Consultation Paper no. 22/2016

Telecom Regulatory Authority of India

Consultation Paper on
Review of the Regulatory Framework for Interconnection

New Delhi, 21.10.2016

Mahanagar Door Sanchar Bhawan,Jawahar Lal Nehru Marg,New Delhi – 110002

Stakeholders are requested to furnish their comments to the Advisor (Broadband and Policy Analysis), TRAI by 21.11.2016 and counter comments by 06.12.2016. Comments and counter-comments shall be posted on TRAI's website www.trai.gov.in. The comments/ counter-comments in electronic form may be sent by e-mail to interconnection.trai@gmail.com. For any clarification/ information, Shri Arvind Kumar, Advisor (BB&PA) may be contacted at Tel. No. +91-11-23220209 Fax: +91-11-23230056.

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Introduction and Background

A- Introduction

1.1. Interconnection is the lifeline of telecommunication services. The term 'interconnection' refers to the commercial and technical arrangement under which telecom service providers (TSPs) connect their equipment, networks and services to enable their subscribers to have access to the subscribers, services and networks of other TSPs.

1.2. Telecommunications networks are intrinsically different from other infrastructure like roads and power because of the network externalities involved. The value of the network to the existing subscribers increases as more subscribers join the network. Interconnection with other networks enhances this value as the number of people a subscriber of this network can call and the range of services it can access increases. Subscribers of telecommunication services cannot communicate with each other or connect with services they require unless necessary interconnection arrangements are in place. Therefore, availability of effective and expeditious interconnection plays an important role in the growth of the telecommunication services sector.

1.3. In order to ensure that interconnection arrangements are finalized in timely manner, a number of issues are required to be agreed upon by TSPs *or* determined by the sector regulator. When the sector regulator mandates a framework for interconnection, it has not only to ensure that the framework is efficient but also that the framework is able to adapt to the changing circumstances as outdated regulations run the risk of stifling market growth and innovation.

B- Regulatory Framework for Interconnection in India

1.4. In India, the regulatory framework for interconnection has been established by Telecom Regulatory Authority of India (hereinafter, referred to as, the Authority or TRAI). Some of the important regulations and directions issued

by the Authority on the matter of framework for interconnection are outlined below:

(1) The Register of Interconnect Agreements Regulations 1999

1.5. The Authority, in the year 1999, through 'The Register of Interconnect Agreements Regulations 1999' mandated all TSPs to register with the Authority any interconnect agreement to which they are parties.

(2) The Telecommunication Interconnection (Reference Interconnect Offer) Regulation, 2002

1.6. It is obvious that a new TSP would initially have small network and low subscriber base and would require interconnection with incumbents' networks in order to give proper service to its subscribers. However, incumbent TSPs, normally, do not want a new TSP to take advantage of their networks and provide competition to them. The incumbent TSPs may feel that commercial benefits of interconnection accrue principally to the smaller network: the latter's subscribers benefit more from the larger subscriber bases of the incumbent TSPs. The incumbent TSPs may, therefore, delay interconnection by way of prescribing one sided terms and conditions in the interconnection agreement, charging a high price etc. This may lead to protracted and costly negotiations between competing TSPs at the cost of efficient services to the consumers. Clearly, it is in the interest of consumers that effective and expeditious interconnections take place between TSPs. Most countries have formulated *ex-ante* regulatory guidelines for establishing proper environment to facilitate interconnection.

1.7. In many countries, Reference Interconnection Offer (RIO), a standard regulatory tool, is used to assist TSPs in arriving at fair and reasonable interconnection agreements. Any TSP, which is deemed to be in a position of Significant Market power (SMP) in a relevant market, is required to offer a RIO to other TSPs. The interconnection seeker may either accept the conditions offered in the RIO in full and enter into interconnection agreement with the interconnection provider or may negotiate on the basis of the RIO and subsequently execute an interconnection agreement depending on the result of negotiations.

1.8. In view of the need for effective and expeditious interconnection between TSPs, the Authority, in the year 2002, issued the Telecommunication Interconnection (Reference Interconnect Offer) Regulation, 2002. As per the Regulation, a TSP enjoying SMP status is required to submit its proposed RIO (describing, *inter-alia,* the technical and commercial conditions for interconnection based on the model RIO as annexed to the Regulation) to the Authority for approval and then publish the approved RIO on its web-site. Such RIO, thereafter, forms the basis of all interconnection agreements to be entered into by/ and with the issuer of the RIO. The Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002 also contains three Annexures containing (a) Explanatory memorandum to the regulation to explain the reasons for the issuance of the Regulation; (b) the model RIO; and (c) Guidelines.

1.9. Based on the stipulations contained in the Regulation, SMPs of that point of time viz. M/s Bharat Sanchar Nigam Ltd. (BSNL), M/s Mahanagar Telephone Nigam Ltd. (MTNL), M/s Videsh Sanchar Nigam Ltd. (VSNL) and other TSPs submitted their RIOs for approval of the Authority. On 09.10.2002, the Authority suggested 29 modifications in the draft RIO submitted by M/s BSNL and M/s MTNL and directed them to immediately publish their RIO after incorporating the suggested modifications.

