

INTERCONNECTION GUIDELINES, 2004

1. Introduction

1.1 In exercise of the powers conferred under section 5(2)(h) of the Pakistan Telecommunication (Re-organization) Act, 1996 the Pakistan Telecommunication Authority hereby issues the following Guidelines in respect of interconnection arrangements.

1.2 The operators will take these Guidelines into account while entering into agreement with other operators for interconnection of their networks and will give reasons where the Guidelines are departed from. The Authority retains the right to depart from the Guidelines where the circumstances justify such action.

2. Title, Commencement and Scope

2.1 These Guidelines may be called “Interconnection Guidelines, 2004”.

2.2 These Guidelines shall take effect from the date of issuance by the Authority.

2.3 These Guidelines shall be applicable to all licensed telecommunication service providers in Pakistan.

3. Interpretation

3.1 In these Guidelines, unless repugnant to the subject or context:-

- (a) “**Access**” means the making available of facilities and/or services to another operator under defined conditions, on either an exclusive or non-exclusive basis, for the purpose of providing telecommunication services;
- (b) “**Act**” means the Pakistan Telecommunication (Re-organization) Act, 1996 (XVII-1996);
- (c) “**Authority**” means the Pakistan Telecommunication Authority established under section 3 of the Act;
- (d) “**Carrier**” means operator that provides the services of call origination, termination or conveyance wholly or partially;
- (e) “**CDR**” means Call Data Records;
- (f) “**Connectable System**” means a licensed telecommunication system, whether or not a public switched network, the license for which authorizes its connection to another licensed system;
- (g) “**Interconnected Operator**” means an operator whose telecom system is interconnected with another (interconnecting) operator;
- (h) “**Interconnecting Operator**” means an operator who provides interconnection links to another (interconnected) operator’s network;

- (i) **“Interconnection”** means the physical and logical linking of telecommunications networks used by the same or a different operator in order to allow the users of one telecommunications network to communicate with the users of the same or another telecommunications network or to access services provided by a telecommunications network and the services may be provided by the parties involved or other parties who have access to the network. .
- (j) **“Interconnection Agreement”** means an agreement between two operators relating to interconnection services;
- (k) **“Interconnection Services”** means telecommunication services for the purpose of the conveyance of intelligence between two connectable systems including any ancillary services which an operator has requested from another operator and in respect of which that other operator is obliged to enter into an agreement with the operator to provide those services;
- (l) **“Licensed Telecommunication System”** means the telecommunication system for which a license has been granted in accordance with the provisions of the Act;
- (m) **“Local Loop”** means a communication channel, provided with or without a pair of wire(s), from a switching center to a customer’s telephone Terminal Equipment;
- (n) **“Operator”** means any person authorized by a license to run a connectable system;
- (o) **“Person”** shall include a company or a corporation;
- (p) **“Point of Interconnection (POI)”** means a point/place where two or more operators’ networks are interconnected;
- (q) **“Reference Interconnect Offer (RIO)”** means an offer document setting out the terms and conditions, under which the operator holding significant market power will permit interconnection to its network;
- (r) **“Requested Operator”** means an operator who receives a request in writing from another (requesting) operator for interconnection;
- (s) **“Requesting Operator”** means an operator who lodges a request in writing to another (requested) operator for interconnection;
- (t) **“SMP operator”** means an operator determined by the Authority as significant market power operator in accordance with the provisions of the Rules;
- (u) **“Telecommunication Service”** means a service consisting of emission, conveyance, switching or reception of any intelligence within, or into, or from, Pakistan by any electrical, electro-magnetic, electronic, optical or opto-electronic system, whether or not the intelligence is subjected to rearrangement, computation or any other process in the course of the service;

- (v) **“Unbundling”** means provision of services by an operator, separately from each other, in a way permitting access to only demanded network components including transmission, switching and interfaces.

3.2 Words and expressions used but not defined herein shall bear the meaning given thereto in the Act.

4. Objectives of Interconnection

4.1 Wasteful and uneconomic duplication of network facilities should be minimized.

4.2 Conditions for fair competition between the incumbent operator and new entrants should exist.

4.3 The users of one network can communicate with the users of other network.

5. Principles of Interconnection

5.1 All operators are obliged to provide interconnection to other operators desiring to interconnect. Interconnection shall be permitted at any technically and economically feasible point. In case the requesting operator requires access from any other point, he shall undertake the additional cost.

