

**THE TELECOMMUNICATION INTERCONNECTION
(SECOND AMENDMENT) REGULATIONS, 2020
(06 of 2020)**

**TELECOM REGULATORY AUTHORITY OF INDIA
NOTIFICATION
New Delhi, the 10th July, 2020**

File No. 409-3/2018-NSL-I --- In exercise of the powers conferred upon it under section 36, read with sub-clauses (ii), (iii) and (iv) of clause (b) of sub-section (1) of section 11, of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997), the Telecom Regulatory Authority of India hereby makes the following regulations further to amend the Telecommunication Interconnection Regulations, 2018 (1 of 2018), namely:

1. (1) These Regulations may be called the Telecommunication Interconnection (Second Amendment) Regulations, 2020.

(2) They shall come into force with effect from the date of their publication in the Official Gazette.
2. After regulation 9 of the Telecommunication Interconnection Regulations, 2018 (1 of 2018), the following regulation shall be inserted, namely:

“9A. Level of interconnection for PSTN to PSTN connectivity:-----

(1) Within a service area, the location of POI, for calls between PSTN and PSTN or between PSTN and NLD network, shall be at such place as may be mutually agreed between the interconnection provider and the interconnection seeker.

(2) In case the interconnection provider and the interconnection seeker fail to agree under sub-regulation (1), the location of POI, for calls between PSTN and PSTN or between PSTN and NLD network, shall be at LDCC:

Provided that carriage charge for carriage of calls from LDCC to SDCC and *vice versa*, as applicable, shall be paid by the interconnection seeker to the interconnection provider:

Provided further that the existing POIs at the SDCC level, for calls between PSTN and PSTN or between PSTN and NLD network, shall remain in operation for a period of at least five years or till such time the interconnected service providers mutually decide to close such POIs, whichever is earlier:

Provided also that the existing POI at the SDCC level, for calls between PSTN and PSTN or between PSTN and NLD network, can be closed if the services of either of the interconnected service providers are discontinued in that SDCA.”

(S.K. Gupta)
Secretary

Note 1: The principal regulations were published vide F.No.10-10/2016-BB&PA dated 1st January 2018 (1 of 2018).

Note 2: The Telecommunication Interconnection (Amendment) Regulations, 2018 (4 of 2018), were published vide F.No.10-10/2016-BB&PA dated 5th July 2018.

Note 3: The Explanatory Memorandum explains the objects and reasons of the Telecommunication Interconnection (Second Amendment) Regulations, 2020 (06 of 2020).

Explanatory Memorandum to “The Telecommunication Interconnection (Second Amendment) Regulations, 2020”

Introduction

- 1.1 In India, as of 31st January 2020, the fixed line market segment comprises of 1.75% of the total telecom subscriber base. Over the last decade, the fixed line subscriber base has shown a decreasing trend and has reduced from 36.76 million as of 31st January 2010 to 20.58 million as of 31st January 2020. However, the wireless subscriber base has shown a healthy growth and has increased from 545.05 million in January 2010 to 1.15 billion in January 2020. The decreasing trend in the fixed line telecom subscriber base is a cause of concern as the same network is also used to deliver fixed line broadband services. These networks are referred to as the Public Switched Telephone Network (PSTN).
- 1.2 The Central Government notified the National Digital Communication Policy 2018 (NDCP-2018) to ensure harmonious growth and attract additional investment in the telecom sector. Keeping in view the fact that, presently, the tele-density of fixed line subscriptions is abysmally low in the country, the NDCP-2018 provides special emphasis on promoting the fixed line communication networks. It has set a goal of enabling fixed line broadband access to 50% of households in India by 2022.
- 1.3 To ensure seamless communication among the subscribers of different access service providers within the same service area or in other service areas, interconnection among different PSTNs and among PSTN and NLD networks is necessary. 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.
- 1.4 The Authority issued the Telecommunication Interconnection (Reference Interconnect Offer) Regulation, 2002 (hereinafter referred to as the Interconnect Regulations, 2002). As per the Interconnect Regulations, 2002, a TSP enjoying Significant Market Power (SMP) status is required to submit its proposed Reference Interconnection Offer (RIO) (describing, *inter alia*, the technical and commercial conditions for interconnection based on the model RIO as annexed to the Interconnect Regulations, 2002) to the Authority for approval, and then has to publish the approved RIO on its website. Such RIO, thereafter, forms the basis of all interconnection agreements to be entered into by/and with the issuer of the RIO. The Interconnect Regulations, 2002, also contains three Annexures containing (a) Explanatory Memorandum (EM) to the regulation, to explain the reasons for the issuance of the Regulation; (b) the model RIO; and (c) Guidelines. The Guidelines annexed with the Interconnect Regulations, 2002, provide for interconnection of circuit switched networks using CCS7 Signalling. These guidelines also provide the possible types of interconnections for various call scenarios of PSTN and Public Land Mobile Network (PLMN).