1.10. M/s BSNL and M/s MTNL filed appeals (Appeal No. 11 & 12 of 2002) in Telecom Disputes Settlement & Appellate Tribunal (TDSAT) against modifications suggested by the Authority. Subsequently on 27.04.2005 Hon'ble TDSAT passed judgement in these appeals. In compliance to the Order of TDSAT, M/s BSNL and M/s MTNL published their RIOs on their web-sites. The option was also given to the TSPs, who had already signed interconnect agreements, to migrate to the RIO regime notified with effect from the date when such RIO is actually published.

1.11. Though TDSAT did not strike down the Telecommunication Interconnection (Reference Interconnect Offer) Regulation, 2002, it held that the Authority would remain bound by the terms and conditions of interconnectivity of the service providers as given in the licenses issued after the amendment to the Act in 2000. The TDSAT held that the Authority has power to change the

terms and conditions of interconnectivity of the licenses issued prior to the amendment of 2000 to the extent that these are in conformity with the terms and conditions of interconnectivity contained in the licenses issued after the amendment of 2000.

1.12. The Authority filed appeal in Hon'ble Supreme Court (Appeal No. 3298 of 2005) against the afore-mentioned Order of TDSAT; the matter is still pending before the Hon'ble Supreme Court. However, in another matter in Civil Appeal No. 5253 of 2010 dated 06.12.2013, the Hon'ble Supreme court held the following:

> *"In exercise of the power vested in it under Section 14(b) of the Act, TDSAT does not have the jurisdiction to entertain the challenge to the regulations framed by the Authority under Section 36 of the Act."*

1.13. Further, in the Unified License (UL), which is the most recent license, the licensor i.e. Department of Telecommunications (DoT) has put interconnection between TSPs under TRAI's regulatory framework of interconnection. Accordingly relevant clauses of the License have been amended. These clauses are reproduced below:

"27.3 Interconnection between the networks of different Licensees for carrying circuit switched traffic shall be as per national standards of CCS No.7 as amended from time to time by Telecom Engineering Centre (TEC) and also subject to technical feasibility and technical integrity of the Networks and shall be within the overall framework of interconnection regulations/ directions/ orders issued by the TRAI/ Licensor from time to time. For inter-networking between circuit switched and IP based network, the Licensee shall install Media Gateway Switch. Further, the Licensor may direct the LICENSEE to adopt any other technical standards issued by TEC on interconnection related issues.

27.4 Licensee shall interconnect with other Telecom Service Providers at the Points of Inter-connection (POI) subject to compliance of prevailing regulations, directions or determinations issued by TRAI. The charges for accessing other networks for internetwork calls shall conform to the Orders/ Regulations/ Guidelines issued by the TRAI/ Licensor from time to time. The Interconnection Agreements will, inter-alia, provide the following: (a) To meet all reasonable demand for the transmission and reception of messages

between the interconnected systems. (b) To establish and maintain such one or more Points of Interconnect as are reasonably required and are of sufficient capacity and in sufficient number to enable transmission and reception of the messages by means of the Applicable Systems, (c) To connect, and keep connected, to their Applicable Systems.

27.5 The charges for accessing other networks for inter-network calls shall be based on mutual agreements between the service providers conforming to the Orders/IUC Regulations/Guidelines issued by the TRAI from time to time.

27.6 The provision of any equipment and its installation for the purpose of Interconnection shall be subject to mutual agreement of the concerned parties and shall conform to TRAI's regulations and orders.

27.7 The Interconnection Tests for each and every interface with any Telecom Service Provider shall be carried out by mutual arrangement between the Licensee and the other party involved. In case of disagreement for rectification of deficiencies / deviations in conducted interconnection tests, reference could be made to Licensor / TRAI."

(3) Other Regulations and Direction on Interconnection

1.14. Apart from the afore-mentioned regulations, the Authority has also issued several directions/ determination/ decision/ regulations to ensure effective interconnection between TSPs. Some of the important directions/ determination/ decision/ regulations issued by the Authority are as follows:

(i) Determination dated 08.01.2001 on Interconnection;

(ii) Direction dated 07.06.2005 to provide interconnection to the interconnection seeker within 90 days of the applicable payments made by the interconnection seeker;

(iii) Telecom Regulatory Authority of India (Transit Charges for Bharat Sanchar Nigam Limited's CellOne Terminating Traffic) Regulation, 2005 dated 08.06.2005;

(iv) Intelligent Network Services in Multi Operator and Multi Network Scenario Regulations, 2006 dated 27.11.2006;

(v) Decision dated 05.12.2007 on Intelligent Network Services in Multi Operator Multi Service Scenario.

C- Need for Review of the Regulatory Framework for Interconnection

1.15. As mentioned before, through the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002, the Authority stipulated various technical and commercial conditions, following which a TSP could seek interconnection and agree upon specific charges and arrangements. The model RIO, which is generic in nature, brings forth various principles and elements involved in proper and effective interconnection; the Schedules of the Model RIO Agreement could be modified as per service requirement; mutually agreed charges and other items in the Annexes could also be added as per requirements. This inbuilt flexibility has enabled the TSPs to draft the interconnection agreements to suit mutual convenience within the overall laid down framework. However, the telecommunication service sector in the country has witnessed several economic and technological changes since 2002. A few of the developments in the sector are given below:

(i) Changes in the nature of telecom market - from pure State monopoly to intensely competitive market;

(ii) Emergence of mobile telephony as a primary means of communication and continuous decline in the number of wireline subscribers in the last decade;

(iii) Considerable increase in the number of NLDOs/ ILDOs;

(iv) Introduction of Unified Licensing (UL) regime;

(v) Technological changes leading to migration to next generation networks (NGN) and Internet Protocol (IP) networks; and

(vi) Expiry of telecom licenses of some TSPs and consequential need for renegotiation of interconnection agreements.