5.2 Interconnection and related services and facilities shall be provided on the basis of unbundled network elements and charged accordingly. A requesting operator shall only pay for the network components or facilities of the interconnection that it requires.

5.3 The operators shall not unfairly discriminate the terms of interconnection among different operators. An operator shall offer same interconnection terms to other operators as compared to his own similar operations or affiliates.

5.4 The interconnection terms of all operators, other than the terms of confidential nature as determined by the Authority, shall be open to access to all licensed operators.

5.5 Charges for interconnection services shall be cost-oriented.

5.6 The operator that causes a cost for interconnection services shall pay for that cost to the other operator when interconnecting.

5.7 Cost of inefficiencies of an operator should not be passed on to other operators through higher interconnection charges.

5.8 Interconnection arrangements should encourage efficient and sustainable competition.

5.9 Charges relating to USO and APC should be identified separately, and not bundled with interconnection charges.

6. Reference Interconnect Offer (RIO)

6.1 The operator with significant market power (SMP) is obliged to prepare and submit its RIO to the Authority within one month of its determination as SMP operator by the Authority. The SMP operator shall make the RIO publicly available within seven days after approval from the Authority.

6.2 The RIO shall include, as far as possible, the terms listed in Annexure- I to these Guidelines.

6.3 The Authority may decide amendments to be made in RIO considering the principles mentioned in these Guidelines.

6.4 The requesting operator may adopt RIO in full, or may request for some modifications subject to the approval of the Authority.

7. Request for Interconnection

7.1 All licensed operators shall have the right to interconnect with other licensed operators. The requesting operator shall submit its initial demand in writing to the requested operator. To facilitate planning by the requested operator, the following minimum information shall be provided in the request for interconnection:

- (a) Corporate name and credentials of the requesting operator;
- (b) The type(s) of service(s) for which license has been granted to the requesting operator, the license number and the date when license was issued;
- (c) The type(s) of service(s) for which interconnection is requested;
- (d) Required number and locations of POIs;
- (e) Physical nature of the link;
- (f) Housing aspects of the POI, i.e. location at the requested operator's switching center, or at the requesting operator's own facilities (building, power, etc);
- (g) Period for which interconnection is required;
- (h) Details of the requesting operator's technical interfaces, area(s) of operation and network architecture, which would include information such as the requesting operator's intention to lease lines or resell, or to provide its own transmission network;
- (i) Estimated traffic in Erlangs, type of signaling and other technical information;
- (j) Any other information, which the requesting operator considers important in planning by the requested operator or in facilitating the interconnection.

8. Response to the Interconnection Request

8.1 The requested operator shall meaningfully respond to the requesting operator in writing. The requested operator shall respond in different scenarios in the following manner:

- (a) In case of full acceptance of the interconnection request, the requested operator shall convey its acceptance within thirty days giving full detail of negotiation and implementation plan;
- (b) In case of partial acceptance, the requested operator shall intimate within twenty-one days showing its such willingness to interconnect alongwith details of issues and points requires to be negotiated.;
- (c) In case of denial of request, in entirety, the requested operator shall respond within fifteen days giving reasons for denial.

8.2 The request shall be deemed to have been accepted, if no response is received from the requested operator within thirty days of the submission of the request.

9. Denial of Request

9.1 The requested operator may deny an interconnection request only on the following grounds:

- (a) That the requested operator reasonably believes that the requesting operator will not comply with commercial terms of an interconnection agreement,
- (b) That the requested operator is unable to supply the interconnection as requested because it does not have sufficient capacity available,
- (c) That the requested operator reasonably believes that the interconnection request would pose a material risk to the safety and integrity of the telecommunication infrastructure of the requested operator,
- (d) That the interconnection request is not in the interest of users of the services,
- (e) That the interconnection request is not in the interest of the national security and sovereignty of Pakistan.

9.2 The requested operator shall communicate the reasons of denial to the requesting operator along with supporting facts. He shall also give the time-line to offer interconnection facilities to the requesting operator, where the denial is temporary.

9.3 If the requested operator denies the request partially or completely while the requesting operator feels that the request has been denied unreasonably, the requesting operator may approach the Authority for intervention. The Authority shall adjudicate the matter in the manner as prescribed in Interconnection Disputes Resolution Regulations, 2004.

10. Negotiation of Interconnection Arrangements

10.1 After receipt of an interconnection request, both parties shall mutually negotiate on interconnection terms and conditions, or adopt RIO, as the case may be. The negotiations shall be completed as soon as possible but not later than ninety days from the date of interconnection request.

