
Schedule C : Technical & Network Operational

Schedule C
Technical and Network Operational Obligations

1. Network Conditioning Obligations
 - 1.1 Non-discrimination

Access Provider shall perform Network Conditioning on an equivalent basis to that which the Access Provider performs for itself for the same or similar Services. The costs for works on Network Conditioning pursuant to an Order shall be apportioned in an equitable manner between the Operators having regards to cost causation.
 - 1.2 Commencement
 - 1.2.1 Access Provider will commence Network Conditioning immediately following:
 - (a) confirmation of an Order from the Access Seeker; and
 - (b) agreement by the Access Provider and the Access Seeker on:
 - (i) geographical coverage;
 - (ii) number information (i.e., length and code allocation), if relevant;
 - (iii) origins from or destinations to which access is require, if relevant;
 - (iv) network routes (including which party is responsible for provisioning Interconnect Link); and
 - (v) handover arrangements and relevant Points of Interface.
2. Point of Interface Procedures
 - 2.1 Interconnection
 - 2.1.1 Each party must interconnect its Network with the Network of the other party in accordance with the terms of the Access Agreement.
 - 2.1.2 A Point of Interface may be a Point of Interconnection ("POI") or a Point of Presence ("POP"). A POI may be implemented in any of the following two configuration options:
 - (a) In- Span Interconnection

The POI lies at some point along the Networks. Each party is responsible for the transmission Equipment at its end of the cable, and the cable from its building to the POI. In the case

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of wireless "Inspan Interconnection", the POI lies somewhere between the terminal Equipment of the two Operators.

(b) Physical Co-Location

The POI lies between the Equipment of Access Provider and the Equipment of the Access Seeker. In this case, Access Provider may provide facilities access for Access Seeker to install its Equipment at the Access Provider's Equipment Building. The Interconnect Link from the Access Seeker's Equipment to its own premises are maintained by the Access Seeker.

2.1.3 Each party is responsible for provisioning and maintaining Network Facilities (including those Network Facilities which form part of the Interconnect Link and the transmission Equipment) on its side of the Point of Interface.

2.1.4 Locations available for POIs are as listed in Annexure III.

2.1.5 The Access Seeker may request a Point of Interface at a location not specified by the Access Provider under sub clause 2.1.4. The Access Provider must consider the request in good faith and must, acting reasonably, accept or reject the request. If the request is rejected, the Access Provider must give reasons for the rejection.

2.1.6 When determining which locations are to be listed as a Point of Interface under sub clause 2.1.4. or when considering a request under sub-clause 2.1.5:

- (a) the Access Provider must offer Interconnection and Co-Location at any other technically feasible point;
- (b) the Access Provider may offer more than one form of Interconnection configuration in relation to a particular location;
- (c) the Access Provider must not reserve space other than for its own current needs, its future needs (calculated by use of a reasonably projected rate of growth over two (2) years) and the needs of other Operators who are currently occupying or have ordered additional space from the Access Provider; and
- (d) the Access Provider must have regard to any possible rearrangement of its Equipment to eliminate space inefficiencies.

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- 2.1.7 Access Provider must take reasonable steps to optimise its use of physical space (including by upgrading its facilities). If reasonable steps have been taken and no further physical space is available at a Point of Interface location, the Access Provider is not obliged to grant Physical Co-Location to the Access Seeker at that location.
- 2.1.8 The Access Seeker may share Physical Co-Location with another Operator subject to the terms and conditions to be agreed provided always:
- (a) the Access Seeker first notifies the Access Provider in writing of the other Operator's identity before sharing physical Co-Location with the other Operator; and
 - (b) Access Seeker warrants that the other Operator will comply with the Access Seeker's obligations in relation to the physical Co-Location.
- 2.2 Point of Interface factor
- 2.2.1 Provisioning of New POI
- (a) In-Span Interconnection
For In-Span Interconnection the connection will be provided by means of optic where as agreed, due to location speed or other reasons, wireless connection may be used.

The provision via wireless connection may be used permanently, or as an interim measure and in such case planning and implementation of fibre optic shall be carried out. The following shall also be agreed for In-span Interconnection:-
 - (i) the In-span fibre connection shall be a point mutually agreed;
 - (ii) the number of other nodes to be served by this POI capacity
 - (iii) Synchronous Digital Hierarchy (SDH) is the preferred technology and the type of equipment at both end must be from the same equipment vendor or compatible to Access Provider's equipment;
 - (iv) Subject to capacity requirement and Forecast, SDH technology shall also be considered.

