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Subject: ISPAI response to TRAI Consultation Paper on Review of existing TRAI Regulations on Interconnection matters

Dear Sir,

We thank the Authority for providing us the opportunity to submit our response on this important subject.

We have enclosed our comprehensive response for your consideration.

We believe that the Authority would consider our submissions positively on the subject matter.

Thanking you,

With Best Regards,
For Internet Service Providers Association of India



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**ISPAI response to TRAI Consultation Paper on Review of existing TRAI Regulations on
Interconnection matters**

A. Regulations-wise Specific Questions

A.1. The Telecommunication Interconnection Regulations, 2018

Q1. For PSTN to PSTN, PLMN to PSTN and PSTN to PLMN, should the interconnection level be specified at LSA level? If yes, should the existing POIs at the LDCA/SDCA level also be migrated to the LSA level? Kindly justify your response.

Response:

1. ISPAI is of the view that interconnection between PSTN–PSTN, PLMN–PSTN and PSTN–PLMN should be uniformly defined at the LSA level, with the remaining LDCA/SDCA POIs migrated accordingly. The Indian telecom ecosystem has already moved to all-IP architectures, and sub-LSA POIs—created for legacy, circuit-switched networks—no longer serve any operational purpose. TRAI has previously mandated the phase-out of SDCA-level POIs under TIR-2018, and the transition period has already concluded. Establishing LSA-level interconnection as the standard would bring consistency across fixed and mobile domains, streamline network operations, and eliminate avoidable complexity, particularly in coordination with BSNL.
2. At the same time, ISPAI notes that advancements such as modern IP routing, unified numbering approaches, FLRN-based mechanisms, and fixed–mobile convergence now support more centralised interconnection models. While LSA-level POIs should remain the regulatory baseline, operators should also have the flexibility, through mutual agreement, to shift to national-level or pan-India POIs wherever technically and commercially suitable. This approach reduces duplication, improves routing efficiency, and aligns with the practices observed in advanced IP-driven networks globally. Accordingly, a framework that mandates LSA-level interconnection while enabling optional national-level POIs would help create a simplified, resilient, and forward-looking interconnection regime.

Q2. For PSTN to PSTN, PLMN to PSTN, PSTN to PLMN and PLMN to PLMN, should interconnection be allowed at a level other than the LSA level, based on mutual agreement? Kindly justify your response.

Response:

ISPAI is of the view that interconnection for PSTN–PSTN, PLMN–PSTN, PSTN–PLMN and PLMN–PLMN should also be allowed at the national level, in addition to the standard LSA-level framework, wherever mutually agreed between operators. With networks now operating on modern IP-based architectures, centralised routing is technically viable, scalable, and far more efficient than maintaining multiple distributed POIs. A national-level interconnection arrangement can substantially reduce infrastructure duplication, streamline operational processes, and remove the need for repeated ATP cycles and circle-specific procedures.

In addition, a national-level POI construct is aligned with the sector’s shift toward unified numbering, FLRN-based mechanisms, and fixed–mobile convergence. This approach reflects global best practices, where operators interconnect through centralised IP gateways to achieve greater efficiency and resilience. Permitting national-level interconnection through mutual consent would enhance network robustness, reduce latency in traffic handling, enable faster provisioning, and lower operational dependencies created by legacy LDCA/SDCA-level or multi-LSA routing structures. Accordingly, while

LSA-level interconnection should continue as the regulatory baseline, allowing national-level POIs through bilateral agreement is important for building a simplified, modern, and future-ready interconnection framework.

Further, considering today's digital ecosystem and landscape, especially for enterprise-focused ISPs, there should be adequate flexibility in determining POI locations as the Enterprise Service Providers do not operate PSTN or PLMN retail networks, and therefore interconnection frameworks around LSA-level voice POIs should not impose obligations, costs, or compliance burdens on ISPs or international carriers.

Q3. Based on your response to Question 1 and 2 above, what changes, if any, are required in the level of interconnection / point of traffic handover as provided in the following:

a) Telecommunication Interconnection Regulations (TIR), 2018, and

b) Guidelines annexed to the Telecommunication Interconnection (Reference Interconnection Offer) Regulations, 2002?

Kindly justify your response.