11. Approval of the Authority

11.1 In case of acceptance of request by the requested operator, both the parties shall agree on a draft for the formal interconnect agreement. This interconnect agreement shall be submitted to the Authority within seven days of the signing of the interconnect agreement.

11.2 The Authority shall approve the draft interconnect agreement within sixty days from the date of its receipt.

11.3 The Authority may give regard to the following factors while approving the draft interconnect agreement:

- (a) The interconnect agreement is not in breach of the Act, the Rules, the Regulations, the Policy, these Guidelines, the terms of the operator's license, any relevant determination of the Authority and other relevant laws of Pakistan;
- (b) The interconnect agreement is consistent with the objectives of the Telecommunication Policy; and
- (c) The interconnect agreement is not materially detrimental to the interests of any other licensed operator and the users of telecommunication services.

11.4 Upon receipt of approval from the Authority the parties to the agreement shall sign the interconnect agreement duly prepared on the stamp paper and submit a certified copy to the Authority within seven days of signing the agreement.

11.5 In case the Authority do not approve the draft agreement, it shall inform the parties in writing within sixty days giving reasons for disapproval or detail of deficiencies. However, if the Authority does not formally notify the parties to the interconnect agreement of any deficiencies in the agreement within sixty days, the agreement shall be deemed approved.

11.6 The parties shall, after removal of deficiencies, provide the Authority with new interconnect agreement within fourteen days of the date when the Authority first notify such disapproval.

11.7 The interconnection shall be carried out as soon as possible but in any event, within thirty days from the date of approval of interconnect agreement by the Authority.

12. Amendments

12.1 The parties to an interconnect agreement already approved by the Authority may amend or modify such agreement by giving the Authority written notice thereof prior the amendment becomes effective. The notice shall accompany proposed amendments. If the Authority do not request additional information, suggest any changes or do not rule on the proposed amendment within twenty- one days of the receipt of notice, the amendment shall be deemed to be approved by the Authority.

12.2 Any modification to an interconnect agreement already signed, shall be mutually agreed between the parties and approved by the Authority. All such subsequent modifications shall not be inconsistent with the provisions of the Act, the Rules, the Regulations, the Policy, these Guidelines, Determinations and terms and conditions of the License.

12.3 The Authority may make amendments to the interconnect agreements through its determinations, if the interconnect agreements do not conform to the principles mentioned in these Guidelines.

13. Dispute Resolution

13.1 Where an operator alleges that the other operator has contravened or failed to comply with the provisions of the Act, the Rules, the Regulations, the License, these Guidelines or the Interconnect Agreement, then the Interconnection Disputes Resolution Regulations, 2004 shall apply.

14. Information Protection Obligation

14.1 Any proprietary information mutually acquired by the operators shall be treated as confidential, and shall not be disclosed by the operator acquiring the information to a third party without the prior written consent of the operator to whom that information belongs.

14.2 The operators shall provide the Authority with any information, which the Authority may require. The Authority shall publish all interconnect agreements submitted to it in such a manner as it may deem appropriate. However, the operators may request the Authority to keep confidential any information or any section of interconnect agreement, the disclosure of which would have the potential to seriously and prejudicially affect the operators. The decision to keep confidential any such information will be at the sole discretion of the Authority.

15. Notice of Change in Network

15.1 The operators shall notify, in advance, of any changes in its network that will have technical or commercial repercussions for the business of the other operator(s). The operators shall mutually negotiate the period of such notification and put in their interconnect agreement to ensure compliance.

16. Quality of Interconnection Services

16.1 The operators shall include in their interconnect agreements minimum standard services levels that reflect best practices and provide reasonable remedies for any failure to meet these service levels.

16.2 The traffic of the other operator shall not be discriminated in relation to other comparable traffic in the network of an operator.

16.3 In the event of equipment failure alternate routing shall be available in either party's networks.

16.4 The parties to an interconnection agreement shall comply with relevant standards of the ITU and such other technical standards as the Authority may determine from time to time.

16.5 To ensure efficient interconnection arrangements, the interconnecting operator and the interconnected operator shall not withhold information regarding standards and specifications on the grounds that these are proprietary.

16.6 The Authority shall further encourage the operators to establish technical committees to develop specifications, protocols, and procedures for the interconnection arrangements.

