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Dated: 12th December 2016

To,

Shri Arvind Kumar,
Advisor (Broadband & Policy Analysis),
Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan
J.L. Nehru Marg, Old Minto Road
New Delhi - 110002

Subject: Airtel's Response to TRAI's Consultation Paper on Review of the
Regulatory Framework for Interconnection.

Dear Sir,

This is with reference to your above mentioned consultation paper. In this regard,
please find enclosed our response for your kind consideration.

Thanking You

Yours Sincerely
for Bharti Airtel Limited

A handwritten signature in blue ink, appearing to read 'Ravi P. Gandhi', with a horizontal line underneath.

Ravi P. Gandhi
Chief Regulatory Officer

encl.: as stated above

Bharti Airtel's Response to TRAI's Consultation Paper on "Review of the Regulatory Framework for Interconnection"

At the outset, we would like to thank the Authority for bringing out an important paper covering all the facets of interconnection. As rightly observed by the Authority that "Interconnection is the lifeline of telecommunication services", the regulatory framework around this should not only be efficient but also provide commercial flexibility.

The Interconnection regime in India is more than 20 years old. The first draft Reference Interconnect Regulation (RIO) issued in 2002 by TRAI comprehensively dealt with the major facets of interconnection with the aim to enable smooth interconnection amongst TSPs. The said RIO regulation has also been the guiding regulation since 2002 and has been reflected in the mutual agreements signed between operators other than MTNL/BSNL.

Since 2002, a lot of advancement has taken place with respect to technologies, devices, regulatory, licensing and market conditions, but despite that the interconnection process between the private operators has moved smoothly. There are very few disputes/litigations between the private operators as many of the issues have been resolved by the operators themselves. Any litigations that have arisen were between public and private operators since the public operators had not followed reciprocity practices. The public operators have always mandated one-sided terms and conditions (including the levying of charges), which have been highlighted by the private operators and brought to the Authority's attention from time to time.

The current consultation highlights the need to ensure fair, reasonable and non-discriminatory terms and conditions relating to interconnection between TSPs and we strongly believe it will culminate in the resolution of a long overdue execution of the interconnection agreement with BSNL/MTNL post the renewal of several licenses which expired during 2014 to 2016.

We recommend that the interconnect regulation should involve a broad framework based on principles that are fair, reasonable, reciprocal, and non-discriminatory and provide necessary flexibility to the interconnecting operators to mutually decide and agree upon the terms and conditions of the agreement, including the selection of technologies.

In light of the above, please find below our question-wise response.

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.

Bharti Airtel's Response:

The Reference Interconnect Regulation (RIO) issued by TRAI in 2002, has comprehensively dealt with the major facets of interconnection with the aim to enable smooth interconnection amongst TSPs. The basic framework, as contained in the RIO Regulation, has been largely embraced by all private operators in their interconnection arrangements. The RIO Regulation has been crafted to offer transparent and unambiguous terms of interconnection and has approached the subject in sufficient detail.

Although the present RIO regulation is limited to service providers with SMP, it has served as a guide for all operators by providing them with a basic structure for interconnection. In order to be able to maintain cordial business relationships amongst themselves, the TSPs have the opportunity to negotiate their own terms and conditions.

While the objective of the said Regulation has been achieved efficaciously by private operators, it has not yielded the desired results when it comes to the terms of interconnection with BSNL and MTNL, who have been dictating terms of interconnection that are non-reciprocal and skewed in their favour. In this regard, it can be assumed that no amendment to the RIO will serve any purpose, till the same is accepted and followed by public sector operators as well.

The second option, i.e., the crafting of a Standard Interconnection Agreement (which can be entered into by interconnecting TSPs in case they are unable to mutually agree on the terms and conditions of the interconnection agreement within a specified time-frame) will defeat the purpose of interconnection agreements. This is because the telecommunication networks are dynamic and a lot of factors are involved, which are specific to the operator's network and are required to be suitably captured in the agreement, both technically and commercially. Any standard contract will, therefore, curb the TSPs' flexibility with respect to mutual negotiation and innovation.

The third option is prescribing broad guidelines based on **fair, reasonable and non-discriminatory (FRAND)** principles and leaving the details of the interconnection agreement to be mutually decided by the interconnecting TSPs in a time-bound manner. We

believe this would be the best option as it allows flexibility and innovation while still falling within the broad framework.

For an efficacious interconnection, it is imperative that the interconnection framework should be non-discriminatory, promote mutuality and reciprocity and facilitate expeditious interconnection with licensed operators. Further, it should lay down the binding framework with respect to:

- Cost liability of the interconnection seeker towards interconnection charges at the time of initial connectivity and, subsequently, for any changes in the Provider's network occasioned due to changes in technology/equipment by the Seeker.
- Technical guidelines for simplified connectivity for various services with minimized points of interconnection.
- Non-compliance to the terms of the Interconnect Agreements.

We recommend that the Authority should prescribe broad guidelines based on fair, reasonable and non-discriminatory principles and leaving the commercial and technical details of the interconnection agreement to be mutually decided by the interconnecting TSPs.

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?

Bharti Airtel's Response:

Interconnection agreements between TSPs, except for those with BSNL/MTNL, are mutually signed and have functioned well for many years. We, therefore, believe that the migration to a new framework, which is based on fairness and reciprocity, should be mandated for BSNL/ MTNL.