- 1.5 Keeping in view the regulatory, market, and the technological changes during the last decade in the telecommunication sector, and with a view to make more effective, non-discriminatory, fair, and transparent interconnection framework, the Authority initiated the review of the regulatory framework governing interconnection in October 2016 by issuing a Consultation Paper. After a detailed analysis of the comments received from the stakeholders during the consultation process and internal deliberations, the Authority notified “The Telecommunication Interconnection Regulations, 2018 (1 of 2018), dated 1st January 2018”, wherein the Authority was of the view that the review of the level of interconnection requires further deliberations.
- 1.6 The Authority later decided to undertake the review of the level of interconnection for fixed line networks. Accordingly, a Consultation Paper (CP) on the ‘Review of the Regulatory Framework for Interconnection’ was issued on 30th May 2019, seeking comments from the stakeholders by 27th June 2019 and counter-comments, if any, by 11th July 2019. On requests of some of the stakeholders, the dates for submission of comments and counter-comments were extended till 4th July 2019 and 18th July 2019, respectively. In response to the CP, a total of 15 comments and one counter-comment were received from the stakeholders. An Open House Discussion (OHD) with the stakeholders was held on 19th August 2019 in New Delhi.
- 1.7 After considering all the written submissions of the stakeholders, discussion in the OHD, and examining the issue in hand internally, the Authority has finalized these regulations.

2. Level of Interconnection

- 2.1 At present, TSPs, having either Basic Service License, Unified Access Service License (UASL), or Unified License (UL), are providing fixed line services. As per the license conditions, the licensees shall adhere to the National Fundamental Plans like National Numbering Plan, Signalling Plan, Routing Plan, National Frequency Allocation Plan and any other plan, as applicable to the respective service authorization issued by the Department of Telecommunications, and technical standards as prescribed by the Licensor from time to time. To cater to a multi-operator and multi-service environment, the National Numbering Plan (NNP)¹, which provides the numbering and dialling schemes for various scenarios of calls, was reviewed and issued by DoT in 2003. The Short-Distance Charging Area (SDCA) and Long-Distance Charging Area (LDCA) are defined in the NNP. It also defines intra-SDCA calls as Local Calls. The NNP prescribes SDCA based linked numbering scheme. It also provides for prefixes to be used in various call scenarios. Various terminologies used in these regulations, such as PSTN, local call, SDCA, SDCC, LDCA, LDCC, SSA, long distance call, and NLD network, are defined in the license agreements.

¹ National Numbering Plan, 2003, <http://www.dot.gov.in/sites/default/files/nnp2003.pdf>

2.2 For the purpose of charging and call routing the country has been divided into 22 License Service Areas (LSAs), 322 Long Distance Charging Areas (LDCAs) and 2645 Short Distance Charging Area (SDCA). Calls within the SDCAs are treated as local calls, and the inter-SDCA calls are treated as Long-Distance Calls.

2.3 The General Conditions chapter in UL has *inter alia* the following provisions relating to network interconnection:

27.4 Licensee shall interconnect with other Telecom Service Providers at the Points of Interconnection (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.

27.6 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.

2.4 Further, the Access Service Authorisation chapter in UL has *inter alia* the following provisions related to its scope and network interconnection:

2.1(a)(i) The Access Service under this authorization covers collection, carriage, transmission and delivery of voice and/or non-voice MESSAGES over Licensee's network in the designated Service Area. The Licensee can also provide Internet Telephony, Internet Services including IPTV, Broadband Services and triple play i.e voice, video and data. While providing Internet Telephony service, the Licensee may interconnect Internet Telephony network with PSTN/PLMN/GMPCS network. The Licensee may provide access service, which could be on wireline and / or wireless media with full mobility, limited mobility and fixed wireless access.

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.

6.1 Inter-Circle traffic from one service area to another shall be routed through the network of NLD licensee or the Unified Licensee having authorization of NLD service.

6.2 It shall be mandatory for the LICENSEE to interconnect to/ provide interconnection to all eligible Telecom Service Providers (eligibility shall be determined as per the service provider's License Agreement and TRAI's determinations/ orders/ regulations issued from time to time) to ensure that the calls are completed to all destinations. Further, the Licensor may direct the Licensee to implement the process whereby the subscribers could have a free choice to make inter-circle/ international long distance calls through NLD/ ILD Operator.

6.3 International Long Distance traffic should be routed through network of NLD service providers, to the ILD service provider's gateways for onward transmission to international networks subject to fulfilment of any Guidelines/ Orders/ Directions/ Regulation issued from time to time by LICENSOR/ TRAI. However, the Licensee shall not refuse to interconnect with the ILD Service licensee directly in situations where POP of ILD service licensee and Switches of Licensee's (GMSC/ Transit Switch) are located at the same station of Level-I TAX.