1.16. These developments have altered the nature and economics of telecommunication services sector as well as the strategy of market players and have, in several ways, influenced the scale and choice of investments in different types of technologies and services. Many of these developments impinge upon the matter of interconnection between TSPs. Some of the debatable issues related to the interconnection, as pointed out by TSPs, from time to time, include the following:

(i) All the interconnection agreements executed so far between TSPs have been finalised on the basis of mutual negotiations. Resultantly, despite prescription of a model RIO, no standard template for interconnection agreement, which should serve the ends of entire telecom services sector, has evolved so far.

(ii) In the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002, a TSP with SMP[1] was defined in terms of all the services offered by it including Basic, Cellular, NLD and ILD. However, the sector has undergone a significant change since then. Currently there are 7 to 10 TSPs in each License Service Area (LSA) with sufficiently well distributed subscriber base; about two third of wireless subscriber base in most LSAs is held by three TSPs together, with more or less equal distribution of subscribers. The Regulation requires publishing of RIO in respect of only SMPs. There is no provision in the Regulation governing interconnection between two TSPs, if both happen to be SMPs or both happen to be non SMPs. Further, there is lack of clarity in respect of those TSPs who subsequently become SMP or cease to be SMP.

(iii) Interconnection seekers have pointed out issues with regard to furnishing of bank guarantee and disputes in billing and payment. They have sought intervention of the Authority for settling issues related to the payment of outstanding dues, bank guarantees etc.

(iv) TSPs have also reported severe delays in setting up and augmenting the required number of E1 ports despite firm demand made by the interconnection seekers.

(v) Some interconnection providers have reportedly resorted to disconnection of E1 ports at some points of interconnection (POIs) on the basis of their own assessment of required number of E1 ports, without even consulting the interconnected parties.

1.17. In view of the above, the Authority issued a Pre-consultation Paper (PCP) on 14.10.2015 and sought the views of the TSPs on the following issues:

[1] A TSP shall be deemed to be an SMP, if it holds a share of at least 30% of the total 'activity' in a licensed telecommunication service area; these services are categorized as basic service, cellular mobile service, national long distance and international long distance service.

Question (a): In view of regulatory, market and technological changes during the last few years in telecommunication sector, is any review of existing regulations on interconnection called for with a view to make interconnection agreements more effective, non-discriminatory, fair and transparent? If yes, what kind of changes are required in interconnection regulation framework?

Question (b): Should TRAI notify/ prescribe a standardized interconnection agreement (default option) in those situations, where the two service providers fail to negotiate mutually agreed terms and conditions of interconnection within a specified time frame?

1.18. In response to the issues raised in the PCP, M/s BSNL submitted that it does not acknowledge regulatory, market and technological changes for any review of existing regulations on interconnection and all the interconnection agreements signed by them are effective, non-discriminatory, fair and transparent. M/s BSNL also submitted that there is no need to prescribe a standardized interconnection agreement and such a proposal from the Authority is an intrusive approach and it undermines the freedom of TSPs to enter into mutual negotiations and agreement with other TSPs in the matter of interconnection which has been referred to in the Licenses.

1.19. M/s MTNL submitted that any review of the existing interconnection regulations is not called for by the Authority at this stage and there is no need for prescribing a standard agreement as parties should be allowed to reach at a mutually beneficial conclusion in their interest after negotiations. M/s MTNL, further, submitted that the status of the incumbent TSPs as 'interconnection providers' should not be tinkered with; the right of public sector TSPs of securing their interest by seeking Bank Guarantees (BGs) from private TSPs should not be diluted in any manner.

1.20. On the other hand, many TSPs strongly favored for review of existing regulations. They submitted that a revised regulatory framework for interconnection is urgently required to bring fairness and reciprocity in the

terms and conditions of interconnection between all TSPs, including the public sector TSPs; the principle of fair, reasonable and non-discriminatory (FRAND) should be adopted in all matters related to interconnection between TSPs.

1.21. Several TSPs stated that the interconnection providers take considerable time in providing initial interconnection despite placement of firm demand by the interconnection seekers; the interconnection providers also make their own assessment about the number of ports required for initial and subsequent interconnection, leading to under-provisioning of interconnection facilities; the interconnection seekers have to follow up for long periods of time with the interconnection providers for provision of sufficient E1 ports as the interconnection providers often adopt delaying tactics in acceding to the demands made by the interconnection seekers.

1.22. Several TSPs brought out that incumbent TSPs have been unilaterally imposing additional costs in the form of reconnection charges, infrastructure charges, duct charges, insurance and similar charges under different headings. There appears to be no industry-wide uniformity or benchmarks for such charges but are determined on mutual negotiation/ agreement. Some incumbent TSPs insist that the bank guarantee for the payment of billed amount be submitted separately for each licensed service area (LSA) on gross billing of Interconnect Usage Charge (IUC) with specified minimum (fixed) amounts irrespective of volume or net flow of traffic on the POI.

