excessive forecast. The objective is to ensure that the requesting operator could have all the capacity that it needs for its development but at the same time the model provides a safeguard to the providing operator in the event that it is proved that the order of the requesting operator is not justified in terms of demand for service.

13. Where the use of separate links for different types of calls is based on sound engineering grounds, the principle of sharing the costs for the links remains valid. The TA does not see the need to set out what he considers to be provisioning practices based on sound engineering grounds as this is somewhat outside the scope of this Statement. However, the TA invites operators to lodge their complaints on provisioning practices with him so that he can perform a comprehensive technical assessment and arrive at a fair and equitable decision concerning responsibility for charges in specific cases.

14. **Network Conditioning.** Conditioning costs incurred by a fixed carrier to prepare and maintain its own network for interconnection will be borne solely by that fixed carrier itself. Such costs include, but are not limited to, costs for ensuring network security and integrity, standardisation, equal access, changes in the numbering system, provision of calling line identification, etc. Each fixed carrier is responsible for the development, provision and maintenance of its own network to meet its licence conditions under the fixed carrier licence. One clear obligation is to operate as part of an integrated, interconnected infrastructure in Hong Kong. Therefore each fixed carrier will be required to meet these obligations and bear the relevant network conditioning costs on its own account. The costs of network conditioning (if identifiable, causally related and attributable to the provision of the interconnection service) may be regarded as part of the incremental costs for the provision of the interconnection service and recovered through the usage charge of interconnection.

⁸ See the Determination made by the TA in March 2001/November 2001 in respect of interconnection capacity between PCCW-HKT Telephone Limited and Wharf New T&T Limited.

15. This principle should be applied to the interconnection between the conventional public switched telephone network (“PSTN”) as well as integrated services digital network (“ISDN”).

16. If, however, a fixed carrier is requested to condition its network beyond its licence obligations, then the fixed carrier should be entitled to recover those costs from other interconnecting fixed carriers. An example of such work is when one fixed carrier is requested by another interconnecting fixed carrier to implement sub-levels of a numbering plan within the block allocated by the TA. If the implementation of the sub-levels is solely for the convenience and benefits of the requesting fixed carrier, and the work is beyond the licence obligations of the fixed carrier which has to perform the extra work, the cost should be borne by the requesting fixed carrier.

Usage Charges

17. Interconnection usage costs relate to the recurrent costs incurred by fixed carriers in passing traffic from one network to another via an established interconnection link and terminating or originating that traffic within their networks. The principles for determining interconnection usage charges under Type I interconnection are discussed in relation to direct and indirect forms of interconnection. These forms of interconnection were discussed in an earlier TA Statement⁹.

Direct Interconnection

18. Under this form of interconnection, an access customer of one fixed network may obtain access to the customers of other fixed networks to enable calls to be completed through the *direct* connection of the relevant fixed networks. That is, calls are passed directly from one fixed network to another fixed network.

19. In this section, the interconnection charging principles are discussed in relation to the interconnection scenarios that involve fixed carriers. In all cases the calls illustrated are basic telephonic calls without special call features.

20. **Fixed-Fixed.** In general, when an access customer of a fixed carrier places a call that terminates with another fixed carrier, an interconnection charge will be paid by the originating fixed carrier to the terminating fixed carrier. This is illustrated in Figure 1.

⁹ Interconnection and Related Competition Issues Statement No 1 - 28 March 1995.

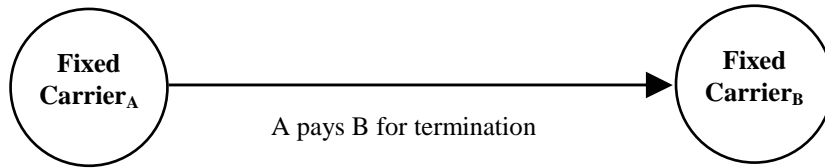


Figure 1

21. The charge will be based on LRAIC, reflecting the use of the traffic dependent portion of the terminating fixed carrier’s network.

Indirect Interconnection

22. Under this form of interconnection, an access customer of one fixed network may *elect* to obtain access to the services offered by another fixed network or may access customers of another fixed network via a third fixed network. In the first case, the access customer is *indirectly* accessing the services of another fixed network. In the second case, an access customer is *indirectly* accessing a customer of another fixed network. This situation will arise where there is no established direct link between the fixed network originating the call and the fixed network terminating the call. Of necessity, the call must transit a third fixed network to enable the call to be completed. Interconnection charging principles are discussed in relation to the two types of indirect interconnection. The following paragraphs consider different interconnection scenarios involving fixed carriers.