Further, it is recommended that for all other interconnect agreements which have been entered into mutually, there should be no mandatory migration, and any migration to a new agreement should be as per the terms of the mutual agreement.

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?

Bharti Airtel's Response:

We recommend a time-frame of 90 days, as prescribed in the RIO regulation. We believe that this has been generally followed by all operators.

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.

Bharti Airtel's Response:

A new TSP (Interconnect Seeker) should provide the following details while entering into an interconnect agreement:

1. Details of the services for which interconnection is sought, such as:
 - Fixed line Termination
 - Mobile Termination
 - Internet telephony Termination
 - Fixed/mobile intra circle carriage
 - Inter circle carriage
 - Internet telephony carriage
 - International Long Distance
 - Toll free services
 - SMS/MMS
2. Proposed connectivity for each of the services for which interconnection is sought, including the details of the nodes/places where interconnection is required (along with network diagrams for proposed connectivity for each services) by the Seeker.
3. Interconnecting technology, for example, TDM/IP, SMPP, ISUP, etc.
4. Capacities sought for interconnection along with appropriate justification. The Seeker should provide due justification for the interconnection capacities sought, as consequential capacity augmentation, both for the interconnection ports and other network elements, is required to be done by the Provider.
5. Tentative date by which the capacity is required.
6. Tentative date of the launch of commercial services, in case of a new operator.
7. Details of transport media such as satellite, Microwave, PDH, SDH, DWDM, ATM, etc.
8. License authorizations available with the Seeker.
9. The KYC documents of the Seeker.

All the above information is essential for enabling the Provider to conduct proper due diligence before entering into an interconnect agreement with the Seeker and, hence, should be a prerequisite for any Seeker approaching a Provider for interconnection.

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?

Bharti Airtel's Response:

If both the interconnecting parties declare, in writing, to continue with the same terms and conditions of interconnection, then the agreement may continue. But if any party seeks a review, a fresh agreement may be drawn up keeping in view the current scenario, services, network, market dynamics and network architecture.

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?

Bharti Airtel's Response:

The RIO Regulation, in its current form, applies to service providers with significant market power and has mandated the publication of RIO by SMPs based on the framework specified therein. Therefore, the model RIO and guidelines issued under the RIO Regulation of 2002 merely specifies the framework for all interconnection agreements to be entered into by/with the SMP. This concept of the SMP should be done away with and the scope of the Regulation should be widened to include all operators licensed under Section 4 for providing PSTN services. The intent of the Interconnection regulation should be to enable compliance with License conditions of mandatory interconnection. This purpose will only be effectively achieved if the regulation is uniformly applied to all licensed operators.

It is therefore recommended that the concept of SMP should be done away with and any 'Interconnection Provider', whether SMP or not, should have an RIO. The seeker should either sign off the RIO on an "as is" basis or negotiate with the provider to sign the RIO.

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

Bharti Airtel's Response:

The retention of the Interconnection Seeker/Provider is advisable for the reasons specified below:

1. To define the fundamentals of the costs of interconnection:

- The Provider operator will have to create capacities in its own network for the Seeker in the initial phase of interconnection. The creation of these capacities has cost implications for the Provider. Therefore, it should be borne by the Seeker for a pre-defined period, which is mutually agreed upon by both the Parties.
- Further, the Seeker may use a different technology from that used by the Provider. Hence, the Provider may have to modify its network to facilitate interconnection on the technology of the Seeker. This concept will help shift the responsibility towards the Seeker for bearing the cost of such technology changes.
- The concept of the Seeker and Provider will also have relevance if the Seeker deploys/introduces technology which requires modification in the Provider's network, for which the Seeker should have to bear the cost.

2. The Interconnection Seeker/Provider is required to provide due clarity to the operators for ensuring non-discriminatory agreements:

- Since it is opined above that while executing a fresh interconnect agreement, the Provider's RIO should prevail in order to avoid any conflicts/unnecessary delays in the execution of the ICA, it is imperative that the concept of Seeker/Provider be retained so that both the interconnecting parties are able to reach a mutual agreement quickly.
- The present regulation requires agreements to be non-discriminatory. For such agreements to be in place, a Provider should be non-discriminatory and the Seeker should conform to the Provider's terms and conditions. If the concept of Provider/Seeker is eliminated, then a uniform and non-discriminatory agreement will not be possible. For example, if the RIOs of operators A and B are different, then operator C will not be considered non-discriminatory if it signs the RIO of operator A and operator B. Therefore, in order to have non-discriminatory agreements, the concept of the Seeker and Provider is required.

3. The Interconnection Seeker/ Provider concept is prevalent worldwide:

- The concept of the Provider and Seeker is inherent to the interconnection regime. A study of the interconnection regime worldwide indicates that the same is followed almost uniformly across the regions given below.
- For instance, all the OECD countries, viz., Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, and United States have the Seeker/Provider concept.

(Source: <https://www.oecd.org/sti/ieconomy/1894706.pdf>)

We, therefore, believe that the concept of Interconnection Seeker/Provider should continue.

However, we suggest that the definitions of “**Interconnection Provider**” and “**Interconnection Seeker**” be clarified. As per The Telecommunication Interconnection (Reference Interconnect Offer) Regulation, 2002 the concept of the Interconnection Provider and Interconnection Seeker needs to be refined for better clarity. The revised definition is given below:

- “**Interconnection Provider**” means an existing licensed operator in whose network interconnection is sought by a new licensed operator/entrant for the provision of telecommunication services.
- “**Interconnection Seeker**” means a new licensed operator/entrant who is seeking interconnection with the existing licensed operator.