2.5 The provisions related to its scope and network interconnection in UASL are as below:

2.2 (a)(i) The SERVICES cover collection, carriage transmission and delivery of voice and/or non-voice MESSAGES over LICENSEE's network in the designated SERVICE AREA and includes provision of all types of access services. Access Service Provider can also provide Internet Telephony, Internet Services including IPTV and Broadband Services.

2.2 (a)(v) Except those services listed in para 2.2 (b)(i) below, the LICENSEE cannot provide any service/ services which require a separate licence. The access service includes but not limited to wireline and /or wireless service including full mobility, limited mobility as defined in clause 2.2 (c)(i) and fixed wireless access. The LICENSEE may offer "Home Zone Tariff Scheme (s)" as a subset of full mobile service in well defined geographical Areas through a tariff of its choice within the scope of orders of TRAI on the subject. Numbering and interconnection for this service shall be same as that of Full mobile subscribers.

2.3 LICENSEE shall be free to carry intra-Service Area long distance traffic without seeking an additional licence. However, subject to technical feasibility, the subscriber of the intra-Service Area long distance calls, shall be given the choice to use the network of another Service Provider in the same service area, wherever possible. The LICENSEE can also enter into mutual agreements with National Long Distance Operators for carrying intra Circle Long Distance traffic.

26.1 Interconnection between the networks of different Licensees for carrying circuit switched traffic shall be as per national standards of CCS No.7 and for carrying IP based traffic as per Telecom Engineering Centre (TEC) standards 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.

26.2 The LICENSEE may enter into suitable arrangements with other Telecom Service Providers to negotiate Interconnection Agreements whereby the interconnection network will 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 numbers to enable transmission and reception of the messages by means of the Applicable Systems.

(c) To connect, and keep connected, to their Applicable Systems.

26.3 The provision of any equipment and its installation for the purpose of Interconnection shall be subject to mutual agreement of the concerned parties.

26.4 The Interconnection Tests for each and every interface with any Service Provider shall be carried out by mutual arrangement between the LICENSEE and the other party involved. The Interconnection Tests schedule shall be mutually agreed. Adequate time, not less than 30 days, will be given by the LICENSEE for these tests. On successful completion of interconnection tests or on mutual agreement between service providers for rectification of deficiencies / deviations, if any, the LICENSEE can commence the SERVICE. In case of disagreement for rectification of deficiencies / deviations in conducted interconnection tests, prior approval of LICENSOR shall be required.

26.5 It shall be mandatory for the LICENSEE to interconnect to / provide interconnection to all eligible Telecom Service Providers (eligibility shall be determined as per the service provider's Licence Agreement and TRAI's determinations/orders/regulations issued from time to time) to ensure that the calls are completed to all destinations as well as NLD Operators whereby the subscribers could have a free choice to make inter-circle/ international long distance calls through NLD/ILD Operator. For international long distance call, the LICENSEE shall normally access International Long Distance Operator's networks through National Long Distance Operator's network subject to fulfilment of any Guidelines/ Orders/ Directions / Regulation issued from time to time by LICENSOR/ TRAI. The LICENSEE shall not refuse to interconnect with the International Long Distance Service LICENSEE directly in situations where ILD Gateway Switches/ Point of Presence (POP), and that of Access Provider's (GMSC/Transit Switch/Media Gateway Controller (MGC)/ Media Gateway (MG)) are located at the same station of Level-I TAX.

26.6 Direct interconnectivity among all Telecom Service Providers in the licensed SERVICE AREA is permitted. LICENSEE shall interconnect with other Service Providers, subject to compliance of prevailing regulations, directions or determinations issued by TRAI. The interconnection with a

Telecom Services Provider shall have to be withdrawn, in case of termination of the licence of that Telecom service provider, within one hour or within such time as directed by the LICENSOR in writing, after receiving intimation form the LICENSOR in this regard.

26.7 Point of Inter-connection (POI) between the networks shall be governed by Guidelines/ Orders/ Directions/ Regulation issued from time to time by LICENSOR/ TRAI. The terms and conditions of interconnection including, inter-alia, standard interfaces, points of interconnection and technical aspects will be subject to compliance of prevailing regulations, directions and determinations issued by TRAI/Licensor from time to time.

2.6 The National Long Distance (NLD) Authorisation chapter under UL has *inter alia* the following provisions related to scope of the NLD service license and network interconnection:

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.

(b) The Licensee can also, in respect of Basic Service, make mutually agreed arrangements with the concerned Service Providers for picking up, carriage and delivery of the traffic from different legs between Long Distance Charging Center (LDCC) and Short Distance Charging Centers (SDCCs).