Indirect Interconnection - Service Access

23. **Fixed - Fixed - Value Added Service (“VAS”)**. When an access customer of a fixed carrier *elects* to use a VAS offered by, or connected to, another fixed carrier, an interconnection charge will be paid to the originating fixed carrier by the fixed carrier providing the service or access to the service (Figure 2). The approach recognises that the originating fixed carrier incurs costs and is entitled to compensation.

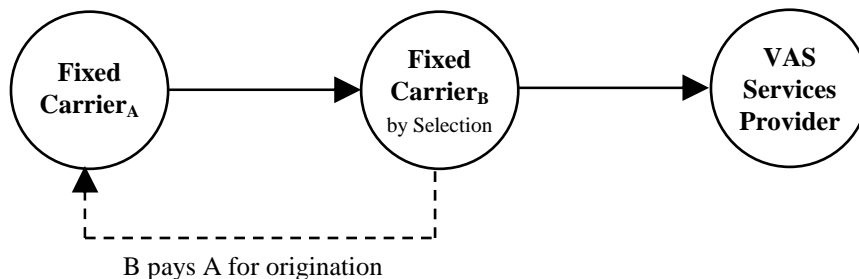


Figure 2

Indirect Interconnection - Customer Access

24. **Fixed - Fixed - Fixed.** An access customer of a fixed carrier may place a call to another fixed carrier which transits through a third fixed carrier because the originating fixed carrier chose not to establish a direct link to the terminating fixed carrier. In such a case, interconnection charges will be paid by the originating fixed carrier to the transiting and terminating fixed carriers (Figure 3).

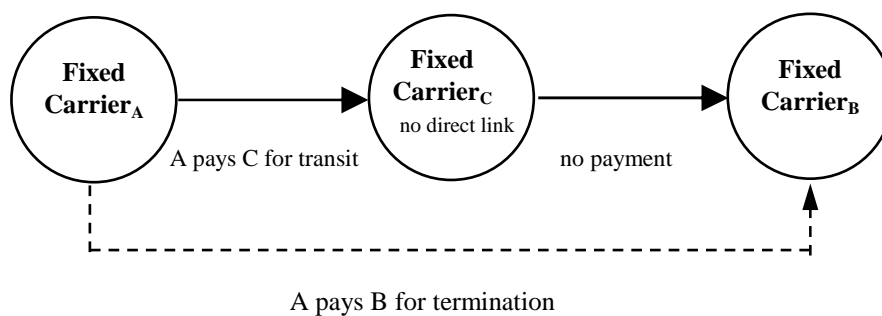


Figure 3¹⁰

25. **Mobile - Fixed - Fixed.** When an access customer of a fixed carrier receives a call from a mobile carrier that transits through another fixed carrier's network because of no direct link or because of overflowing traffic, interconnection charges involved in processing such calls for the originating, terminating and transiting networks (Figure 4) are outside the scope of this Statement and subject to separate arrangement between the interconnecting parties.

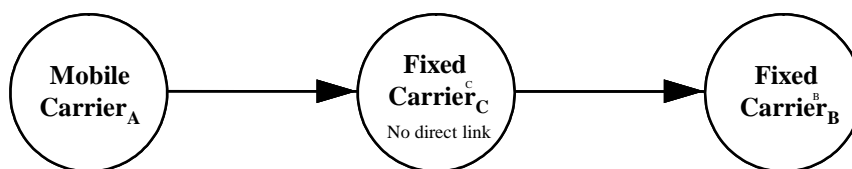


Figure 4

26. **Fixed - Fixed - Mobile.** In the reverse situation to the above, where an access customer of a fixed carrier places a call to a mobile carrier that transits through another fixed carrier's network because of no direct link or because of overflowing traffic, interconnection charges involved in processing such calls for the originating, terminating and transiting networks (Figure 5) are outside the scope of this Statement and subject to separate arrangement between the interconnecting parties.

¹⁰ Figure 3 illustrates one case of payment flow by the original fixed carrier (A) to the terminating fixed carrier (B) and transiting fixed carrier (C). An alternative to the case in Figure 3 is C pays B and A also in turn pays C.