17. Fault Rectification

17.1 The parties shall mutually agree fault rectification mechanism. Each operator is responsible to advise its customers to report faults to its own Fault Rectification Center. In case fault report is received at an incorrect Fault Rectification Center, the party who first receives the complaint shall direct the fault report to the correct center.

17.2 While carrying out fault rectification the following considerations shall be kept in view:

- (a) Network faults will be given priority over individual faults.
- (b) Stand-by capacity shall be made available as soon as possible.
- (c) The parties will mutually cooperate to identify the nature and location of faults.

17.3 The parties shall keep each other informed about circuit restoration progress.

18. Interconnection Charges

18.1 Interconnection charges is a key factor in determining the structure and the intensity of competition in the liberalized market. Interconnection charges count for a very significant part of the costs of new entrants. The Authority, therefore, shall approve the level and structure of these charges.

18.2 The interconnection charges shall be based on the following principles:

(a) The structure of interconnection charges shall reflect the behavior 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 with usage. To the maximum possible extent, fixed costs shall be recovered through fixed charges while variable costs shall be recovered through a per unit charge related to the underlying activity. Moreover, peak and off-peak charges should be set where there is a significant difference in costs.

(b) Interconnection charges shall be set on objective criteria and follow the principle of transparency and cost orientation. The burden of proof that the charges are derived from relevant costs, including a reasonable rate of return on investment, shall lie with the operator providing interconnection to his network. The Authority has the right to demand full justification for the interconnection charges being demanded by the operator providing interconnection. The interconnecting operator may set and charge different rates, terms and conditions for providing interconnection for different categories of telecommunications services, where such differences can be objectively justified on the basis of the type of interconnection provided. The Authority shall ensure that such differences do not result in distortion of competition.

(c) Interconnection charges shall be sufficiently unbundled to ensure that an operator requesting interconnection is not required to pay for network elements or facilities not required for the service to be provided.

(d) Interconnection charges shall not include hidden cross-subsidies, particularly of anti-competitive nature.

(e) Interconnection charges shall include a fair share of joint and common costs and costs incurred in providing equal access and number portability, and of the cost of ensuring essential requirement.

18.3 The structure of interconnection charges should be based on the nature of services and facilities provided by the operators and the operator shall charge these services accordingly. Annexure- II sets out the structure of interconnection charges, which may be taken into account by the operators when setting charges for interconnection.

18.5 Interconnection charges that do not conform to these Guidelines may be varied by the Authority.

18.6 Where adequate cost information is not readily available, the Authority may establish interconnection charges on the basis of benchmarking.

19. Billing to End Users

19.1 Where it is agreed, one or more operators involved in establishment of a call may bill the originating or recipient subscriber. Where parties fail to agree on such

arrangements, the local-loop operator, being access provider, shall be responsible to bill and collect all charges from the customers.

19.2 The operator issuing the bill shall be responsible for collecting the full amount of the bill from the customer, and shall, thus, be liable to the other operator(s) for any bad debts.

20. Settlement of Accounts

20.1 The parties shall mutually agree on the data aggregation level and the timetable for exchange of CDRs. Each party shall raise an invoice of interconnection charges every month of its charges due from the other parties duly supported with the CDRs and other relevant information.

20.2 The other party shall examine the claim and arrange payment of undisputed portion of the net payable amount within ten days from receipt of the bill. The other party shall also communicate in writing the reasons for dispute along with relevant data within ten days from receipt of invoice. It shall, however, deposit the disputed portion of the net payable amount in a daily profit generating account designated as "Escrow Account". The disputed portion deposited along with the profit accrued thereon shall be released to the operator(s) within seven days of the resolution of dispute.

20.3 The parties shall mutually agree the procedure for resolution of their billing disputes. However, if the dispute remains unsettled for more than sixty days, the Authority may intervene on the request of the operator.

20.4 The parties shall make provisions in the interconnect agreement to allow for adjustment/refund for errors or calls of infirm quality arising from defective elements of the interconnected networks. The manner of adjustment shall be mutually agreed between the operators.

20.5 For efficient exchange of information the parties may agree to exchange mutual information through a reliable electronic means with appropriate authentication and acknowledgment procedures.

21. Point of Interconnections (POIs)

21.1 The POIs shall be located at any technically and economically feasible point. The requested operators shall provide the time-line for the provision of additional POIs to the requesting operator. Each operator shall be responsible for maintenance of POIs located in his network.