1.23. A few TSPs have also reported about some interconnection providers using threat of disconnection of POIs for early payment of IUC bills etc. They have stated that, in practice, some incumbent TSPs do not take into account the billing records or call data records (CDRs) submitted by the interconnection seekers and always place reliance on their own records. They have requested for making the clause for settlement of wrong/ excess billing equitable and fair.

1.24. On the basis of the comments received from the TSPs on the PCP dated 14.10.2015, there appears to be a *prima facie* case for review of the regulatory framework for interconnection in the country.

D- The Present Consultation Paper

1.25. Through the present Consultation Paper (CP), the Authority is undertaking a review of the existing regulatory framework for interconnection with the ultimate objective of facilitating effective and expeditious interconnection between TSPs in a consultative manner. The following Chapter presents an analysis of key regulatory issues related to interconnection for the comments of the stakeholders. Chapter-III lists the issues for consultation.

Chapter-II

Analysis of Key Regulatory Issues Related to Interconnection

2.1. This Chapter presents an analysis of the present regulatory framework for interconnection agreement in the country and raises issues for consultation with the stakeholders.

A- Laying Down Fair, Reasonable and Non-Discriminatory Terms and Conditions for Interconnection Agreement

2.2. As outlined in Chapter-I of this CP, the Authority notified a detailed framework for interconnection through the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002 on 12.07.2002 after taking into account - (i) prevailing conditions in telecommunication services sector in the country at that time; (ii) the practices followed in other countries; and (iii) the views that emerged after a detailed consultation with the stakeholders. After the notification of this Regulation, private TSPs entered into agreements amongst themselves in accordance with the principles enunciated in the Regulation. However, owing to the pendency of the Appeals No. 11 & 12 of 2002 in TDSAT, the private TSPs had to enter into interconnection agreements with the public sector TSPs (M/s BSNL and M/s MTNL) on the terms and conditions offered by the public sector TSPs.

2.3. As discussed before, The telecommunication services sector has undergone significant regulatory, market and technological changes since the notification of the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002 and accordingly, there is a need to review this Regulation with a view to adapt to the changed circumstances.

2.4. First option could be to amend the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002 by way of appropriate addition/ modification/ deletion of provisions so that it can effectively work as a standard regulatory tool in the present scenario in arriving at fair, reasonable and non-discriminatory interconnection agreements amongst the TSPs.

2.5. Second option could be that the Authority prescribes a format for a 'Standard Interconnection Agreement' to be entered into by interconnecting TSPs in case TSPs are not able to mutually agree on terms and conditions of interconnection agreement between themselves in a specified time-frame.

2.6. Third option could be that the Authority prescribes only the broad guidelines based on FRAND principles and leaves the details of the interconnection agreement to be mutually decided by the interconnecting TSPs in a time-bound manner.

Issues for Consultation:

Q1: Which amongst the following is the best option to ensure fair, reasonable and non-discriminatory terms and conditions of interconnection agreement between telecom service providers (TSPs), in view of the technological, market, licensing, regulatory and legal developments in the telecommunication services sector in India since 2002?

(i) To amend the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002 taking into consideration the technological, market, licensing, regulatory and legal changes since the year 2002;

(ii) To prescribe a Standard Interconnection Agreement, which must be entered into between interconnecting TSPs, in case they are unable to mutually agree on terms and conditions of interconnection agreement between themselves in a specified time-frame;

(iii) To prescribe only the broad guidelines based on fair, reasonable and non-discriminatory principles and leave the details of the interconnection agreement to be mutually decided by the interconnecting TSPs in a time-bound manner; or

(iv) Any other method.

Please provide justification in support of your response.

Q2: Whether existing interconnection agreements should <u>also</u> be allowed to be migrated to the new framework which will come out as a result of this consultation process?

B- Time Frame for Execution of Interconnection Agreement

2.7. In the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002, no time-frame was specified for the interconnecting parties to enter into interconnection agreements. Many TSPs have stated that a time-frame must be specified to ensure expeditious interconnection. New TSPs have submitted to the Authority that it requires a lot of time to enter into interconnection agreements with the existing TSPs; existing TSPs tend to impose a number of terms and conditions which are non-reciprocal and discriminatory.

2.8. It has been observed that when interconnection agreements are not reached even after prolonged discussions and after spending unusually long time, many a time the new TSPs establish interconnection with existing TSPs without entering into formal interconnection agreements; such arrangements, however, do not work efficiently in long-run.

Issues for Consultation:

Q3: What should be the time-frame for entering into interconnection agreement when a new TSP with a valid telecom license places a request for interconnection to an existing TSP?

Q4: Which details should a new TSP furnish while placing request for entering into interconnection agreement? Please provide detailed justification in support of your response.

C- Need for Renewal of Interconnection Agreement Upon Expiry of old License and Onset of new License

2.9. In the past two years, many TSPs have acquired new licenses after expiry of their old licenses. These TSPs have contended that their interconnection agreements with the public sector TSPs were co-terminus with the earlier

licenses and, therefore, new interconnection agreements need to be entered into after expiry of the old license and onset of new licenses. They have, however, stated that even after several rounds of discussions with the public sector TSPs, they have not been able to finalize new agreements with them and traffic at the points of interconnection (POIs) is being exchanged without any formal agreement.