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 along with justification.

Bharti Airtel’s Response:

As per the terms of clause 4 of the Reference Interconnect Offer – Guidelines, TRAI has specified the points/levels of interconnection for various PSTN to PSTN (outgoing) traffic, PSTN to PSTN (incoming) traffic and PLMN to PSTN traffic. It has outlined the possible types of interconnections contained in the said tables. The said levels of PoIs need to be simplified. There should not be any multi-layered or complex levels of handover of traffic as the RIO guidelines designed in 2002 were largely structured to accommodate the hierarchical technical network of BSNL/MTNL and should be done away with.

For instance, as per the guidelines annexed to the Reference Interconnection Offer Regulation, 2002, intra-circle calls from mobile to fixed line network can either be handed over at Level I TAX for both transit to other LDCAs for termination in the LDCA in which it is located or at Level II TAX for traffic terminating in the destination LDCA. This restriction forces the mobile operator to pay a mandatory carriage charge to BSNL and, hence, needs to be modified.

With respect to the above, we would like to submit:

- As per the present IUC regime, the terminating operator is entitled to the termination charge for calls terminating in its network. The regime envisages the principle that the originating network has the choice to either directly terminate the call in the terminating

network or route the call via the carrier operator for further termination into the terminating network.

- The choice shall lie solely with the originating operator. However, as a deviation from the above principle, BSNL has declared their L-II TAX as the terminating point for calls originating in the private operators' mobile network for termination in their fixed line network. Having declared L-II TAX as the terminating point, ideally, it should be BSNL's responsibility to carry the call further to the terminating SDCA without any additional charges. However, BSNL has been consistently charging private operators under the guise of transit carriage charges, which is completely unjustifiable because of the following reasons:
 - ✓ They do not provide direct PoIs at their fixed line switches and have declared their LDCC TAX (L2 TAX) as the only point of termination of calls from mobile networks to their fixed line network.
 - ✓ In many circles, the transit charges are payable despite the fact that the L2 Tax and the fixed line switch are connected.
 - ✓ The originating operator, i.e., the Mobile operator, is denied the rightful flexibility to choose a carrier, which leads to mandatory payment of carriage charges to BSNL.
- Therefore, we believe the Authority should regulate this element by mandating the operators:
 - ✓ To provide connectivity at all '**declared termination points**' in their network.
 - ✓ BSNL should declare their fixed line switches (MSUs) as a point of termination.
 - ✓ To bear the cost of carriage within their own network, i.e., from the '**declared termination point**' (L2 TAX) to the actual point of termination (Fixed Line Switch).
- All fixed line operators should provide mobile operators with direct interconnection to their fixed line/tandem switches.
- In case they are not able to provide direct connectivity, they should bear the responsibility of carrying the calls in their network and should not charge mobile operators for the same.
- The fixed line switched declared by BSNL should be at the location of a district or LDCA and mobile operators should not be forced to directly connect at the rural/SDCA level.

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?

Bharti Airtel's Response:

- In case of technical non-feasibility at the SDCA level for inter-circle calls to fixed-line network, the operator may declare alternate level/exchange as the terminating point for calls destined to the particular SDCA. It should be the terminating operator's responsibility to carry the call further to the terminating SDCA without any additional charges.
- Intra-network carriage charge in the network of the terminating operator should be subsumed into the termination charge. Further, with zero termination charge for fixed line, the carriage and transit within the network of the fixed line operator should also be made zero. Any mandatory carriage charge for fixed line is tantamount to an increase in the termination charge from zero.

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.

Bharti Airtel's Response:

We recommend that the framework to ensure timely provisioning/augmentation of ports should be process-oriented, as per the submissions below:

1. Demand to be placed by the Seeker along with justification in terms of traffic:

It is important that the demand placed by the Seeker is substantiated with data and has reasonable projections because the provision of ports not only requires augmenting the capacity at the interconnection ports but also in the access network. Since the Seeker is only compensating the Provider for the cost of interconnection capacity accruing to its traffic, substantial investments made in the network for handling the additional traffic will go waste if the demand/projections are wrong/unjustified.

2. Due diligence of demand by Provider:

This is important, considering the fact that the Provider has an existing network, which may require expansion and other changes to accommodate the Seeker's demand. Therefore, the due diligence of the demand by the Provider along with the historical trends and data corroborated by the Seeker's demand is an important step in the process, failing which every Seeker will start to demand an exorbitant number of PoIs and the Provider would have to invest in creating needless capacities.

3. Initial E1s for the pre-launch phase to be limited to 1-2 E1s:

In case of a new entrant, the initial capacities for the pre-launch phase may be limited to 1-2 E1s as it is expected that the same is required for testing the interconnectivity between the networks with all other stress testing being conducted by the new entrant in its own network.

4. Demand note to be issued by the Seeker:

Post ascertaining the genuineness of demand by the Seeker, the demand note needs to be issued as per the agreed terms and timelines.

5. Payment to be made by the Seeker:

The Seeker shall be required to make payments as per the demand note issued and within the specified timelines.

6. Location for establishing PoIs and provisioning media to be intimated by the Provider:

Location details need to be intimated to the Seeker with the defined timelines to enable the Seeker to manage proper planning and arrangement.