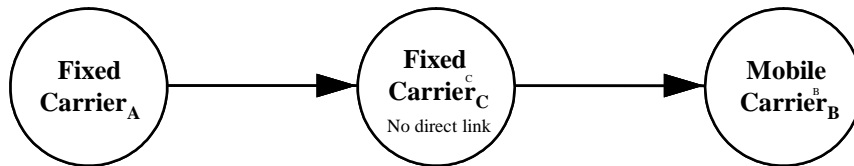


Figure 5

27. **Mobile - Fixed - Mobile.** Where two mobile carriers use a fixed carrier for transit, interconnection charges involved in processing such calls for the originating, terminating and transiting networks for the transit (Figure 6) are outside the scope of this Statement and subject to separate arrangement between the interconnecting parties.

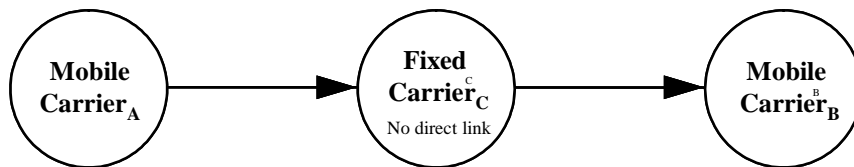


Figure 6

28. **Mobile - Fixed - Fixed – Mobile.** Where two mobile carriers use two fixed carriers for transit (Figure 7), interconnection charges involved in processing such calls for the originating, terminating and transiting networks are outside the scope of this Statement and subject to separate arrangement between the interconnecting parties. However, such multiple transit arrangement is inefficient and should be discouraged through the setting of interconnection charges.

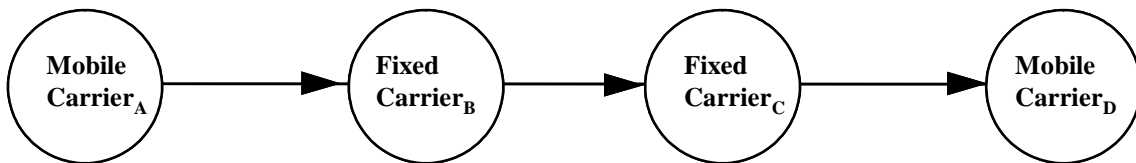


Figure 7

Type II Interconnection

29. Type II interconnection is defined as interconnection at points in the local loop. An access customer of one fixed network may choose to become an access customer of a second fixed network. This would involve the second fixed carrier interconnecting to the local loop of the first fixed carrier.¹¹ It should be noted that with effect from 1 July 2008, mandatory Type II interconnection at the exchange level

¹¹ Interconnection and Related Competition Issues Statement No. 6 (Revised) - 18 March 2002

(Point A) has been withdrawn¹² while mandatory Type II interconnection at the street level (Point B) and in-building level (Point C) will be maintained. Details on the latest regulatory arrangement on Type II interconnection should be referred to the Statement on “Withdrawal of Mandatory Type II Interconnection” issued by the TA on 3 July 2008.

30. The interconnection charging principles for interconnection usage under this scenario are the same as those discussed for direct access under Type I interconnection in paragraphs 18 to 21 above. The interconnection charging principles for determining charges for establishing Type II interconnection are discussed below.

Establishment Charges

31. Under Type II interconnection a second fixed carrier may lease or acquire existing customer access facilities from another fixed carrier which already owns such facilities. Because, by definition, the access facilities already exist, no new construction is required as is the case under Type I interconnection. The charging principles for Type II interconnection are therefore concerned with determining an appropriate charge for existing facilities rather than sharing costs of new construction.

32. In deciding interconnection charging principles, the TA is mindful of the requirement to ensure that charges determined under such principles are economically efficient. An economically efficient outcome would be consistent with that reached by two parties acting in good faith and seeking to minimise costs and avoid duplication of access facilities. Setting a charge that is too low would subsidise new fixed carrier entrants by giving them a “free ride”. Setting the charge too high would over compensate the fixed carrier owning the access facilities and would encourage wasteful duplication of common access facilities. Accordingly, it is essential that the interconnection charging principles provide the correct signals for fixed carriers considering “build versus buy” decisions for customer access facilities.