(c) In the case of Cellular Mobile Telephone Service traffic, the inter-circle traffic shall be handed/taken over at the Point of Presence (POP) situated in LDCA at the location of Level I TAX in originating/terminating service area. For West Bengal, Himachal Pradesh and Jammu & Kashmir such locations shall be Asansol, Shimla & Jammu respectively.

4.1 The licensee, who has authorization for International Long Distance, National Long Distance, Access services, may have only one Switch to provide the ILD, NLD and Access services. Separate accounts of all the services are to be maintained by duly apportioning the costs amongst the various services. However, the Access Service through the said Switch may be provided only if the Licensee has the Access Service authorization for the Service Area in which the switch is located. For this purpose, Media Gateway or its equivalent shall be considered as Switch for which MGC/Soft Switch can be installed anywhere in the country. Separate TAX and Gateway switch is not mandatory. The Licensee may deploy circuit switched or managed Packet Switched network to engineer its NLD networks.

2.7 The Guidelines annexed to the Interconnect Regulations, 2002, prescribe the possible types of interconnections. The level of POIs in case of PSTN to PSTN traffic as defined in these Guidelines are as below:

Table 1.1 - PSTN to PSTN (Outgoing Traffic)

Type of Call	POI	Remarks
<i>Local</i>	<i>At SDCC Tandem or Local Exchange level situated in the same SDCA as per mutual agreement</i>	<i>BSO – BSO</i>
<i>Intra-circle long distance (Note 2)</i>	<i>(i) Terminating SDCC / LDCC (ii) Originating SDCC / LDCC, if BSO has no POI at the terminating end</i>	<i>BSO- BSO (Far-end) BSO-BSO (Near-end)</i>
<i>Inter-Circle</i>	<i>BSO to hand over originating traffic at the SDCC in the same SDCA in which it has originated or by mutual agreement as per licence terms and conditions at the LDCC of originating LDCA.</i>	<i>BSO to NLDO (Near-end)</i>
<i>International</i>	<i>BSO to hand over originating traffic at the SDCC in the same SDCA in which it has originated or by mutual agreement as per licence terms and conditions at the LDCC of originating LDCA. NLDO to hand over international traffic at the Gateway Switch of ILDO To the gateway switch of the ILDO in case the ILD Gateway Switch and the BSO's Tandem/Transit Switch are located at the same station of level I TAX.</i>	<i>BSO to NLDO (Near-end) NLDO to ILDO BSO to ILDO (Near-end) for traffic of same SDCA</i>

Table 1.2 - PSTN – PSTN (In-Coming Traffic)

Type of Call	POI	Remarks
<i>Local</i>	<i>Same as Table 1.1</i>	
<i>Intra-Circle Long distance</i>	<i>Same as Table 1.1</i>	
<i>Inter Circle</i>	<i>NLDO to hand over terminating traffic by mutual agreement as per licence terms and conditions in the destination LDCA at SDCC or at LDCC POI.</i>	<i>NLDO to BSO</i>
<i>International</i>	<i>Level I TAX where the ILDO Gateway Switch is located.</i>	<i>ILDO to NLDO</i>

	<p><i>NLDO to hand over International traffic to the BSO at the terminating SDCC or by mutual agreement as per licence terms and conditions at terminating LDCC.</i></p> <p><i>Terminating local network at tandem/transit in case the ILD Gateway Switch and the Access Provider's Tandem/ Transit Switch are located at the same station of level I TAX.</i></p>	<p><i>NLDO to BSO</i></p> <p><i>ILDO to BSO (for traffic terminating in same SDCA)</i></p>
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Note 1. New National Long Distance Operator(s) can make necessary interconnection arrangements with other NLDOs, to ensure delivery of calls at places where POP is yet to be established as per their network rollout obligations.

Note 2. Intra-Circle Traffic may also be handed over to an NLDO by mutual consent.

- 2.8 In the CP dated 30th May 2019, the Authority has sought the views of stakeholders on the following issues:
- (i) Whether the flexibility be provided to interconnecting operators for interconnecting PSTN to PSTN networks at SDCC/ Level II TAX (SSA)/ Level I TAX (LSA) levels as per their mutual agreements? If no, then justify your comments with reasons.
 - (ii) In case of no mutual agreement between the operators, what should be the level of interconnection for interconnecting PSTN to PSTN networks be mandated in the Regulations.
- 2.9 The stakeholders have expressed divergent views on this issue. While the public sector TSPs have directly or indirectly opposed any change in the existing level of interconnection for PSTN networks, the other TSPs have, in general, favoured flexibility. However, later, BSNL – a public sector TSP – has also favoured flexibility.
- 2.10 Most of the stakeholders have commented in favour of having flexibility and mutual understanding for level as well as number of POIs. One private TSP and COAI have opined that the present regulatory regime provides required flexibility for PSTN to PSTN interconnection through mutual agreements. Further, as per them, the IP-based networks have advantage over the legacy TDM-based circuit switched networks in terms of flexibility of the network architecture and traffic handling capacity. Private TSPs are of the view that now a single IP-based core switch is sufficient to cater to requirements of a whole LSA as compared to the requirement of multiple stand-alone circuit switched TDM switches in each SDCA. Based on these