7. Provision for space, power, and infrastructure:

If the agreement provides for space, power and infrastructure to be provided to the Seeker, the feasibility for space allocation, power, etc., needs to be checked by the Provider within a specified time frame. In case of it is found to be unfeasible, the Seeker should be required to make alternate arrangements within a defined time frame.

8. Time frame for allocation of E1s against the reasonable demands of the Seeker:

While keeping the above principles in mind, while creating a framework, the appropriate timelines for the issues raised by the Authority are as follows:

S No	Issue	Response
(a)	Minimum number of E1 ports for start of service	Testing phase 1 - 2 E1s for testing the services
(b)	Maximum time period for issuance of demand note by the interconnection provider	The provider should provide a demand note within 30 days of the seeker's justified demand. For an unjustified demand, it should reject the demand within 30 days.
(c)	Maximum time period for the payment for demanded E1 ports by the interconnection seeker	1 week
(d)	Intimation of provisioning of requested E1 ports by interconnection provider	2 weeks from the receipt of payment by the interconnection seeker
(e)	Space allocation for collocation of transmission equipment	Provider to convey the feasibility for Space including its allocation within 30 days from payment by the interconnection seeker
(f)	Maximum time period for establishment of transmission links by the interconnection seeker	60 days from the date of payment by the interconnection seeker
(g)	Maximum time period for acceptance testing	75 days from the date of payment by the interconnection seeker
(h)	Maximum time period for issuance of final commissioning letter by the interconnection provider	90 days from the date of payment by the interconnection seeker
(i)	Maximum time period for start of traffic in the POI after provisioning/augmentation of E1 ports, for which payment has already been made	90 days from the date of payment by the interconnection seeker

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

Bharti Airtel's Response:

The augmentation at STM-1 or other levels should be mutually agreed upon by the Parties instead of being mandated. The decision should be based on traffic measurements, cost implications and other relevant parameters as the provision of STM-1 will require a technical upgradation as well as technical feasibility, which involves investment of cost and time on the behalf of the provider.

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

Bharti Airtel's Response:

The following submissions are important before we define any criteria:

- It has been experienced that the interconnection seeker, due to its ambitious projections tends to project inflated demands and, in the ambit of the agreement, will push for the augmentation of all the E1s irrespective of their current utilization levels.
- Catering to such an inflated demand would be a costly affair, and might also lead to the creation of superfluous capacities at the port, radio and switch level as well as other wasteful investments that are significantly higher than the interconnecting equipment.
- This tendency has increased with the reduction in port charges. Because there are no charges levied on ports after two years, the seeker might be induced to raise a demand for an unreasonable number of ports.

For the aforementioned reasons, we recommend that it should be the responsibility of the interconnection seeker to justify the demand from a technical and commercial standpoint for the ports and it should be up to the provider to agree to the calculations given by the interconnection seeker.

Further, such inflated demand for ports may lead to two scenarios:

- **Actual traffic being less than the projections, leading to wasteful investments:**

If the provider is not convinced about the demands made by the seeker but the seeker still insists on demanding the same, then there should be a provision wherein the seeker should commit to compensating the provider not only for the loss of IUC but also for the additional costs incurred with respect to the interconnecting infrastructure as well as the access network, in case the projections are proven inaccurate.

- **Actual traffic highly imbalanced due to promotional offers:**

- It is worth mentioning that the current IUC has been mandated by TRAI considering reasonably symmetric traffic (with a traffic imbalance of 5-15%) and has provisioned that the terminating operator will be compensated against incremental cost of termination instead of the full cost.
- In case the seeker demands inflated interconnection capacity for its promotional offers, whereby such offers lead to an indiscriminately imbalanced traffic, then it implies that the provider's outgoing traffic is being converted into its incoming traffic resulting in under-recovery to the tune of approximately 30 paise (as current outgoing realization is approximately 45-50 paise per min as compared to the 14 paise per minute termination charge).

- There should be a provision in the agreement that in case no reasonable efforts are made by the Seeker to balance out its traffic within a specified time period, the Seeker should compensate the Provider for the full cost of termination and not just the incremental cost.

Therefore, it is recommended that the demand for the number of ports should be technically and commercially justified and the calculation for the same should be mutually agreed upon between the seeker and the provider. In no case should the seeker have an unfettered privilege to make any unjustified demand or to place the provider under an undesirable obligation to provide ports.

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?

Bharti Airtel's Response:

The total cost of equipment include both the CAPEX & OPEX cost of:

- BTS, BSC & MSC
- Spectrum
- Transmission Links
- Interconnection Ports
- Passive infrastructure such as tower, etc.

The Interconnection Seeker pays only the port charges, and that too, for a period of two years. Further, the IUC is paid on actual traffic, which is also less than the actual cost. If the traffic is less than the demanded capacity, the provider's cost of deploying the additional network will go to waste.

Therefore, the provision of ports has to be justifiable and on the basis of reasonable traffic projections corroborated with actual traffic.

Due to the aforesaid reasons, we do not foresee any justification in the provision of the requested ports to the Seeker, irrespective of the volume of traffic at the PoI.

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

Bharti Airtel's Response:

Interconnection happens on the core network, whether it is fixed line or mobile/IP network and, hence, there is no justification for separate time periods for the provision of ports based on technology. We therefore recommend similar time periods for provisioning of ports irrespective of the type of network.