Response:

1. ISPAI believes that, in light of the proposed move toward LSA-level interconnection and the provision for national-level POIs on a mutually agreed basis, corresponding amendments are required in both the Telecommunication Interconnection Regulations (TIR), 2018 and the Guidelines to the Telecommunication Interconnection (Reference Interconnection Offer) Regulations, 2002.
2. To begin with, the regulatory framework should unambiguously specify that the Licensed Service Area (LSA) will serve as the minimum mandatory level of interconnection for PSTN–PSTN, PSTN–PLMN and PLMN–PSTN traffic.
3. Further, the regulations should expressly recognise the option for operators to establish national-level or multi-LSA POIs wherever such arrangements are mutually agreed, providing flexibility for more efficient and modern interconnection structures.
4. The framework must also incorporate a fallback mechanism for cases where mutual agreement is not achieved. In such instances, the interconnection point should default to the State Capital; and for LSAs encompassing multiple States, to the largest city within the concerned LSA.
5. It should additionally be clarified that each operator will bear responsibility for transporting its own traffic to and from the designated POI, and that no carriage charges shall apply for carrying calls from the POI to individual SDCAs.
6. Further, adequate flexibility to be provided for Enterprise focused service providers for determining POI location(s) should also be ensured in the regulation.
7. TRAI should also explicitly clarify in the Regulations that internet traffic, IP transit, peering, CDN, and cloud connectivity are outside voice POI obligations.
8. ISPAI therefore submits that these provisions be codified as a new clause—akin to the proposed “Regulation 9A”—within TIR 2018 and mirrored in the RIO Guidelines, to ensure consistency and establish a streamlined, contemporary, and future-ready interconnection framework.

Q4. Is there a need to mandate multi-path resiliency and redundancy in the Point of Interconnection (POI) framework to mitigate link failure at the primary POI in the case of:

- i. **PSTN-PSTN interconnection,**
- ii. **PLMN-PLMN interconnection, and**
- iii. **PLMN-PSTN interconnection?**

If yes, kindly provide an appropriate architectural framework with diagram. Kindly justify your response.

Response:

ISPAI submits that multi-path resiliency will naturally improve as interconnection migrates to higher levels of aggregation. The adoption of a regional IP-based interconnection architecture, such as four regional IP interconnect POPs, each provisioned with primary and secondary media paths, will inherently provide the redundancy and robustness already proven in data-network peering models.

ISPAI further emphasizes that all off-net outgoing traffic should be handed over to the terminating operator at its nearest IP POP. In the event that the nearest path is unavailable, traffic should be seamlessly rerouted through any of the remaining regional POPs, ensuring continuity, resilience, and service stability across networks.

Accordingly, we recommend that no regulatory mandate is needed for multi-path resilience and redundancy in the POI framework in the telecom network and should be left to the service providers.

Q5. Is there a need to incorporate security provisions in the interconnection framework to ensure network security? If yes, kindly provide details along with an appropriate architectural diagram. Kindly justify your response.

Response:

ISPAI is of the view that there is no requirement to introduce separate security provisions within the interconnection framework. Contemporary telecom networks already operate on security-by-design principles, and all licensed service providers are mandated to ensure comprehensive end-to-end network security under existing licence conditions. Furthermore, a detailed and robust security regime is already in place through the Telecommunications Cyber Security Rules notified under the Indian Telecommunications Act, 2023.

In light of this overarching framework, ISPAI submits that creating additional or interconnection-specific security obligations would be redundant, may lead to operational and compliance complexities, and could potentially conflict with the uniform security requirements that have already been established at the national level.

Further, TRAI may focus prescribing guidelines on strengthening IP layer security by specifying adoption of recognised technical standards—such as DNS Security Extensions (DNSSEC) for authenticating DNS responses, BGP security and routing hygiene measures to prevent route hijacks and leaks, and network wide DDoS mitigation practices—while deliberately avoiding prescriptive, location specific mandates on where IP interconnection points (POIs) must be established. In such an approach, TRAI would encourage or require TSPs and other licensees to implement best practice configurations (for example, DNSSEC validation, secure BGP routing, RTBH/Flowspec based DDoS controls, and CERT In aligned mitigation guidelines) but leave operators flexibility to design their own POI topology, so long as they meet QoS, redundancy and security outcomes.