Issue for Consultation:

Q5: Should an interconnection agreement between TSPs continue to operate if an interconnecting TSP acquires a new license upon expiry of an old license? Alternatively, should fresh agreements be entered into upon specific request of either party to the interconnection?

D- The Concept of Significant Market Power (SMP)

2.10. The key features of the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002 with respect to its applicability are as follows:

(i) Only those TSPs, which hold SMPs in a relevant market, are required to publish their RIOs based on the Model RIO annexed with the Regulation.

(ii) The RIO will stipulate the concerned TSP's terms and conditions on which it agrees to interconnect its network with the network of any other TSP seeking interconnection.

(iii) The relevant market for reckoning SMP is licensed service area (LSA).

(iv) A TSP shall be deemed to be an SMP, if it holds a share of at least 30% of the total 'activity' in a licensed service area; these services are categorized as basic service, cellular mobile service, national long distance service and international long distance service.

(v) 'Activity' means and includes any one or more of the following:

(a) Subscriber base

(b) Turnover

(c) Switching Capacity

(d) Volume of Traffic

2.11. Going by the present definition of SMP, no TSP is likely to be reckoned as an SMP at present and, hence, no TSP would be liable to publish its RIO. In such a scenario, new TSPs would find it difficult to enter into interconnection arrangement with the incumbent TSPs.

2.12. Further, it requires to be deliberated as to whether the concept of SMP continues to be relevant in the present-day telecom services sector. One may argue that the principle of applicability of the Regulation on only SMP should be done away with; instead, all TSPs/ licensees should be mandated to publish their RIOs. On the other hand, one may contend that the applicability of the Regulation on SMPs has proven to be useful so far and, therefore, it should be retained.

2.13. In case, after the present consultation process, it is decided to retain the concept of SMP with respect to applicability of interconnection regulations, then the following provisions appear to be necessary to be included in the Regulation:

(i) A clear and unambiguous criteria for reckoning a TSP as an SMP should be laid down.

(ii) A provision should be included in order to mandate any TSP, who becomes SMP after the notification of the new Regulations, to submit its RIO for approval of the Authority and, thereafter, publish it on its web-site.

2.14. Internationally, most of the countries consider market share as one of the criteria to define SMP. However, there is no consensus on the amount of market share to qualify for SMP. Generally, the market share at which a TSP is considered to be a SMP is considered to range between 25% and 65%[2]. Under the current EC Directives, a TSP is presumed to be a SMP if it has more than 25% of a telecommunications market in the geographic area in which it is allowed to operate[3].

[2] Source: http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/Events2015/Malaysia/Presentations/Ses1_part1-2_Amine%20MCharek-SMP.pdf

[3] Source: https://stats.oecd.org/glossary/detail.asp?ID=6755

Issue for Consultation:

Q6: Whether it is appropriate to mandate only those TSPs who hold significant market power (SMP) in a licensed service area to publish their Reference Interconnect Offers (RIOs)? If yes, what should be the criteria for reckoning a TSP as SMP? If no, what could be the other approaches to streamline the process of interconnection in a fair, reasonable and non discriminatory manner?

E- The Concept of Interconnection Seeker/ Interconnection Provider

2.15. Through the Telecommunication Interconnection (Charges and Revenue Sharing) Regulation 1999, the Authority defined Interconnection Provider and Interconnection Seeker as below:

> *"Interconnection Provider" means the service provider to whose network an interconnection is sought for providing telecommunication services.*
>
> *"Interconnection Seeker" means the service provider who seeks interconnection to the network of the interconnection provider.*

2.16. It is further mentioned in 'The Telecommunication Interconnection (Port Charges) Regulation 2001' that this Regulation pertains to the port charges payable by the interconnection seeker to the interconnection provider for terminating the interconnection links on the network interface of the interconnection provider.

2.17. As an interconnection seeker, a TSP has to pay mainly the following charges to the interconnection provider:

a) **Setup cost** (Payable towards configuration, testing and commissioning of new PoI);

b) **Port Charges** (In accordance with the Telecommunication Interconnection (Port Charges) Regulation, 2001 as amended from time to time); and

c) **Infrastructure charges** (Cost of infrastructure provided by the interconnection provider i.e. leased line charges, collocation charges etc.)

2.18. Relevant clauses regarding interconnection seeker/ interconnection provider in the license agreements are reproduced below:

Clause 17.11 of Basic Services, Clause 17.9 of NLD license and Clause 17.10 of ILD license: *"The network resources including the cost of upgrading/ modifying interconnecting networks to meet the service requirements of service will be provided by service provider seeking interconnection. However mutually negotiated sharing arrangements for cost of upgrading/modifying interconnecting networks between the service providers shall be permitted".*

Clause 28.4 of CMTS license, Clause 27.3 of UASL and Clause 28.2 of UL: *"The network resources including the cost of upgrading / modifying interconnecting networks to meet the service requirements of the licensee will be mutually negotiated keeping in view of the orders and regulations issued by the TRAI from time to time."*

2.19. It may be noted that Basic, NLD and ILD licenses clearly mention that the cost of upgrading/ modifying interconnecting network to meet the service requirement of service should be borne by the TSPs seeking interconnection. However, In the CMTS License, UASL and UL, the onus is <u>not</u> on the TSPs seeking interconnection.