arguments, private TSPs have informed that for PSTN to PSTN interconnection, they have (among private TSPs) mutually agreed to have POIs at 3–4 locations in an LSA. Private TSPs are of the opinion that PSTN to PSTN interconnection at SDCA level is no more required due to end of the differential charging between local and long-distance calls in an LSA.

- 2.11 Private TSPs have also stated that only the public sector TSPs are insisting on interconnection of PSTN to PSTN at SDCA level even though constraint in providing such interconnection are faced at times. One of the stakeholders has said that the mutual agreement may affect timely establishment of POI and has further said that the level of interconnection and timelines for interconnection should be regulated by the Authority and should not be left for mutual agreement.
- 2.12 Some stakeholders have commented that the interconnection arrangement for PLMN to PSTN and NLDO to PSTN should also be reviewed on the same lines, and the level of PLMN to PSTN and NLDO to PSTN interconnection in an LSA should also be given flexibility.
- 2.13 One stakeholder, MTNL, in its comments has referred to the legal case number WP(C) 4758/2019 filed by it, challenging The Telecommunication Interconnection Regulations, 2018, dated 1st January 2018 and subsequent amendment dated 5th July 2018, pending before the Hon'ble Delhi High Court. Without offering any comment on the issues raised in the CP, it has requested the Authority to await the decision of the Hon'ble Delhi High Court before making any amendment to these Regulations.
- 2.14 BSNL, which is a public sector undertaking and which has the largest network for fixed line services, in its initial submissions commented that there should not be any flexibility to interconnecting operators for PSTN to PSTN interconnection. This is to say that the PSTN to PSTN calls should necessarily be terminated at the SDCC level. In support of its comments it has contended that Level I and Level II TAX are part of their NLD network. Further, it has stated that local, short distance calls involve no carriage and hence are not allowed to be carried by the NLD operators. By referring to the clause 2.2 of Access Services authorization under UL, it has reasoned that, in order to give choice to the subscribers of the intra-circle long distance calls, PSTN to PSTN connectivity at SDCA level for all TSPs is mandatory. While referring to the Section 11(1)(b)(vi) of the TRAI Act, it has interpreted that interconnectivity within SDCA for local calls is mandatory. It has further mentioned that for PSTN to PSTN traffic, the private TSPs are interconnecting at one or/and two locations in an LSA, though direct connectivity in the SDCA is mandatory and having similar connectivity will cause a huge loss to it as it is operating and maintaining exchanges at all the SDCAs by incurring huge expenditure on network, establishment, and manpower. It was further of the view that the TSPs which are having POIs at a smaller number of locations are violating licence conditions/TRAI Regulations. Therefore, instead of reviewing the level of interconnection, action should be taken against other TSPs.

- 2.15 BSNL, in its comments, has also stated that if any TSP can lay network in the SDCA for providing PSTN services, it should not have reservations in seeking interconnectivity at local/SDCA level. It has further stated that having provisions for interconnectivity outside the local area for local calls has all the probability of sabotaging and disrupting total communication in the SDCA. It has also mentioned that it is not feasible and rational for them to close down their PSTN establishments in all the SDCAs, and have network setup/ establishment similar to private TSPs. Their huge PSTN network is primarily copper-cable based and cannot be changed to optical fiber quickly. It has further mentioned that the present regulatory requirement of SDCA level interconnectivity for PSTN networks is in accordance to the present Numbering plan and Routing plan of DoT.
- 2.16 In its counter-comments, BSNL has said that, being a PSU, it should not be compared with the private sector TSPs. It further said that BSNL is having a large network of copper cables, and it cannot be expected to convert all the copper cable with optical fibre cable to compete with private sector TSPs, and hence, should be given weightage. BSNL is having Point of Presence (PoP) in all SDCAs, and is incurring expenditure to maintain the same in anticipation to provide POIs.
- 2.17 In view of the evolving technological structure of wireline network, BSNL has reviewed its comments to the CP, and communicated the same to the Authority on 13th June 2020. Through the revised comments, BSNL has communicated that in view of evolving technological structure of their fixed line network, there is a need to have flexibility with respect to the mandate of having Wireline to Wireline POI at SDCA level for future connectivity.
- 2.18 As per the revised comments of BSNL, the existing interconnection between two Wireline Networks should continue to be at the SDCA level, as BSNL has already incurred expenditure for establishing the infrastructure as per the existing regulations to facilitate the SDCA level connectivity to other TSPs of wireline services. According to it, if annual infrastructure charges are not continued on existing SDCA POIs, BSNL will have to incur losses, as the infrastructure will not be used in future as well. To protect existing investments, it has emphasised that the new arrangement should have no impact on the existing POIs.
- 2.19 In re-considered view of BSNL, for new interconnections, the interconnecting operators may be given flexibility to interconnect at SDCA or LDCA level depending on the availability of their network elements. According to BSNL, the wireline operator providing service in an SDCA is expected to have sufficient infrastructure at least at LDCA/district level, therefore, in case of non-feasibility of POI at SDCA (from the new operator) where the services are scheduled/planned to be started by the new operator, the connectivity may be allowed at the LDCA level. However, as per BSNL, in such cases it should be allowed to charge