33. As consistent with the general interconnection charging principles discussed in the first part of this Statement, the LRAIC approach should be used for determining the charges for Type II interconnection access facilities. The interconnection charges will be based on the current capital and operating costs of the customer access networks (copper-based local loop systems) of the fixed carrier providing the Type II interconnection access. At the same time, the TA will consider

¹² Buildings meeting the “essential facilities” criterion that justifies mandatory interconnection in the consumer interest are exempt from the withdrawal arrangement.

applying a cap based on the historical cost standard on all or part of the cost components in the LRAIC (see eighth bullet point in paragraph 7).

34. LRAIC would include both the line dependent and fixed costs of the local loop. Line dependent costs would include the costs of installing and maintaining all cable plant and associated loop equipment which vary with the number of lines. The costs of long lived assets which are invariant with the number of lines provided would also be included in the LRAIC cost pool. Total costs would be divided by the total number of lines in the particular configuration to yield the LRAIC per line.

35. LRAIC charges need to be desegregated into the different components of the local loop, i.e. local exchange main distribution frame (“MDF”), distribution point, and in-building MDF as described in TA’s Statement No 6 (Revised). In addition, charges should also be desegregated into geographic areas to reflect differences in local loop configurations and cost structures.

Specific Call Types

36. In this section, the interconnection charging principles are discussed in relation to specific call types which overlay the interconnection charging principles discussed in the previous section.

Personal Numbers

37. Where a fixed carrier receives a call for one of its personal number customers from another fixed carrier, a terminating charge is paid to the terminating fixed carrier (Figure 8). This situation is entirely consistent with the basic principle that the originating fixed carrier pays for call termination. Should the fixed carrier providing the personal number service forward a call to another fixed network, that call will be treated according to the relevant call type.

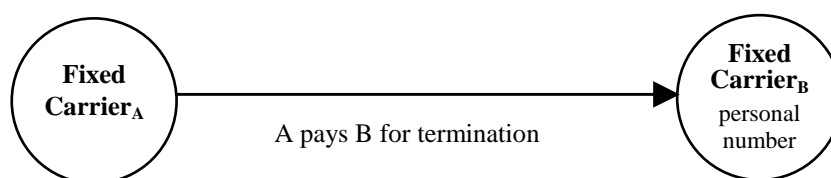


Figure 8

38. The charging arrangement related to the use of personal numbers for “international call forwarding services” (“ICFS”) should be referred to the Statements entitled “Charging Arrangements for International Call Forwarding Services” and

“Implementation Issues on the Charging Arrangements of International Call Forwarding Services” issued by the TA on 11 June 2002 and 25 January 2003 respectively. In the FMC Statement (paragraphs 194 – 195), the TA indicated that he is open-minded as to whether the ICFS charges should be de-regulated or re-regulated in the context of removing asymmetric regulatory treatment of fixed and mobile networks to minimise distortion to competition. The TA will consider initiating a review of ICFS interconnection charge in accordance with the established procedures, if the industry submits a request to do so¹³.

Ported Numbers

39. For the interconnection of calls to an end-user customer whose number has been ported, the originating fixed carrier will pay terminating charge to the terminating fixed carrier (Figure 9). This situation is entirely consistent with the basic principle that the originating fixed carrier pays for call termination. For other call types, the charging methodology should depend on the underlying all types.

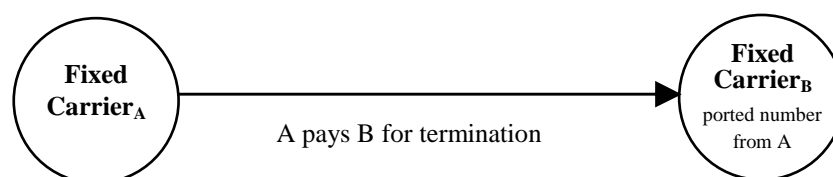


Figure 9

Calls to Another Fixed Carrier’s Business

40. Calls to another fixed carrier’s business, including *customer service calls*, would be considered as normal calls. It is appropriate that the originating fixed carrier pays a terminating charge to the receiving fixed carrier since it requires the receiving fixed carrier to complete the call (and therefore incur the cost for call termination). The final destination of such a call should not be a relevant factor since the receiving fixed carrier has incurred costs to enable termination of calls and should accordingly recover these costs from the originating fixed carrier.

¹³ In the consultation paper entitled “Variation of the Determination of the Terms and Conditions of Interconnection for International Call Forwarding Services” issued on 19 March 2009, the TA has set out his proposal to vary the ICFS interconnection charge when the FMIC arrangement is de-regulated.