2.20. In the present interconnection agreements entered into by private TSPs with public sector TSPs, it appears that interconnection seeker would remain a seeker in perpetuity irrespective of the magnitude of traffic flow between the public sector TSP and private TSPs. On the other hand, in the interconnection agreements between private TSPs, the interconnection seeker remains seeker for only two years, beyond which, the cost of interconnection is shared between both parties to the interconnection.

2.21. Clause 12.3.2 of the Model RIO stipulates that *"Two years after the initial interconnection is established, the issue as to who bears the cost of additional resources required shall be negotiated between the service providers. The general principle followed in these negotiations is that each party should bear the incremental costs incurred for the additional ports required for meeting the QoS standards relating to its outgoing traffic to the other Party."*

2.22. In view of the position explained above, there seems to be a need to review the concept of interconnection seeker/ provider specifically with respect to the time period from the date of establishment of initial interconnection, when the sharing of cost for additional resources should start.

2.23. It may be noted that the Port Charges, which are governed by the Telecommunication Interconnection (Port Charges) Regulation, 2001 are also to be paid by interconnection seekers to interconnection providers. In case the concept of interconnection seeker/ interconnection provider is not reviewed and the interconnection seeker is required to pay the port charges in perpetuity, then a situation may emerge where a TSP may hesitate in requesting for interconnection to avoid becoming interconnection seeker in perpetuity and this may affect the Quality of Service (QoS). During the pre-consultation process, most TSPs submitted that the cost of upgrading and modifying interconnecting networks should be shared by both interconnection seeker as well as interconnection provider as both are getting benefits of interconnection. On the other hand, M/s BSNL and M/s MTNL have argued against changing their present arrangement.

Issue for Consultation:

Q7: Whether there is a need to continue with the present concept of interconnection seeker/ interconnection provider? If yes, what should be the criteria?

F- Levels of Interconnection

2.24. The levels of interconnection are mentioned in the Guidelines annexed to the Regulation. These levels of interconnection were taken from the various licenses issued by the Licensor to the TSPs, from time to time. In view of the technological changes in the telecommunication services sector and gradual migration of access networks towards NGN/ IP networks, handing over of interconnection traffic may be feasible at other locations, thereby leading to savings for both the parties to interconnection. Alternative levels of interconnection may, thus, have to be explored and, if found feasible, the same may appropriately find a mention in the interconnection agreements.

Issues for Consultation:

Q8: Whether there is any need to review the level of interconnection as mentioned in the Guidelines annexed to the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002? If yes, please suggest changes alongwith justification.

Q9: In case interconnection for Inter-circle calls to fixed-line network continues to remain at Short Distance Charging Area (SDCA), should alternate level of interconnection be specified in cases of technical non-feasibility (TNF) at SDCA level?

G- Time Period for Initial Provision and Augmentation of E1 Ports

2.25. Earlier, when direct connectivity between TSPs was not permitted and interconnection was sought only from fixed-line networks, maximum time-period of 90 days (of applicable payments made by the interconnection seeker) for initial provisioning/ augmentation of E1 ports was considered to be appropriate in view of the limitations associated with the legacy networks and the constraints of public sector TSPs in augmenting their networks. However, presently, most of the interconnection is being sought from mobile TSPs, which have state-of-the-art networks and, therefore, much smaller time-period for provisioning/ augmentation of E1s appears to be reasonable.

2.26. It was pointed out by some TSPs in the pre-consultation process that the time period of 90 days start from the date of making payment against a demand note issued by the interconnection provider against a firm demand made by interconnection seeker, but the interconnection providers, in many cases, do not raise the demand note for very long periods and, therefore, the maximum time-period of 90 days for provisioning/ augmenting E1 ports become infructuous. On the other hand, some interconnection providers has reported that, at times, interconnection seekers tend to place unreasonable demands for provisioning/ augmentation of E1 ports, which becomes difficult to meet in short periods of time.

Issues for Consultation:

Q10: What should be the framework to ensure timely provisioning/ augmentation of E1 ports? Please provide full framework with timelines including the following aspects:

(a) Minimum number of E1 ports for start of service;

(b) Maximum time period for issuance of demand note by the interconnection provider;

(c) Maximum time period for payment for demanded E1 ports by the interconnection seeker;

(d) Intimation of provisioning of requested E1 ports by interconnection provider;

(e) Space allocation for collocation of transmission equipment;

(f) Maximum time period for establishment of transmission links by the interconnection seeker;

(g) Maximum time period for acceptance testing;

(h) Maximum time period for issuance of final commissioning letter by the interconnection provider; and

(i) Maximum time period for start of traffic in the POI after provisioning/ augmentation of E1 ports for which payment has already been made.

Q11: Whether augmentation of ports be allowed at higher levels such as STM-1 in place of E1?

Q12: What should be the criteria to ensure that inflated demand for ports is not made by interconnection seeker?

Q13: In case the interconnection seeker agrees to bear the total cost of equipment required for augmentation in advance, should the interconnection provider give the requested ports irrespective of volume of traffic at POI?

Q14: Should separate time periods for provisioning of ports be prescribed for (i) fixed-line networks and (ii) mobile/ IP networks?