the cost of carrying the calls from LDCC to SDCC or vice versa by defining suitable carriage charges per minute of use.

- 2.20 On the issue of mandate for level of interconnection in cases where there is no mutual agreement between interconnecting TSPs, most of the stakeholders have suggested that it should be at LDCC/Level II TAX. One stakeholder has suggested that it should be at LSA/Level I TAX level and another stakeholder has said that it should be a single IP-based location for entire LSA. One of the stakeholders has suggested that the existing arrangement of POI at SDCA for local calls should be continued.

Analysis

- 2.21 The Authority is of the view that with the ongoing changes in the telecom market and technologies used by service providers, the regulations should also evolve and these should not restrain the efficient use of available technologies, expansion of existing TSPs networks, and entry of new service providers in the market. The purpose of Interconnection Regulations is to provide certainty to service providers and facilitate adequate, efficient and in-time interconnection among public networks.
- 2.22 In general, private TSPs' networks among themselves are interconnecting at maximum 3–4 locations in any LSA. They are now also favouring fewer number of locations for interconnection with public TSPs. The plausible reason for the same could be that the size of PSTN, in terms of subscribers as well as traffic, is very small in comparison to PLMN. The subscriber base of PSTN is around 1.75% of the total telephone subscribers with a further decreasing trend. Correspondingly, the requirement of POIs for interconnecting PSTN networks is also lesser as compared to that of the mobile networks. Now even BSNL, who was earlier opposing the flexibility in level of interconnection between PSTN and PSTN, is supporting the same to some extent.
- 2.23 In case of Public Land Mobile Networks (PLMNs), which caters to a traffic of more than 98% telecom subscribers, the lowest level at which the POI is prescribed in the Guidelines annexed to the Interconnect Regulations, 2002, is at the LDCC level. Therefore, at any point of time, the maximum number of places having POIs would not be more than 322 (number of LDCCs). In case of fixed line networks, as prescribed in the Guidelines annexed to the Interconnect Regulations, 2002, the lowest level where POIs could be established is SDCC. Therefore, even when the fixed line network carries traffic for around 1.75% of total telecom subscribers only, the maximum number of places having interconnections could go up to 2645 (total number of SDCCs), if POIs are established at each SDCC. It is pertinent to mention here that in the year 2002 when SDCC level POI requirement was prescribed the fixed line networks were catering to around 80% of the total telephone subscribers.

- 2.24 As far as fixed line telephone service is concerned, the private TSPs are the late entrants to this market. They have patchy presence and none of the private TSPs has pan-India presence, i.e., presence in all the 2645 SDCA. As per the information provided by BSNL, currently, the number of SDCA having PSTN to PSTN POIs working with private TSPs networks are 848. Therefore, it can be easily inferred that collectively the private TSPs are present in much less than one-third of the total SDCA in the country. Moreover, due to the late entry in the market they have technological advantage over the public sector TSPs for fixed line networks.
- 2.25 Out of the two public sector TSPs, the presence of one TSP (MTNL) is limited to only two LSAs, which have coterminous LSA, LDCA, and SDCA. While the other public sector TSP (BSNL) is present in almost all other remaining SDCA.
- 2.26 BSNL, while is in the process of modernising its PSTN by upgrading to packet-switched network, is still maintaining infrastructure and network elements such as ports for interconnection, similar to that of circuit-switched network, at the SDCC level. According to BSNL, it is maintaining such ports at the SDCC level as it believes that for local calls, the license conditions/ TRAI Regulations mandate PSTN to PSTN interconnection at SDCC Level.
- 2.27 While private operators mutually decide to interconnect their networks at a smaller number of locations, BSNL believes that POIs for PSTN to PSTN local calls should be established at the SDCC level only. Therefore, according to BSNL, any TSP seeking interconnection for fixed line services is required to reach at the SDCC Level for interconnection. One of the reasons mentioned by BSNL in support of SDCC level POI is that if any TSP can lay network for providing services in any SDCA, then it should not have any reservation in seeking interconnection at the SDCC level. Technically, the argument of BSNL may be appealing but one must remember that interconnection refers to the commercial and technical arrangement together. Even when it is technically feasible to have interconnection at each SDCC, commercially, it may not be feasible because of lesser traffic. That means, mandating POI at SDCC level for local calls may discourage new entrants in the fixed line market from entering into smaller SDCA markets. This goes against the stated objectives of the NDCP-2018. However, as stated earlier, BSNL is also now supporting flexibility in establishing POIs at SDCC or LDCC level.
- 2.28 Further, BSNL's understanding that for PSTN to PSTN interconnection, the license conditions provide for POIs at SDCC level, is not tenable. The clause 2.2 of the Access Service authorisation under UL has been quoted by BSNL in this context. The complete text of clause 2.2 of the Access Service authorisation under UL is as below:

“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”.

- 2.29 The above clause provides that the Licensee may carry its own intra-circle long distance traffic on its own network. The said license clause also provides that subject to technical feasibility, the subscriber shall be given a choice to use the network of another Licensee in the same service area, for carrying the intra-circle long distance calls. In this regard, it is pertinent to mention here that for intra-circle long distance calls, as on date, call by call choice to subscribers is not implemented in the networks. Moreover, in fact, in most of the cases, the call charges for local and intra-circle long distance calls are the same. Therefore, this particular provision in the License agreement does not provide any ground for justifying or inferring that for local calls PSTN to PSTN interconnection is necessary at SDCC level.
- 2.30 BSNL has also referred to Sub-section 11(1)(b)(vi) of the TRAI Act, 1997, to justify its argument that PSTN to PSTN interconnection should be at the SDCC level. In this regard, the referred clause is reproduced below:
- “lay-down and ensure the time period for providing local and long-distance circuits of telecommunication between different service providers”.*
- 2.31 The above provision empowers TRAI to specify the time-period for providing local and long-distance circuits between service providers. This is to safeguard the interests of a service provider when it requests local or long-distance circuits from another service provider. This can't be the ground for compelling service providers to take local circuits for interconnection at every location.
- 2.32 One of the arguments made by BSNL to justify its demand was that the Level I and Level II TAX are part of their NLD network, and, therefore, interconnection of fixed line access network for local calls cannot be mandated with NLD network, i.e., Level I and Level II TAX switches. It has also stated through its comments that no NLD TSP other than BSNL uses these terminologies. The Authority has noted that no justification has been given by BSNL in support of the above statement. It has been further noted that the term Level I TAX has already been very frequently used in TRAI Regulations as well as Licenses issued by DoT. Therefore, the statement of BSNL that this terminology is specific to BSNL only is incorrect. Further, in the Account Separation Reports (ASRs) submitted to TRAI, the costs to TAX network is booked in wireline as well as NLD network. This shows that TAX Network of BSNL is part of wireline as well as NLD network, and the statement made by BSNL that Level I and Level II TAXs are part of their NLD network alone is not correct.

- 2.33 Another argument made by BSNL to justify its demand was that there should be accessibility to all the emergency services even when the communication between SDCC and LDCC is cut off, may be due to cable cut, system failure, link failure, or any reasons of sabotage. It is pertinent to mention here that the interconnection between PSTN and PLMN is at either LDCC or LSA headquarter level. It appears to be an attempt to justify its point of view as in the case of mobile services, which cater to the needs of more than 98% subscribers, no such issue has been reported. Further, it is the responsibility of each TSP to ensure the compliance of the license conditions and Quality of Service (QoS) Regulations, which include access to emergency services also. However, now that BSNL has reviewed its own position, all these arguments of BSNL, which were originally made by it, do not hold much ground.
- 2.34 It is pertinent to mention here that this amendment to the Interconnection Regulations, 2018, is only to address the level of Interconnection between PSTN and PSTN to NLD networks. The changes in level of interconnection does not change the regulatory framework for Interconnect Usage Charges (IUCs). For regulating IUCs, the Authority has separately notified the Telecommunication Interconnection Usage Charges Regulation 2003 (4 of 2003), as amended from time to time. Various types of IUCs such as TAX transit charge, charge for intra-SDCA calls, carriage charge for long distance calls, etc., as applicable, would not be affected by the present amendment to the Interconnection Regulations, 2018. It is the choice of the interconnecting TSPs to decide the level of interconnection, keeping in view the relevant regulatory provisions. Therefore, these IUC charges would remain as it is.
- 2.35 In respect of an argument of a stakeholder that the Authority should wait for the decision of the Hon'ble Delhi High Court before making any amendment to the Telecommunication Interconnection Regulations, 2018, dated 1st January 2018, it is pertinent to mention here that the issues discussed in the current consultation process have not been dealt in the Telecommunication Interconnection Regulations, 2018, dated 1st January 2018, and its subsequent amendment dated 5th July 2018. In fact, as stated hereinbefore, on the issue of review of level of interconnection, earlier, the Authority opined that before taking any decision, there is a need for further deliberations. Therefore, the Authority is of the view that the pending court case in the Hon'ble Delhi High Court has no relation with the current amendment to the regulations.
- 2.36 Considering the above, the Authority is of the view that the level of PSTN to PSTN interconnection as well as the number of POI locations within an LSA should be left to mutual agreement between interconnecting TSPs. The interconnecting TSPs may decide the level of PSTN to PSTN interconnection, which could be SDCC, LDCC, or LSA HQ (level-I TAX), keeping in view the technical and commercial feasibility, and number of POI locations based on the redundancy and traffic requirements.