21.2 The Authority shall reserve the right to physically inspect any POI and lay down any technical standards, if required.

21.3 The Authority may carry out such inspection on its own, or (through notice) accompanied by either or both of the operators. The inspection may be random, periodic,

or by exception (for instance, in the case of degradation of network performance due to traffic congestion, etc.)

22. Leased Lines and Co-location

22.1 The requested operator shall provide leased lines of sufficient capacity to the requesting operator for the provision of interconnection. The charges for leased lines shall be cost-based.

22.2 The Authority may impose obligation on an operator with SMP to provide physical co-location on its premises for the equipment of other operator. The Authority may exempt the operator from this obligation, in case the operator prove that physical co-location is not necessary.

23. Number Portability and Carrier Selection

23.1 The Authority may impose obligations on operators to assure that users may keep the numbers assigned to them when they change their operators.

23.2 The Authority may impose obligations on operators to assure that users may select their carrier freely.

24. Force Majeure

24.1 Neither party shall be held responsible for any breach of an interconnection agreement, other than a breach for non-payment, caused by an act of God, war, fire, flood or civil disorder etc. The affected party shall immediately notify the details to other party under intimation to the Authority.

24.2 However, the parties shall not be relieved of their responsibility for their negligence to properly maintaining interconnection facilities.

TERMS OF INTERCONNECT AGREEMENT

The following terms should be included, as far as possible, in the Reference Interconnect Offer or interconnect agreements:

Interpretation

1. Recitals
2. Definitions of Key Terms

Scope of Interconnection

3. Description of Scope and Purpose of Interconnection

POIs and Interconnection Facilities

4. Points of Interconnection (POIs) and Related Facility Specifications
5. Signaling Interconnection

Network and Facility Changes

6. Planning and Forecasts
7. Facility Ordering Procedures

Traffic Measurement and Routing

8. Traffic Measurement Responsibilities and Procedures

Infrastructure Sharing and Co-Location

9. Sharing of Infrastructure, Procedure and Costs
10. Co-location

Billing

11. Scope of Billing Arrangements and Responsibilities
12. Billing Procedures
13. Payment Terms and Conditions
14. Billing Disputes and Reconciliation Procedures

Quality of Service/Performance and Trouble Reports

15. Quality of Service
16. Testing and Maintenance
17. Trouble Reports
18. System Protection and Safety Measures

Interchange and Treatment of Information

19. Data Interchange Format
20. Data to be Exchanged
21. Access to and Use of Customer Information
22. Access to and Use of Operator Information.

Equal Access and Customer Transfer

23. Equal Access Procedures

Ancillary Services

- 24. Operator-Assistance
- 25. Other Ancillary Services

Termination

- 26. Grounds for Termination and Restrictions
- 27. Termination Procedures

Other Provisions

- 28. Force Majeure
- 29. Assignment
- 30. Applicable Laws
- 31. Regulatory Approvals
- 32. Breach of Agreement
- 33. Legal Interpretation
- 34. Dispute Resolution
- 35. Term of Agreement
- 36. Amendments

STRUCTURE OF INTERCONNECTION CHARGES

Charges for interconnection may include, for instance:

1. Charges to cover the initial physical interconnection based on the costs of providing the specific interconnection requested, for instance, the provision of—
 - (a) specific equipment and resources; and
 - (b) compatibility testing;
2. Rental charges to cover the on-going use of equipment and resources (connection maintenance and so on);
3. Variable charges for ancillary and supplementary services, for instance,—
 - (a) access to directory services;
 - (b) operator assistance;
 - (c) data collection;
 - (d) charging;
 - (e) billing;
 - (f) switch-based services;
 - (g) advanced services;and so on;
4. Traffic related charges for the conveyance of traffic to and from the interconnected network, for instance, the costs of switching and transmission, which charges may be calculated on—
 - (a) a per minute basis;
 - (b) the basis of such additional network capacity as may be required; or
 - (c) both the basis referred to in sub-paragraphs (a) and (b);
5. A charge for each network component or facility provided to the interconnected party; and
6. A fair, proportionate share of—
 - (a) joint and common costs;
 - (b) the costs incurred in providing carrier pre-selection;
 - (c) the costs incurred in providing number portability; and
 - (d) the costs of ensuring—
 - (i) maintenance of network integrity;
 - (ii) network security in cases of emergency;
 - (iii) interoperability of services; and
 - (iv) protection of data.