Volatile Calls

41. *Volatile calls* should be classified as normal calls, unless the calls are made to a VAS. The fact that the originating fixed carrier may have to make special arrangements to handle these calls does not alter the nature of the calls. The calls are made to ordinary destinations which simply have special traffic patterns. The originating fixed carrier has the operational need to make special arrangement to achieve the required quality of service and protect the other services from degradation.

Calls to Service Access-Codes

42. Calls to service access codes for external telecommunications services (such as codes with prefix “15” or “16”) are subject to Local Access Charges (“LAC”) and reference should be made to other relevant Statements issued by the TA¹⁴. Calls to other service access codes would need to be considered individually based on the classification of the underlying call being made.

Freephone calls, Information Service Calls and Calling Card Calls

43. The customer using the service would likely be paying an additional amount for the call over and above the local service line rental. Therefore calls to these services would constitute indirect access to VAS.

Paging Calls

44. The current policy is to classify only calls to *auto paging services* to be VAS calls. Calls to *operator-assisted paging services* are regarded as ordinary calls. This is a policy decision to do so given a long standing precedent in the industry and the current stage of the paging industry. The TA sees no reason why the long-standing arrangement should be changed at this time.

¹⁴ The TA set out a regulatory framework and a determination on the LAC applicable for external telecommunications service (“ETS”) traffic in the Statement of 30 December 1998 on “Implementation of Local Access Charge and Modified Delivery Fee Arrangements”. The regulation of LAC was reviewed by the TA in the FMC exercise. According to the FMC Statement (paragraph 138), the TA considers that there is scope for considering deregulating the level of LAC in future. However, this is a decision which is more appropriate to make when consideration is given to withdrawing or modifying the existing determination on LAC. In the meantime, the TA will continue to monitor the effect of withdrawing the FMIC regulatory guidance on the competitive landscape of LAC.

ISDN Calls

45. An ISDN call is not a separate call type, because an ISDN call can theoretically be a call involving any of the call types for PSTN. However, for some fixed carriers, there is currently a fundamental difference between the tariff structure in PSTN and that in ISDN. There is no usage charge for local PSTN calls between end users, whereas there are usage charges for ISDN calls. Where the concerned fixed carriers had adopted an ISDN overlay network to provide ISDN service, it is necessary to establish two types of interconnect trunk groups between operators, the “ISDN trunk group” for which the terminating operator will support the ISDN capability and the “PSTN trunk group” for which the terminating operator will provide either Telephone User Part or Integrated Services Digital Network User Part signalling for succeeding circuit path. For an ISDN originating data call, the originating operator will route the call to the terminating operator via the ISDN trunk group. For an ISDN originating non-data call, the originating operator will route the call to the terminating operator via the ISDN trunk group or the PSTN trunk group. For a PSTN originating call, the originating operator will route the call to the terminating operator via the PSTN trunk group.

46. The following charging rules should apply:

ISDN / PSTN POI Type¹⁵	Called Party¹⁶	Charging Rule
ISDN	Normal telephone user	ISDN terminating access charge (“TAC”)
	VAS provider	ISDN TAC
	Personal number	ISDN TAC
	Non-automatic paging number	ISDN TAC
PSTN	All	Refer to the relevant charging principles for PSTN calls

For ISDN transit calls (via ISDN POI type),

<i>End-to-End Charging Rule</i>	<i>Transit Charging Rule</i>
Originating access charge	Terminating Operator Pays
TAC	Originating Operator Pays

¹⁵ ISDN / PSTN POI type is distinguished by the POI trunk group selected by the call originating party for conveying the call.

¹⁶ This table only shows types of local calls between fixed carriers.

IP Telephony Calls

47. Where one fixed carrier hosting a service-based operator providing IP telephony services delivers calls originating from or terminating to IP telephony customers via a PSTN gateway to or from another fixed carrier, the hosting fixed carrier will be responsible for handling all the interconnection arrangements of the concerned IP telephony traffic in accordance with the existing charging principles for interconnection. Reference should be made to the relevant TA Statements including the Statements on “Services-Based Operator (“SBO”) Licence” dated 6 January 2006 and “Regulation of Internet Protocol (“IP”) Telephony” dated 20 June 2005.