Q6. (a) Should IP-based interconnection be mandated for new interconnections in the regulatory framework? Kindly justify your response.

(b) Should TSPs be mandated to migrate existing TDM based E1 interconnection to IP-based interconnection within a specified period? If yes, suggest timelines. Kindly justify your response.

Response:

(a) ISPAI is of the view that IP-based interconnection should be mandated for all new PoIs. The global transition toward IP interconnect is well-established, with international standard-setting bodies having already defined mature technical specifications and migration frameworks. The Authority, in its *Recommendations on Revision of the National Numbering Plan (6 February 2025)*, has also acknowledged that IP-based interconnection represents the most efficient and future-proof architecture for managing voice traffic and ensuring numbering integrity. As modern telecom networks are inherently IP-native, continued reliance on legacy TDM connectivity results in unnecessary protocol conversions, additional latency, and inconsistent quality of service. Mandating IP-based interconnection for all fresh interconnections is therefore both timely and essential.

(b) ISPAI further submits that existing TDM-based E1 interconnections should be required to migrate to IP-based interconnection within a clearly defined and reasonable timeframe. Most operators have already transitioned to all-IP core networks and provide nationwide 4G and 5G services, where IP-interconnect is fundamental for achieving consistent QoS and enabling future services such as inter-operator video calling. A time-bound migration framework will help establish uniform IP-based PoIs at the LSA level, remove protocol conversion inefficiencies, and ensure harmonised interconnection across networks. Given the maturity of domestic IP deployments and extensive global experience with such transitions, a regulatory mandate for migration is both appropriate and necessary to support a modern, efficient interconnection ecosystem.

However, such mandatory migration structure must incorporate explicit safeguards against cost pass-through to non-access service providers (such as enterprise TSPs), justified by the asymmetric traffic economics where access providers generate disproportionate origination/termination volumes, yet enterprise backhaul remains mission-critical for national digital infrastructure.

Q7. Should the existing processes of ‘provisioning and augmentation of ports at POIs’ under Chapter IV of the TIR 2018 in respect of following need revision:

- i. **Seeking of ports at POIs,**
- ii. **Request for initial provisioning of ports, and**
- iii. **Request for augmentation of POIs? Kindly provide your response with justification.**

Response:

The existing interconnection framework is operating effectively across all private service providers. The sole exception pertains to BSNL's non-adherence to the prescribed timelines. ISPAI submits that, instead of revisiting or modifying the established regulatory timelines, the priority should be to ensure BSNL's full and timely compliance with the existing provisions. This will uphold regulatory certainty, maintain uniformity in implementation, and prevent unnecessary disruption to an otherwise smoothly functioning framework. Further, TRAI may also recommend simplification of port provisioning process by way of adopting automation with standardised SLAs to replace any lengthy manual procedures with digital workflows and clear timelines. This supports rapid scaling (cost-efficient growth) and reduces entry barriers by speeding up interconnect setup.

It is also submitted that Internet peering, transit, IP-VPN, CDN offload, and cloud interconnect related service should not be brought under the ambit of regulatory POI framework and continue to be driven by commercial agreements.

Q8. Should the existing framework for Interconnection process and timelines, as provided in the existing TRAI regulations including, The Telecommunication Interconnection Regulations (TIR) 2018, The Telecommunication Interconnection (RIO) Regulations, 2002, and The Telecommunication Interconnection (Charges and Revenue Sharing) Regulation 2001 be revised or continued. Kindly indicate challenges, if any, currently being faced in the implementation of the framework by the TSPs and their possible remedies. Kindly provide your response with detailed justifications.

Response:

1. ISPAI observes that the TIR 2018 framework has matured into a robust, stable and comprehensive regime that adequately covers the operational, procedural and technical dimensions of interconnection. The timelines prescribed under the framework are practical and well-aligned with the sector's implementation capabilities. Accordingly, rather than a complete restructuring, attention should be focused on three targeted improvements:
 - a. mandating migration to IP-based interconnection;
 - b. ensuring full and uniform implementation of LSA-level Points of Interconnection; and
 - c. strengthening compliance with prescribed timelines across all operators.
2. Despite clear regulatory direction, progress on these key improvements has been adversely affected by the continued reliance of one operator on legacy arrangements. This underscores the need for stronger enforcement measures to ensure that compliance is uniform, timely and not dependent on the pace of a single service provider. Effective enforcement is essential to maintain regulatory certainty and to prevent operational inefficiencies for the rest of the ecosystem.
3. ISPAI further notes that the functional provisions of the Telecommunication Interconnection (RIO) Regulations, 2002 and the Telecommunication Interconnection (Charges and Revenue Sharing) Regulation, 2001 have largely been subsumed within TIR 2018 and the IUC 2003 framework. Given the limited residual relevance of these legacy regulations, they may be repealed, and any remaining principles—if still required—can be appropriately consolidated within TIR 2018 or integrated into the proposed Indian Interconnection Code for greater regulatory coherence.

Q9. Whether there is a need to revise the existing process of disconnection of POIs as provided in the regulation 11 of the Telecommunication Interconnection Regulations (TIR) 2018? If yes, what specific changes should be done in the disconnection procedure? Kindly justify your response.

Response:

ISPAI is of the view that the existing procedure governing POI disconnection is based on well-established principles and already provides sufficient opportunity for the non-compliant party to rectify deficiencies. The current timelines and safeguards are adequate, and therefore no modification to the framework is warranted.

Further, as interconnection progressively consolidates at higher aggregation levels and the sector moves toward genuine reciprocity in interconnection charges, the likelihood of disputes is expected

to reduce substantially. In such an environment, the need to invoke POI disconnection provisions will naturally become minimal.

Q10. Is there a need to introduce a process for the surrender or closure of POIs in the regulatory framework? If yes, what should be the criteria, procedure, charges, and timelines, including the minimum retention period for POIs before a surrender or closure request can be made? Kindly justify your response.

Response:

1. ISPAI is of the view that the surrender of POIs should continue to be a regulated activity so long as SDCA-level POIs remain in operation. A reasonable advance notice period—preferably in the range of 15 to 30 days—should be mandated to ensure that the receiving operator has adequate time to reroute or migrate its traffic without service disruption.
2. Further, once a POI-surrender notice has been issued, all interconnection-related charges associated with that POI should cease upon completion of the notice period. Any additional costs arising due to delays in decommissioning the POI thereafter should be borne exclusively by the operator responsible for such delay and should not be imposed on the other party.

Q11. In order to safeguard the interest of TSPs arising due to financial obligations of interconnection, is there a requirement for furnishing bank guarantee by one TSP to the other TSP? If yes, please provide the process and methodology for determining the initial bank guarantee amount and any subsequent bank guarantee amount, if required. Kindly justify your response.

Response:

ISPAI does not support the proposal to mandate Bank Guarantees for securing interconnection-related financial obligations. Interconnection is a core licence obligation, and all payments associated with it are already governed by a well-established regulatory framework under the applicable TRAI Regulations. Moreover, interconnecting entities are licensed operators with significant financial commitments, audited compliance requirements, and continuous regulatory oversight. In this context, the imposition of Bank Guarantees is unnecessary, adds avoidable administrative burden, and duplicates safeguards that already exist. ISPAI therefore submits that such a requirement should be withdrawn.

ISPAI also suggest TRAI to review the requirement of bank guarantees for interconnection-related payments made to BSNL. These guarantees could be calibrated based on operator risk profiles and prevailing industry norms. BSNL should be treated at par with other market players.

Q12. Should a procedure be established for addressing delays in the payment of interconnection-related charges? If yes, what should be the procedure to address such delays? Kindly provide your response with justification.

Response:

There is a need for an establishing standardized procedure for resolving delays in interconnection charge payments, building on existing penal interest provisions in interconnect agreements. Without such uniformity, regulatory and commercial disputes proliferate, undermining financial discipline and inter-operator harmony. Timely IUC settlement is critical for sector stability, ensuring equitable treatment across TSPs and preventing uneven enforcement that distorts competition.

Q13. Is there a need to revise the financial disincentive framework as provided in these regulations. If yes, what specific changes should be done? Kindly justify your response.