Q15: Whether financial disincentive should be imposed on TSPs for-
(a) not entering into interconnection agreement within a stipulated timeframe;
(b) not providing initial POI;
(c) not augmenting POI within stipulated timeframe;
(d) for violation of any clause prescribed in the regulations.
If yes, what should be the amount of such financial disincentives?

H- Provision of Bank Guarantee and Penal Interest in Case of Delayed IUC Payment

2.27. During the pre-consultation process, many private TSPs submitted that as per the existing provisions in the interconnect agreement, the bank guarantee to be furnished by the private TSPs to M/s BSNL and M/s MTNL for the first year varies from Rs. 5 lakh to Rs. 1 crore (depending upon LSA) and, thereafter, the bank guarantee is equal to the average of three months' bill issued during the previous year for the LSA. They have also stated that, earlier, there used to be no provision of bank guarantee between private TSPs; however, now some private TSPs have started demanding for bank guarantee from other private TSPs.

2.28. Several TSPs also submitted that in the existing interconnect agreements with M/s BSNL and M/s MTNL, there are provisions for penal interest on delayed IUC payments; moreover, M/s BSNL and M/s MTNL do not take into account the billing records or call data records (CDRs) submitted by private TSPs and place reliance on their own records only.

2.29. Some private TSPs submitted that bank guarantees on interconnection should be eliminated or, at least, should be made on net-off basis and any such payment should be reciprocal. They also submitted that the clause for settlement of wrong/ excess billing should be equitable, transparent and fair.

Issues for Consultation:

Q16: Whether there is a need to have bank guarantee in the interconnection agreement? If yes, what should be the basis for the determining the amount of the bank guarantee?

Q17: What should be the method to settle Interconnection Usage Charges and how should the delayed payment between TSPs be handled?

I- Type of Traffic on a POI

2.30. As per the existing terms of the interconnection agreement, the full mobility, limited mobility and fixed-line network of UASL have separate POIs with the public sector TSPs. Such POIs are treated independently for all purposes, including setup costs, port charges etc. During the pre-consultation process, some TSPs submitted that after their migration to Unified License regime, there is a need for making changes in the interconnection agreement so that any infrastructure taken under one license should be allowed to be shared with the same licensee who has authorisation to provide other services also.

2.31. Besides, it has come to the notice of the Authority that the existing TSPs tend to impose conditions on the type of traffic which the interconnecting TSPs can send to them.

Issues for Consultation:

Q18: Whether interconnection and interconnection agreement should be service-specific or service-agnostic (i.e. a TSP can send any type of traffic on a point of interconnection which is allowed under the terms and conditions of the license given to it)? What are the advantages/ disadvantages of having service specific POIs when the TSPs are equipped with call data record (CDR) based billing systems?

Q19: If POIs are merged together, what methods of discovery, prevention and penalization of any traffic manipulation by TSPs (whereby

higher IUC traffic is recorded as lower IUC traffic in the CDR of the originating TSP) should be put in place?

J- Interconnection at IP Level

2.32. Most TSPs in India have implemented IP-based core transport network for carrying voice and data traffic, by deploying IP/ Ethernet elements extending into access and aggregation networks. It is an undisputed fact that IP networks can handle traffic more efficiently as compared to the legacy networks. Apparently, there is a need to establish appropriate policy and regulatory framework for Interconnection at IP level.

Issue for Consultation:

Q20: Which policy and regulatory measures are required to be taken to encourage TSPs to migrate to Interconnection at IP level? What should be the terms and conditions for inter-connection at IP level?

K- Interconnect Exchange

2.33. With a view to solve problem of interconnection and ensure effective interconnection, one option could be to establish an Interconnect Exchange. The Interconnect Exchange will provide interconnection ports to all variety of TSPs and, in turn, it will reduce the number of POIs. Under such a scenario, the existing peer-to-peer interconnection may continue as before; however, all new augmentation of ports may be mandated to be done through Interconnect Exchange. Options could be explored to create a new licensee as has been done in case of mobile number portability (MNP) to operate Interconnect Exchange.

2.34. It is worth pointing out that the latest NLD authorization in the UL permits an NLDO to carry intra-circle (local) traffic upon mutual agreement with a TSP. This enables an NLDO to act as a transit provider and potentially many NLDOs can establish Interconnect Exchanges.

Issues for Consultation:

Q21: Whether there is a need to establish a framework for Interconnect Exchange to eliminate bilateral interconnection issues?

Q22: Is there any need for a separate framework for Interconnect Exchanges in view of the fact that the new NLDO authorization permits transit traffic to be carried over by NLDO?

Q23: Whether access providers should be allowed to transit intra-circle calls?

L- Disconnections of POIs

2.35. It has also been observed that TSPs, unilaterally, disconnect PoIs in certain circumstances resulting in blockage of services to consumers, based on their own interpretation of terms and conditions for non-payment of dues etc. Subsequently the interconnection seekers have to resort to court proceedings, injunctions etc. with TDSAT to restore services.

Issue for Consultation:

Q24: Under what circumstances, a TSP can disconnect POIs? What procedure should be followed before disconnection of POI?

M- Coordination Committee

2.36. Seeking and providing interconnection is an ongoing process; issues related to interconnection keep surfacing up at various stages, even when formal interconnection agreements between TSPs are in place. Therefore, there may be a need to have a coordination committee to facilitate effective and expeditious interconnection.