Charging Principles for Non-interconnection Matters

48. In addition to interconnection services and facilities that fall into the Type I and Type II interconnection scenarios, or are supplementary to interconnection, fixed carriers may also acquire other facilities and services that fall under other licence conditions. The TA may be required to determine these charges when fixed carriers are in dispute. Supplementary facilities may include ducts, risers, space in equipment rooms, etc; supplementary services may include directory assistance, fault reporting, customer inquiries, network maintenance, inter-carrier billing, and operator services. Reference should be made to the relevant Statements¹⁷ issued and Determinations¹⁸ made by the TA.

49. Cost considerations aside, the non-interconnection services that fixed carriers may require of another fixed carrier are difficult to specify. Such requirements are dependent on a number of factors including the technical specifications of the fixed carriers’ networks, the functionalities incorporated in their networks, the pace of network rollout and the availability of services and facilities from sources other than fixed carriers.

¹⁷ For example, the TA has issued a Statement on “Charging Principles and other Relevant Issues for the Provision of Raw Directory Information under General Condition (“GC”) 25 of the Fixed Telecommunications Network Services (“FTNS”) Licence or Special Condition (“SC”) 12 of the Fixed Carrier Licence” dated 12 January 2005. Another Statement on “Use of Public Payphone Kiosks on Public Streets and Unleased Government Lands for the Provision of Public Wi-Fi Service” was issued on 15 February 2008. A full list of Statements issued by the TA in relation to fixed telecommunications services may be found on OFTA’s website at <http://www.ofta.gov.hk/en/tas/tas-bs-ftn.html>.

¹⁸ For example, the TA has made four Determinations in relation to directory information services on 27 September 2005, 13 October 2005, 29 December 2006 and 25 January 2007. Details may be found at <http://www.ofta.gov.hk/en/ta-determine/ta-determine-dulc.html>.

50. In setting appropriate charging principles for non-interconnection services, the TA is minded to ensure that charges determined under such principles are economically efficient. Consistent with the discussion in paragraph 32, an economically efficient outcome would be consistent with that reached by two parties acting in good faith and seeking to minimise costs and to avoid duplication of services and facilities.

51. In this context, the TA does not wish to set rigid principles at this time for determining charges for non-interconnection services. In particular, this relates to the establishment and the strict adherence to a particular cost standard when different cost standards may be relevant under different circumstances. The TA does not wish to stand in the way of negotiated outcomes between parties acting in good faith provided that no anti-competitive or anti-consumer interest element is present.

52. The TA would of course, set charges should he be required to do so. Should this need arise the TA would abide by the principles of cost-based charging and cost causality.

Application of the Charging Principles

53. A fixed carrier FTNS licensee may request a determination by the TA pursuant to section 36A of the Telecommunications Ordinance or the TA may make a determination in the public interest. Also the TA may be required to set charges for inter-carrier arrangements pursuant to a number of fixed carrier licence conditions. This Statement has set out the principles the TA would take into account in making determination under section 36A for fixed carrier interconnections. The TA has published a document on “Procedures for Making Determinations on the Terms and Conditions of Interconnection under Section 36A of the Telecommunications Ordinance (Revised: 27 September 2001)” which specifies the steps and the time required for each step required in the processing of determination request. This will allow the transparency and certainty to the industry of the time required for the determination proceedings.

54. The TA would take into account the charging principles set out in this Statement in the determination of charges for Type I interconnection between circuit-switched narrowband fixed networks including ISDNs and PSTNs and Type II interconnection to copper-based local loops for narrowband services¹⁹ because it was

¹⁹ In another Statement issued by the TA on 18 June 2002 on “Interconnection and Related Competition Issues Applicability of Statement No. 7 (Second Revision) issued on 18 March 2002 to Broadband Interconnection”,

with these types of interconnection in mind that the principles in this Statement were developed. For the avoidance of doubt, the charging principles set out herewith does not prejudice the TA's power to select from among alternative costing methods what he considers to be a fair and reasonable costing method for the charges in a determination under section 36A of the Telecommunications Ordinance.

55. This Statement is issued as a Guideline pursuant to section 6D of the Telecommunications Ordinance.

Office of the Telecommunications Authority
27 April 2009

the TA decided that he will not refer to the costing methodology in the Statement No. 7 (Second Revision) issued on 18 March 2002 when making determinations on Type II interconnection to copper-based local loops for broadband services.