- 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?**

Bharti Airtel's Response:

Entering into an agreement, the provision of the initial PoI, the augmentation of PoIs and adherence to the clauses prescribed in the regulations involves continuous efforts at the ground level by both the seeker and the provider, which makes it very difficult to ascertain the cause of delay in the actual agreement/augmentation scenario.

It would, therefore, be frivolous, unfair and unjust to impose a penalty on the interconnection provider, in light of their provision of quality services to customers. The provider cannot be unilaterally held responsible as interconnection involves two networks. Any action for non-compliance should only be on the defaulting party, after proper investigation.

- 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?**

Bharti Airtel's Response:

The need for bank guarantees (BGs) arises in order to securitize the payment. Even the licensor follows this practice for ensuring the performance of the operators as well as to securitize their payments for LFs and SUC.

Hence, it is important to have bank guarantees in place for securitizing the services provided by the terminating operator to the originating operator. Securitizing payments is a part of the business process and should not be brought into the ambit of the regulatory framework.

With the introduction of the Unified Licensing regime, entry into and exit from the telecom market has become easy. The recent examples witnessed by the industry are Loop Mobile, Etisalat, STel and many others who did not pay their interconnect charges while exiting the business.

A regulation should not increase the risk of other operators; the operators should have the freedom to securitize their dues. Hence, it is recommended that the Regulatory Framework should support the operators who are diligently providing their services to customers as well as to the other seekers, by making BG an integral part of the agreement and by not restricting the amount of BGs.

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

Bharti Airtel's Response:

We believe that the method to settle Interconnection Usage Charges should be left to the mutual agreement between the operators on the terms of their interconnect agreement.

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?

Bharti Airtel's Response:

The interconnection agreements necessitate that this should be service-specific, with the agreements clearly identifying the services, viz., mobile call termination, fixed line call termination, limited mobility call termination, national long distance call termination, international long distance call termination, etc. for the following reasons:

- While the License may permit offering a wide range of services, the Interconnect Agreement should only be made service-specific for the services which are mutually agreed upon by the Parties.
- Interconnection for different services, as specified in the license, involves different technical and commercial aspects and, thus, a service-specific Interconnect Agreement would help with the same.
- The Interconnect Agreement includes the charges incurred on the setup of an interconnecting network (Network Level Charges), which include port charges, media, setup charges, etc. This is applicable irrespective of the technologies used, whether OFC, Copper, SDH, PDH, TDM, or IP. These charges vary as per the applicable setup/interconnection scenario and, hence, there can be no standard agreement that covers all scenarios. The charges are required to be agreed upon, on a case-by-case basis.
- The IUC (Service Level Charges) such as termination charge, carriage charge, and origination charge, for various services such as mobile, fixed line, SMS, Internet Telephony, toll free are dependent upon the IUC regime (CPP in the present case) and the level of extant regulations.
- Termination charges vary with the type of services offered and a separate charge need to be agreed for each of the services.

- Further, the framework/charges for all services may not be defined in the IUC regulation, but may instead be negotiated in the interconnect agreement as per the requirement.
- While the change in technology from TDM to IP/NGN may change the Network Level Charges, it would not affect the IUC regime and, hence, the IUC charges need to be agreed upon separately for each service irrespective of the underlying technology. Therefore, a service agnostic interconnect agreement is not possible.

Since, it is recommended to have service specific interconnect agreements, the same arguments also extend to having separate PoIs/TGs for separate services. The type of traffic an operator hands over to another at the PoI depends upon the terms of the agreement. An operator may have a PoI with other operator at a designated location, however, the Trunk Groups (TGs) are to be kept separate for different services to ensure that only the traffic from services meant for a particular trunk group is handed over.

In reference to the fact that TSPs are equipped with CDR-based billing, we would like to submit that:

- While TSPs are equipped with a CDR-based billing system, a unified PoI with no demarcation would induce the operators to tamper with the CLIs, which may camouflage with the CLI meant for other services, leading to a loss to the terminating operator. In such a situation, the operator will have no means to check and block such traffic.
- The TG acts as a first-level check and, therefore, CDR-based billing, acts as a second-level check. The two together ensure that only the traffic with proper CLI and meant for a particular TG is sent to the concerned PoI.

Thus, it is very important to have separate TGs/PoIs for separate services to ensure that no operator resorts to toll bypass.

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?

Bharti Airtel's Response:

- As explained in the response to Q18, PoIs/TGs should continue to be service-specific to avoid their misuse.
- While an operator may have a PoI with another operator at a designated location, the Trunk Groups ought to be kept separate service-wise to ensure that only the traffic from services meant for a particular trunk group is handed over.

- Further, each service may have different terms/delivery methods. So it should continue to be governed by the mutual agreements and it should not be mandatory to merge POIs together.

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?

Bharti Airtel's Response:

In view of TRAI's earlier recommendations, the licenses have already been amended to allow for IP interconnection among the operators along with circuit-switched based interconnection.

We believe that the choice of technology for interconnection should be left to mutual negotiations between the operators. An operator's choice of technology depends upon the prevailing technological ecosystem, which is changing very dynamically. All over the world, regulators have moved towards technology neutrality. In India, technology neutrality is enshrined in the NTP-2012/NTP-99 and the existing UAS/CMTS/UL Licenses. The mandatory deployment of a particular technology would be **contrary to the principles enshrined in the National Telecom Policy and license agreements**. Therefore, IP interconnection should be left to mutual agreements between operators.