Response:

1. ISPAI is of the view that the existing financial disincentive of ₹1 lakh per day per Licensed Service Area for violations of the Interconnection Regulations is already strong, well-established, and adequate to ensure compliance. We do not see any basis for revisiting or strengthening this mechanism.
2. It is important to note that interconnection-related non-compliance today is largely confined to one operator, with no comparable issues observed among the rest of the industry. In such a scenario, the priority should be strict enforcement of the current Regulations rather than introducing additional layers of financial disincentives, which may impose unnecessary regulatory burden without addressing the core problem.
3. While ISPAI maintains a broader reservation on the concept of financial disincentives in a mature regulatory environment, it recognises that the framework must remain effective and capable of ensuring adherence to prescribed timelines and obligations.
4. For delays in settlement of interconnection-related charges, a fair and efficient solution is to expressly permit the invoicing operator to adjust or set off outstanding dues against amounts payable by it to the defaulting operator. This right of set-off should be explicitly codified in the regulatory provisions, irrespective of the specific contractual terms in the interconnection agreements.

A.2. The Short Message Services (SMS) Termination Charges Regulations, 2013

Q14. Is there a need to revise the existing SMS termination charge? If yes, what are the considerations necessitating such a revision? If not, kindly provide justification.

Response:

1. SMS Termination charge should be cost-based and adhere to the "work done" principle. An operator, who have established only an SMSC (Short Message Service Centre) should not be compared with full-fledged Telecom Service Providers (TSPs) who have established large mobile networks (BTS/BSC/MSC) and should be liable to pay proportionately more termination charges.
2. There are several key considerations that necessitate a review and potential revision of the current SMS termination charge regime:
 - a. Technological advancements - The telecommunication industry is undergoing a significant shift from traditional telecom networks to modern IP-based networks. The 2 paise charge towards SMS termination charge remained unchanged for "quite some time," may no longer reflect the actual cost of involved to modernized the networks.
 - b. Changed Market Dynamics and Bulk Usage - There is increasing reliance on SMS traffic for critical functions (e.g., OTPs, banking alerts) and a surge in bulk SMS usage by enterprises and public service providers. The current charge needs to be examined to ensure it remains reasonable and equitable in terms of recovering actual costs and ensuring a level playing field for all market participants.
 - c. Termination charge should be cost-based and adhere to the "work done" principle. An operator, who have established only an SMSC (Short Message Service Centre) should not be compared with full-fledged Telecom Service Providers (TSPs) who have established

large mobile networks (BTS/BSC/MSC) and should be liable to pay proportionately more termination charges.

3. A2P messaging, which includes promotional, service, and transactional SMS, has now grown to be substantially larger than the P2P segment. While the TCCCPR 2018 specify certain charges for these messages, ISPAI submits that there is a clear and continuing need for a strong, deterrent A2P SMS termination charge to effectively curb unsolicited commercial communication.
4. Despite the well-established requirement for strengthening this deterrent, the Second Amendment to TCCCPR 2018 did not address the matter. We therefore urge the Authority to use the present consultation to revise the A2P SMS termination charge upward, alongside any carriage charges payable to NLDOs for inter-LSA message transport.
5. In addition, A2P voice calls have now become an even more serious source of consumer disturbance. ISPAI requests the Authority to prescribe a deterrent termination charge for A2P voice calls as well. If introduction of such a charge is not feasible within the existing framework, the Authority may alternatively consider placing A2P call termination charges under forbearance. The demonstrable success of deterrent A2P SMS termination charges in reducing SMS-based spam clearly indicates that similar measures are required to address the rapidly growing problem of A2P voice spam.

- Our Recommendation:

- a. IUC SMS charge of 2 paise should be reviewed on cost-based and "work done" principle.
 - b. SMS Termination charge on promotional SMS should be reviewed upward and increase from up to 5 paise (₹0.05) termination charge to 7 paise, in order to further curb misuse and discourage spam.
6. Further, all international SMS traffic (including A2P messages) must be routed through ILDO gateways for ensuring regulatory oversight and prevention of bypassing the ILD networks. Considering the fact that the interconnection framework serves as the backbone, ensuring all stakeholders involved (MNOs, aggregators, ILDOs) adhere to standardized routing and reporting processes, therefore, TRAI should ensure enforcement of SMS Aggregation directions for routing of all international SMS through ILDOs with definitive cost of SMS termination in line with the SMS termination charges defined for inter access operator handover.

Q15. Is there a need to prescribe SMS carriage charges when an NLDO carries SMS between the LSAs? If yes, what principles and methodology should apply? If not, kindly provide justification.