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2.2.2 Establishment for a New POI

- (a) If the Access Seeker wishes to establish a new POI, the Access Seeker must notify the Access Provider in advance. The identification for POI shall be notified in advance in accordance with the MSA Determination. Before the acceptance of the establishment of a new POI, the following information has to be available and the arrangements to be finalised before the planning for a new POI Interconnect Link be done. They are;
- (i) the ordering party shall submit its Five (5) year updated Forecast;
 - (ii) the number of routes and nodes that will be served by the Interconnect Link provided at the proposed POI shall be indicated;
 - (iii) leased circuits requirements (non POI if required)
 - (iv) method of provisioning whether In-span or Virtual Co-location
- (b) The five (5) year circuit Forecast for the Interconnect Link at the agreed new POI shall be agreed by both Parties.
- (c) The Interconnect Link shall be dimensioned to provide for a minimum of three years provisioning period for the purpose of planning.

2.2.3 Provisioning of Additional Capacity at Existing POI.

- (a) The following information must be available before the decision to provide additional interconnect capacity at the existing POI. They are:
- (i) Existing Interconnect Transmission Facilities;
 - (ii) The utilization of each available Interconnect Transmission media;
 - (iii) The number of E1s leased by the Access Seeker, if applicable;
 - (iv) The ordering party shall submit its Order on a three (3) monthly basis
- (b) The provision of additional Interconnect Link at the POI shall be agreed once any of the following conditions are met:
- (i) The circuit utilisation of the existing interconnect facilities is at 75%.

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(ii) The demand of circuits exceeds the Forecasted circuits.

(c) The Interconnect Link shall be dimensioned to provide for a three (3) years provisioning period.

(d) The need for migrating from existing Virtual Co-location to the In-span Interconnected bearer shall be permitted once the In-span Interconnect bearer is established in accordance with the MSA Determination and the capacity of the new POI is sufficient to cater for migration.

2.2.4 POI Location Considerations Technical consideration for POI shall be as follows;

(a) Transmission facility has the capacity to intercon

(b) Timely and efficient deployment of sufficient capacity of links to support the required grade of service to Customers.

(c) Preservation of network security

3. Decommissioning Obligations

3.1 Decommissioning of POIs

(a) Access Provider may request the decommissioning of POI;

(b) If Access Provider makes such a request, the Parties will consult and negotiate a timetable for decommissioning;

(c) The Access Provider must offer an alternative POI to the other Party to route interconnection traffic;

(d) The Access Provider shall use its best endeavour to ensure no or least traffic interruption and the Access Seeker shall be responsible to reroute the existing traffic before the decommissioning of the POI;

(e) Both Parties shall mutually agree decommissioning of any working circuit. For example, decommissioning may take place due to retirement of equipment or rearrangement of network configuration. The Party planning to decommission any link must give advance notice in writing in accordance to Clause 3.2 below and the Parties shall mutually agree upon a suitable and expected time frame for completing the decommissioning.

3.2 Decommissioning Notice

Except where an Operator is required to vacate the site where a Point of Interface is located (as a result of a third Party landlord's notice under an arm's length tenancy agreement), Access Provider must provide no less than:

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- (a) one (1) year's notice in writing to all relevant Access Seekers prior to the decommissioning of a Point of Interface; or
- (b) six (6) month's notice in writing prior to the decommissioning of any other Facilities or Services.

Where Access Provider is required to vacate the site where a Point of Interface is located as a result of a third Party landlord's notice (under an arm's length tenancy agreement), the Access Provider must provide all relevant Access Seekers with as much notice as possible in relation to the matters in paragraphs (a) and (b) above. The Operators must co-operate and negotiate on the timetable for decommissioning of the affected Facility or Service.

4. Network Change Obligation

4.1 Network Change

This Clause applies where a party proposes to implement a Network Change of a type referred to in Clause 4.2 which necessitates a change in the hardware or software (including interface software) of the other party's Network in order to ensure the continued proper operation and compatibility of the parties respective Networks, services and procedures.

4.2 Types of Changes

4.2.1 The following kinds of proposed Network Changes may be within the scope of Clause 4.1:

- (a) any change by the party proposing to make the change ("Notifying Party") to any technical specification of the interconnection interface between their respective Networks ("Interface Change");
- (b) any change by the Notifying Party to any technical specification or characteristic of the Services or Facilities to which the other Party ("Recipient Party") has access which will or might affect:
 - (i) the Recipient Party's Network;
 - (ii) the Recipient Party's use of the Services or Facilities provided by the Notifying Party ("Service Change");
- (c) any change by the notifying Party to any technical specification or characteristic of that Notifying Party's Network which will or might affect the Recipient Party's Network ("Network Change");
- (d) any change by the Notifying Party to and of the operational support systems used in intercarrier Party processes, including without limitation:

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- (i) the billing system; or
 - (ii) the Ordering and provisioning systems.
- (e) any enhancement by the Notifying Party of the features, functions or capabilities of the Services or Facilities to which the Recipient Party has access, which enhancement the Notifying Party proposes to make available either;
- (i) to itself or,
 - (ii) to any other Party ("functionality Change"), (collectively referred to as "Relevant Changes").