Issue for Consultation:

Q25: Is there a need to have a coordination committee to facilitate effective and expeditious interconnection between TSPs? If yes, who should be the members of the co-ordination committee? What should be the overall operating framework for the committee?

N- Other Issues Related to Review of the Regulatory Framework for Interconnection

2.37. While a review of regulatory framework for Interconnection is being undertaken, it is important that any issue which may have a bearing on effective and expeditious interconnection between TSPs is not ignored.

Issue for Consultation:

Q26: Is there any other relevant issue which should be considered in the present consultation on the review of regulatory framework for Interconnection?

2.38. The following chapter lists the issues for consultation.

Chapter-III
Issues for Consultation

It may please be noted that answers/ comments to the issues given below should be supported with justification. The stakeholders may also comment on any other issues related to review of regulatory framework for interconnection along with all necessary details.

Q1: Which amongst the following is the best option to ensure fair, reasonable and non-discriminatory terms and conditions of interconnection agreement between telecom service providers (TSPs), in view of the technological, market, licensing, regulatory and legal developments in the telecommunication services sector in India since 2002?

(i) To amend the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002 taking into consideration the technological, market, licensing, regulatory and legal changes since the year 2002;

(ii) To prescribe a Standard Interconnection Agreement, which must be entered into between interconnecting TSPs, in case they are unable to mutually agree on terms and conditions of interconnection agreement between themselves in a specified time-frame;

(iii) To prescribe only the broad guidelines based on fair, reasonable and non-discriminatory principles and leave the details of the interconnection agreement to be mutually decided by the interconnecting TSPs in a time-bound manner; or

(iv) Any other method.

Please provide justification in support of your response.

Q2: Whether existing interconnection agreements should also be allowed to be migrated to the new framework which will come out as a result of this consultation process?

Q3: What should be the time-frame for entering into interconnection agreement when a new TSP with a valid telecom license places a request for interconnection to an existing TSP?

Q4: Which details should a new TSP furnish while placing request for entering into interconnection agreement? Please provide detailed justification in support of your response.

Q5: Should an interconnection agreement between TSPs continue to operate if an interconnecting TSP acquires a new license upon expiry of an old license? Alternatively, should fresh agreements be entered into upon specific request of either party to the interconnection?

Q6: Whether it is appropriate to mandate only those TSPs who hold significant market power (SMP) in a licensed service area to publish their Reference Interconnect Offers (RIOs)? If yes, what should be the criteria for reckoning a TSP as SMP? If no, what could be the other approaches to streamline the process of interconnection in a fair, reasonable and non discriminatory manner?

Q7: Whether there is a need to continue with the present concept of interconnection seeker/ interconnection provider? If yes, what should be the criteria?

Q8: Whether there is any need to review the level of interconnection as mentioned in the Guidelines annexed to the Telecommunication Interconnection (Reference Interconnection Offer) Regulation, 2002? If yes, please suggest changes alongwith justification.

Q9: In case interconnection for Inter-circle calls to fixed-line network continues to remain at Short Distance Charging Area (SDCA), should alternate level of interconnection be specified in cases of technical non-feasibility (TNF) at SDCA level?

Q10: What should be the framework to ensure timely provisioning/ augmentation of E1 ports? Please provide full framework with timelines including the following aspects:

(a) Minimum number of E1 ports for start of service;

(b) Maximum time period for issuance of demand note by the interconnection provider;

(c) Maximum time period for payment for demanded E1 ports by the interconnection seeker;

(d) Intimation of provisioning of requested E1 ports by interconnection provider;

(e) Space allocation for collocation of transmission equipment;

(f) Maximum time period for establishment of transmission links by the interconnection seeker;

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Q26: Is there any other relevant issue which should be considered in the present consultation on the review of regulatory framework for Interconnection?

Acronyms

S. No.	Acronym	Expansion
1	BG	Bank Guarantee
2	BSNL	Bharat Sanchar Nigam Limited
3	CDR	Call Data Record
4	CMSP	Cellular Mobile Service Provider
5	DoT	Department of Telecommunications
6	FRAND	Fair, Reasonable and Non-discriminatory
7	GSM	Global System for Mobile Communication
8	IN	Intelligent Network
9	ILD/ILDO	International Long Distance/International Long Distance Operator
10	IP	Internet Protocol
11	IUC	Interconnection Usage Charge
12	LSA	Licensed Service Area
13	MNP	Mobile Number Portability
14	MPLS	Multi Protocol Label Switching
15	MTNL	Mahanagar Telephone Nigam Ltd.
16	NGN	New Generation Network
17	NLD/NLDO	National Long Distance /National Long Distance Operator
18	PCP	Pre-Consultation Paper
19	POI	Point of Interconnection
20	PSU	Public Sector Undertaking
21	QoS	Quality of Service
22	RIO	Reference Interconnect Offer
23	SDCA	Short Distance Charging Area
24	SMP	Significant Market Power
25	STM-1	Synchronous Transport Module level-1
26	TDSAT	Telecom Disputes Settlement & Appellate Tribunal
27	TEC	Telecommunication Engineering Center
28	TNF	Technically Not Feasible
29	TRAI	Telecom Regulatory Authority of India
30	TSP	Telecom Service Provider
31	UASL	Unified Access Service License
32	UL	Unified License
33	VSNL	Videsh Sanchar Nigam Limited