A majority of the present interconnecting links are on TDM technology, wherein huge investments have been made. With practically no growth in voice traffic, there are very few new links, which are being added. Therefore migration to IP interconnection would lead to the redundancy of the presently deployed networks, which have a residual life of 5-10 years. Hence, any regulation towards compulsory IP interconnection will result in the unnecessary **writing off of the existing assets without any corresponding techno-economic benefit to the existing operators**.

A migration to IP interconnection will also result in a **very huge cost burden for the operators** as it will involve deploying network elements such as Media Gateways, signaling gateways/soft switches, Session Border Controllers (SBCs) and the supporting transport network, etc.

The prevailing technology ecosystem is changing very dynamically, making it difficult to predict the emergence of new advanced technologies. The investments made for the building of IP networks may become redundant in the future in case of the emergence of new network technologies. Therefore, a preference for any technology **will place restrictions on the flexibility of the operators to choose the most suitable technology** and may result in sub-optimal usage of the infrastructure.

TSPs in India are at various stages of migration to IP-based networks, depending upon the aging of the existing networks and the requirement for new deployments. Therefore, we believe that **both TDM and IP interconnection will co-exist at this stage** and that the

operators should have a choice in the migration to IP-based network interconnection. The high competitiveness among the operators will naturally drive migration to the IP-based network, if it is technically and economically prudent. Historically, SS7 and R2MF based PoIs co-existed for many years before the techno-economic benefit of SS7 motivated all TSPs to migrate to SS7.

In light of the above submissions, we are of the view that it should be left to the operators to plan their migration to IP-based interconnection on the basis of network rollout plans, techno-commercial feasibility and development of the ecosystem, such as transport and switches. Further, we believe that the existing interconnection regime and the rules governing interconnection should continue, irrespective of the interconnecting technology, to be the basis for all network roll-outs.

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

Bharti Airtel's Response:

We are of the view that there is no need to set up an Interconnect exchange for the interconnectivity of various operators for the reasons listed below:

- Direct peering, both for TDM as well as for IP technology, is the only economical option at the high volume presently being handled by the PoIs. This is quite evident from the fact that operators have established peer to peer connectivity, instead of using any kind of transit/interconnecting points, not only for TDM connectivity but also for IP connectivity. Therefore, the option of exchanging traffic only through interconnection exchange should be ruled out at the very outset.
- Presently, operators are connected via PoIs in several cities and towns. PoI locations are presently based on low-cost routing. For example, if both Airtel's and Vodafone's MSCs are located in Kanpur, then direct local PoIs will be established between the two operators instead of interconnecting at some other PoI location, such as in Lucknow or Delhi. This helps save on bandwidth cost, which is a major portion of overall interconnection costs.
- The introduction of the interconnect exchange will also entail redesigning the transmission network for the PoI traffic, which again involves additional costs and huge write-offs.
- The interconnect exchange will result in additional transit points, thereby introducing another element of cost to the provision of services. The failure of the interconnect exchange would bring down the entire telecom network.
- Operators have already established their interconnection; therefore, connectivity through interconnect exchange will be a cost burden for them. At this stage, because of the well-connected networks in India, we do not consider interconnect exchange to be a

technically and commercially viable option. It would only lead to additional costs related to switching and transiting.

- The failure of such additional switching/transit points is evident from the fact that despite BSNL providing an indirect path/transit facility to terminate calls into their mobile network via their L1 TAX as an interconnection exchange/transit switch, almost all private operators have stopped using that facility due to the additional cost of switching. Therefore, the fate of the interconnect exchange on a voluntary basis, if established by any operator, is known to us in advance. A mandatory interconnect exchange would only lead to additional costs for the entire industry and, hence, to the customers.
- Even TRAI in its Direction on “Direct connectivity between networks of Service Providers”, vide File No. 101-13/2003-MN, 22nd July 2003, has acknowledged that transiting the traffic entails avoidable costs and accordingly justified the need for direct connectivity in the following words:

*2. Need for **Direct connectivity**:*

*Transiting traffic between service providers in the same service area entails avoidable transit charges that are eventually passed on to the consumer by the service provider in the form of higher tariffs. Further, even from traffic engineering point of view this carriage may not be desirable especially in situations when the subscriber numbers are likely to grow. It would not be techno-economically viable for a large amount of traffic to follow the transit route unnecessarily. In order to estimate such traffic, data was also called for to have a considered opinion on the justification of **direct connectivity** between BSNL Cellular and other Pvt. CMSPs. From the data obtained, it was observed that the data justifies **direct connectivity** amongst service providers in most of the areas. The Authority is therefore, of the opinion that **direct** interconnection should be mandated. Even otherwise, the TRAI's IUC Regulation 2003 does not have a provision of any transit traffic between operators within the same service area*

For the aforesaid reasons, we believe there is no need to establish a framework for Interconnect Exchange.

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?

Bharti Airtel's Response:

As indicated in response to Q21, we are of the view that there is no need to establish a framework for Interconnect Exchange.