4.3 Notification of Change

4.3.1 If a Notifying Party proposes to make Relevant Change to its Network, services or procedure, the Notifying Party shall provide the Recipient Party with notice in writing of:

- (a) the nature, effect, technical details and potential impact on the Recipient Party's Network of the proposed Relevant Change, described at a sufficient level of detail to enable the other Party to identify and begin planning such changes as may be necessary or desirable for the Recipient Party to make to its Network, services or procedures in consequence of the Relevant Change; and
- (b) a date, which shall be no later than ten (10) Business Days from the date of the notice under this Clause, on which representatives of the Notifying Party will be available to discuss with representatives of the Recipient Party the proposed Relevant Change and the changes that may be necessary or desirable for the Recipient Party to make to its Network, services or procedures in consequence of the Relevant change as soon as reasonably practicable and, in any event, with not less than the relevant notice period set out below:

Relevant Change: Notice period:

Interface Change	4 months
Network Change	6 months
Service Change	3 months
Functionality Change	3 months

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4.4 Testing

4.4.1 A Notifying Party shall, bearing its own costs in doing so:

- (a) co-operate with a Recipient Party in relation to the development of procedures for testing the impact of Relevant Changes on the proper operation and compatibility of the parties' respective Networks;
- (b) jointly carry out testing with the Recipient Party no less than twenty (20) Business Days before the Notifying Party proposes to effect the Relevant Changes. The testing shall be conducted in accordance with the testing procedures developed under paragraph 4.4.1 (a)

4.4.2 Subject to the Recipient Party having co-operated with the Notifying Party in relation to the conduct of tests under subsection 4.4.1, if such tests:

- (a) are not accepted by ten (10) Business Days prior to the date when the Notifying Party proposes to effect the Relevant Changes; or
- (b) do not provide reasonable assurance of the continued proper operation and compatibility of the Parties' respective Networks, services and procedures the Notifying Party must postpone implementation of the Relevant Changes. The period of the postponement will be the period necessary to allow the Parties to repeat the steps in subsections 4.3.1 to 4.4.1above.

5. Network Facilities Access and Co-Location

5.1 Unless otherwise agreed by the parties, each POI will be physically installed and housed at the Access Provider's available POI locations as listed in Annexure III. All Operators shall mark or label their Equipment in such manner that they can be easily identified as the Equipment of the Operator.

5.2 The parties will negotiate and agree on all applicable terms and conditions in respect of technicalities for the provision of Services, in addition to those provided for in Clause 5.1, as required.

5.3 The parties may negotiate and agree on the location of the POI. For purpose of clarification, it is hereby agreed that in order to minimise the cost and to promote efficiency of Network deployment, the technical manner and the location of the POI must minimise the length of any link which either party will need to build and to this end the mode of provisioning Interconnect Link shall

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be full span Interconnection by way of fiber or wireless transmission or any other method of interconnection as agreed by the parties.

- 5.4 The parties will agree to all applicable terms and conditions in respect of access to the agreed POI locations as well as any other operations and implementation issues, in addition to those provided for in Clauses 5.3, as required.
- 5.5 The parties acknowledge and agree that the Commission may issue a framework or guidelines pertaining to the establishment and maintenance of POIs and access to the Facilities of telecommunications network of the parties. In the event that such framework or guidelines are issued by the Commission, the parties agree to review, and where necessary, revise and/or modify the relevant provisions of this agreement to ensure consistency with the framework or guidelines.
- 5.6 An Operator shall permit, and do all things reasonably necessary to allow the Other Operator to maintain its Equipment at or in the Facilities to which access has been granted. This may include, for example, the provision of physical access. For the purposes of this subsection 5.6, an Operator shall be permitted to maintain its Equipment at or on the Facilities if the Other Operator allows external contractors or other third parties to maintain similar Equipment on the Facilities.
- 5.7 The utility cost in respect of the Facilities as contemplated in this section 5 shall be apportioned (in accordance with fair and equitable principles) against the utility and ancillary costs charged to other Access Seekers at the relevant location.
- 5.8 It is agreed that for the purposes of providing Interconnect Link to trunk Interconnect to and from POI's, equipment can be shared in Access Seekers' premises and Access Provider shall have the right to co-locate and to offer virtual co-location (either by fibre or wireless) to the other party with a Licence (other than the party hereto) in Access Seeker premises.

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