- 2.37 Further, to ensure certainty, the Authority is of the view that in case of no mutual agreement between interconnecting TSPs in respect of the level of PSTN to PSTN interconnection, as a fallback option it should be kept at respective LDCC/Level-II TAX level. This would reduce the entry barrier for new service providers, i.e., interconnection seekers, and enable quicker interconnection between the networks of interconnection provider and interconnection seeker. Thus, it would promote competition in fixed line services. This would also bring the uniformity in the level of PSTN to PSTN interconnection and PLMN to PSTN interconnection. As local calls, by definition, are originated and terminated within an SDCA, under this arrangement, the interconnection provider has to work extra by carrying local calls from LDCC to SDCC and vice versa. To address this issue, the Authority is of the view that the carriage charge for carriage of calls from LDCC to SDCC and vice versa, as applicable, shall be paid by interconnection seeker to interconnection provider. Further, having POIs at Level-II TAX/LDCC level would have enough number of POIs for fixed line networks. Also, the call would not be required to travel too far before it is terminated. Demand of some of the stakeholders for mandating only 3–4 POIs in an LSA, through regulations, is not tenable as the number of POIs depend upon multiple factors like traffic, redundancy, geography, etc.
- 2.38 Some of the stakeholders have also demanded to review the level of interconnection for NLD Network to PSTN, and PLMN to PSTN. Since the PLMN to PSTN interconnection is already provided at the LDCC level, it is not being reviewed at this stage. As far as PSTN to NLD Network interconnection and vice versa is concerned, it is important to point out here that in Interconnect Regulations, 2002, these arrangements were provided under the PSTN to PSTN interconnection heading only. Therefore, it appears that the stakeholders have demanded for review of the same.
- 2.39 It is to be noted that presently the NLD traffic of PSTN is also terminated at POIs available at the SDCC level. It also raises similar issues as for PSTN to PSTN connectivity for local calls. Accordingly, the Authority is of the view that the regulations for interconnection between PSTN and NLD network should be like interconnection between PSTN and PSTN. Therefore, for exchanging traffic between PSTN and NLD Network within an LSA, the seeker and provider TSPs should have flexibility of mutually deciding the level of interconnection. However, in case no mutual agreement is reached between them, as a fall-back option, interconnection of NLD Network to PSTN shall be similar to that of PSTN to PSTN interconnection, that is, at the LDCC level. Further, the carriage charge for carriage of calls from LDCC to SDCC and vice versa, as applicable, shall be paid by interconnection seeker to interconnection provider.
- 2.40 As stated earlier, the purpose of Interconnection Regulations is to provide certainty to service providers and facilitate adequate, efficient, and in-time interconnection among public networks. These amendments to the regulations are intended to ensure orderly growth of the sector and protect the interest of the service providers. It is a fact that the interconnecting TSPs have invested in establishing the existing POIs between

PSTN to PSTN. While amending the regulations to facilitate expansion of existing TSPs networks into new territories and entry of new service providers in the market, it is also necessary to protect the investments gone into establishing the existing POIs. Therefore, the Authority is of the view that such existing POIs should be continued for a minimum period of five years from the date these regulations come into force. This would balance the need for protecting existing investments, and ensuring orderly growth of the sector. Further, those POIs, where there is a mutual agreement between interconnected service providers to close a POI or in case one of the interconnected service provider ceases to provide service in a SDCA such POI should be allowed to be closed. The flexibility provided by these regulations would be applicable to new POIs only.

2.41 In the CP, the Authority had also sought views of the stakeholders on any other related issues. In this context, some of the stakeholders have demanded removal of the transit charge/transit carriage charge. As various types of prescribed charges in the context of interconnection are dealt separately under IUC Regulations, the issues of the transit charge and the transit carriage charge, etc., are not being considered at this point of time. Some stakeholders have also mentioned certain issues related to NLD, Numbering scheme, etc., which are not related to the present consultation, and, hence, are not being considered.