Further, we would like to submit that the NLDO authorization does not permit transit traffic to be carried over by the NLDO. In this regard we have the following submission:

- The clause which allows carriage of intra circle traffic in the Unified License – Access Authorization is as below:

2.2 Licensee may carry intra-circle long distance traffic on its network. However, subject to technical feasibility, the subscriber of the intra-circle long distance calls, shall be given choice to use the network of another Licensee in the same service area, wherever possible. The Licensee may also enter into mutual agreements with other UL Licensee (with authorization for access service)/other Access service licensee/National Long Distance Licensee for carrying its intra-Circle Long Distance traffic

- The present clause in the Unified License – National Long Distance Authorization is as below:

2.1 (a) The NLD Service Licensee shall have the right to carry inter-circle switched bearer telecommunication traffic over its national long distance network. The Licensee may also carry intra-circle switched traffic where such carriage is with mutual agreement with originating access service provider.

- This clause is similar to the clause present in the scope of the earlier National Long Distance License which stated as below:

2.2 (a) The NLD Service refers to the carriage of switched bearer telecommunications service over a long distance and NLD Service Licensee will have a right to carry inter circle traffic excluding intra -circle traffic except where such carriage is with mutual agreement with originating service provider.

The above clause clearly shows that there is no material difference between the clause as defined in UL (NLD) and NLD License

- Reference is drawn to clarifications issued by DoT vide its letters dated 16th July 2007 (Letter enclosed as Annexure - I), which stated as below:

Provision of carriage of intra circle traffic under Clause 2.2(a) of the NLD License is barely to enable the access providers to use the network of NLDOs, if they so require, for carriage of their traffic in their network from one station to another. This clause does not confer any right on the NLDOs to carry any intra-circle long distance traffic

- With the combined reading of all the clauses and clarifications, the following conclusions can be drawn:

- The NLDO is not allowed to carry transit intra-circle traffic, i.e., intra circle traffic originating from one operator and terminating in the other operator's network, on the strength of the scope defined in its License agreement.
- The Originating Access service provider can use an NLDO to terminate its own intra-circle traffic.
- The NLDO, to terminate transit traffic must have an agreement with both the originating and terminating service providers.

In light of the above, it is clear that the NLDOs are not authorized to carry transit intra-circle traffic on the strength of their license and hence are not allowed to establish an interconnect exchange for this purpose.

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

Bharti Airtel's Response:

Yes, access service providers are already allowed to transit intra-circle calls but subject to the agreement between the originating and terminating operators as deliberated in the response to Q22.

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

Bharti Airtel's Response:

We believe that the disconnection of PoIs is an extreme step, which is only taken by an operator when there is a gross breach of the mutually agreed upon interconnection agreement by the other operator. We believe that the disconnection of PoIs is justified under the following circumstances:

1. Bypassing of traffic:

This implies traffic which is meant to be handed over at a designated PoI is being handed over at PoIs meant for other services, primarily to pay lower termination/carriage charges. In principle, there should be no toll bypass while handing over traffic:

- Mobile traffic at PoIs meant for fixed line traffic
- International Long Distance Calls at PoIs meant for National Long Distance or Local Calls
- International toll free as domestic toll free

In case the interconnecting operator intentionally hands over the traffic in an unauthorised manner despite being given a notice, disconnection may be resorted to.

2. Transit of traffic through a third party:

- Presently, the operators agree on the traffic that each party is supposed to hand over.
- In case the interconnecting operator hands over its traffic to the interconnecting partner via some other operator without its consent, it would be tantamount to a violation of the interconnect agreement and the affected interconnecting partner may resort to the disconnection of the PoI.

3. Calls without CLI/ Incorrect CLI/ Tampered CLI:

CLI acts as a check to the kind of calls being handed over at PoIs. Further, the license also mandates proper CLI to be sent over the network. In case no CLI calls or camouflaged CLI is being resorted to by the interconnecting partner to handover non-designated/agreed traffic at the PoI, the other interconnecting partner should have the right to disconnect.

4. Non-payment of IUC:

The interconnecting operator is required to pay as per the agreed terms for handing over traffic at PoIs for termination and carriage. In case of non-receipt of payment as per the agreed terms of interconnection, disconnection may be resorted to.

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?

Bharti Airtel's Response:

We believe that interconnection is not a new phenomenon and does not need any pilot testing. Operators have been engaging in mutual terms of agreements without assistance or intervention from any external committees for a long time now. Thus, two decades having gone by, the basic tenets of the terms of interconnection have already been cemented.

Furthermore, interconnection can be expeditiously executed only with the mutual support of both the operators and their applied resources at the ground level, thereby making the requirement of a coordination committee redundant.

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

Bharti Airtel's Response:

Although interconnection between private operators is running smoothly, the interconnection agreements between private operators and BSNL/MTNL require a comprehensive review since the terms of the same are onerous and one-sided.

Despite interconnection being for the benefit of both parties, the technical and commercial obligations envisaged in the Interconnect Agreement with BSNL/MTNL rest solely on the private operators. To be specific, the charges under reference are:

<p>Emergency Service charges</p>	<p>Emergency services are those that are availed in situations of distress. It is required that these services are facilitated through the least impeded routes and not commercialized by BSNL/MTNL by the levying of charges that are higher than the standard interconnection charges.</p> <p>Currently, the charges levied by BSNL and MTNL are:</p> <p>MTNL levies a charge of Rs.1.20 per minute for emergency service traffic handed over to them by private TSPs in Delhi and Mumbai.</p> <p>BSNL collects an annual lump-sum in each LSA over and above the applicable IUC for such traffic on a “per-minute basis”. The lump-sum regime was introduced by BSNL in 2010 to replace the “per minute” charging regime akin to MTNL (i.e., Rs.1.20/min). The lump-sum was initially fixed at Rs.10 lacs p.a. for the entire service area with an annual increment, which was later defined as 10% vide BSNL’s circular. Consequently, the lump-sum has escalated year-on-year since 2010-11 to Rs.16.10 lacs + service tax for FY 2015-16 in each LSA.</p> <p>These charges are not only unreasonable and exorbitant but are unjustified since the legacy of BSNL/MTNL’s resources being deployed for emergency services by the organizations, i.e., police, ambulance, etc., has compelled operators to use their network.</p> <p>In this regard, it is proposed that TRAI should:</p> <ul style="list-style-type: none"> - Notify that no other charges for emergency services will be levied by BSNL/MTNL except the applicable IUC. - Intervene and direct BSNL/MTNL to allow operators to directly route and terminate the traffic to the respective organizations providing emergency services.
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Infrastructure Charges	BSNL has been unilaterally specifying the rates of the infrastructure charges and increasing them without any justification and/or consultation with the private operators. For example, the recent revision in infrastructure changes by BSNL circular dated 12.06.2012, in which they attempted to apply the increased charges retrospectively from 2009. The issue was challenged before the TDSAT and the Court in its order dated 14.10.2014 directed prospective implementation but BSNL, vide another Circular dated 30.03.2015, has sought to prescribe Infrastructure charges at the same rate as would be achieved by retrospectively applying Circular dated 12.06.2012, thereby seeking to indirectly achieve the same objective that it could not achieve because of the TDSAT order.
PoI Shifting Charges	BSNL levies the following charges for PoI shifting: <ul style="list-style-type: none"> a) Surrender Charges at existing PoI equivalent to one full year's port charges b) Fresh Port Charges for new PoI for an equivalent number of E1s c) Set Up Charges
Surrender Charges	BSNL also applies charges for the surrender of any existing PoI at the rates equivalent to one full year's port charges. While on one hand the application of such charges is unwarranted, the situation is further worsened by BSNL applying these charges from the date of its approval for surrender rather than the date of application of the private operator for surrender.

TDSAT in its Judgments has also emphasized the need for fairness and mutuality in the interconnection arrangements. The relevant portion of the Judgments is as under:

- i) Appeal No.148 of 2005, BPL vs. MTNL, TDSAT Order dated 19.3.2007 Appeal No.218 of 2006, Reliance vs. MTNL, TDSAT Order dated 19.3.2007:

"In order to ensure that there is a semblance of fairness and reasonability and Respondent is not tempted to adopt an arbitrary approach in this regard as it has done in the matter presently before us, we request TRAI who at one point of time had intervened in this matter to lay down guidelines at the earliest to ensure that the fixation of such charges by service providers including MTNL is not done arbitrarily and is based on use of sound criteria and reasonable rationale and based on a realistic assessment of the commercial rentals prevailing in the market. To the extent that this infrastructure is also utilized by the Respondent for its outgoing traffic, TRAI may also see to what extent the costs need to be shared by the Respondent."

- ii) TDSAT, in Petition No. 48 of 2004, has pronounced judgment in favour of the private operators, allowing them to charge interest from BSNL on a reciprocal basis. The relevant portion of the TDSAT Judgment highlighting the same is as follows:

“The petitioners have pointed out that large amounts of bills are not paid in time by the respondents and when paid after considerable delay there is no payment of interest whereas an interest of 24% per annum compounded quarterly is charged from them on their dues. We direct that this should be on reciprocal basis. Both parties are directed to enter into agreement regarding the rate of interest which will be applicable for both the parties on reciprocal basis.”

All the above has explicitly highlighted the need to bring level playing terms in the interconnection arrangements with BSNL/MTNL so that they are reflective of the much sought-after balanced interconnection structure.

Therefore, considering the existing anomalies in the BSNL/MTNL interconnection agreements, we request TRAI to take cognizance of the same and make necessary changes in the framework to pave the way for effective interconnection arrangements. The interconnection being maintained is for the mutual benefit of both the Parties and the RIO, thus, requires a change to make the provisions mandatory for a balanced interconnection approach.

In the light of the above submissions, we request the Authority to kindly effect the necessary amendments/clarifications in the RIO regulation to make it more effective and rational.

(1123)

Government of India
Ministry of Communications & IT
Department of Telecommunications
Sanchar Bhawan, 20 Ashoka Road, New Delhi-1.
(Carrier Services Cell)

No 10-21/2006-BS-1

Dated: 16-7-2007

To

M/s Reliance Communications Ltd.
15th Floor, Vijaya Building,
17th Barakhamba Road,
Connaught Place, New Delhi-110001.

(Kind Atten. Shri D. Singh, President)

Subject: Carriage of Intra-circle traffic by NLDOs.

Kindly refer to your letter No. RCS/DoT /06-07/0714 dated 20.4.2007 on the above subject.

The matter has been examined. It is to inform you that provision for carriage of intra circle traffic under Clause 2.2(a) of the NLD license is barely to enable the access providers to use the network of NLDOs, if they so require, for carriage of their traffic in their network from one station to another. This clause does not confer any right on the NLDOs to carry any intra-circle long distance traffic.


(S.T. Abbas)
Director (CS-II)
Phone : 23036348/23722444

Copy to : DDG(Regn.), M/s BSNL w.r.t. their letter No. 430-1/2006/Regn.1019 dated 21.05.2007