Response:

1. Yes, ISPAI is of the view that there is a need to prescribe SMS carriage charges when an NLDO carries SMS between the LSAs having technical and economic reasons to prescribe a carriage charge.
2. The need for a charge is based on the core regulatory principle of compensation for service provision, which is emphasized in the provided context regarding termination charges:
 - a. If an NLDO is mandated to carry traffic across its network, it is performing a necessary function and incurring costs (network infrastructure, maintenance, signaling, transit). Therefore, a charge is necessary to compensate the NLDO for the work done in transporting the message from the originating LSA to the terminating LSA network.

- b. Fair Compensation - The interconnection framework is "designed to ensure fair compensation to service providers for delivering messages that originate from other networks." This principle applies not just to termination but to all necessary legs of the interconnection path, including carriage by an NLDO.

Prescribing a fair, cost-based carriage charge ensures the NLDO has the incentive to maintain and upgrade the network infrastructure required to efficiently handle SMS transit across the country, aligning with the goal of fostering innovation.

A.3. Intelligent Network Services in Multi-Operator and Multi-Network Scenario Regulations, 2006

Q16. Is there a need to revise the existing access charge to be paid by the service provider to the originating provider for IN services? If yes, kindly provide detailed explanation; if not, kindly provide justification.

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Q17. Are there any difficulties that service providers encounter in complying with existing IN Regulations, 2006 in Multi-Operator and Multi-Network Scenario? Kindly describe these challenges in detail and suggest possible regulatory remedial measures to overcome these challenges.

Response:

ISPAI submits that the Regulation has effectively facilitated IN service interconnection on a reciprocal charge basis and continues to operate efficiently. No operational issues have been observed, nor are any anticipated.

Although the said regulations prescribe an IN-interconnect charge of ₹0.52/minute, PSU operators continue to levy ₹0.78/call/MOU for traffic originating from private operators. This creates an unfair, non-reciprocal charging regime and results in an unjustified financial burden on private operators. To ensure parity and compliance with the regulatory intent, all IN interconnect charges should be strictly reciprocal across all operators, including PSU operators.

This creates an unfair, non-reciprocal charging regime and imposes an unjustified financial burden on private operators.

To address this imbalance:

- **IN interconnect charges should be strictly reciprocal** across all operators, including PSU operators, to ensure parity and compliance with the principle of non-discrimination.
- **Incoming call capability should be enabled on the 1600xx series** under the same regulatory and charging framework applicable to the 1800xx series—i.e., governed by IN Regulations with an interconnect charge of ₹0.52 per minute.
- The Authority should **issue clear directions** to enforce uniformity and prevent arbitrary charging practices that distort competition.

These measures will promote fairness, reduce disputes, and align the charging framework with the original intent of the IN Regulations.

1. A primary contributing factor to the very low penetration levels observed in IN (Intelligent Network) services is the high cost of service resulting from the current Interconnect Usage Charges (IUC). To enable the provision of competitive and attractive pricing for both Enterprise and SME customers, ISPAI recommend to implement bill & keep regime.

2. This will significantly boost the adoption of Toll-Free services, which are a crucial and often mandatory communication solution, particularly within sectors like Banking.
3. The IN-interconnection regulation while it allows direct access to subscribers for ILDO/NLDOs through calling cards has not ever come into actual implementation by any of the service providers due to the forbearance of revenue share to be agreed between ILDO/NLDO and the Access operators. Therefore, there is a need to review the same and provision for IUC for such interconnection for the NLDOs/ILDOs should be made to facilitate better call quality experience for long distance calls and further competition for ease of consumers
4. Further, definition of Interconnection for International Toll-Free Services between ILDOs and Access Operators should be determined to be in line with ILD Termination traffic interconnection points.

A.4. TRAI (Transit Charges for BSNL's Cell One Terminating Traffic) Regulations, 2005

Q18. Is there a need to revise the Telecom Regulatory Authority of India (Transit Charges for Bharat Sanchar Nigam Limited's CellOne Terminating Traffic) Regulation, 2005? Kindly provide your response with justification.

Response:

ISPAI submits that this Regulation was introduced pursuant to an order of the Hon'ble TDSAT to prevent the imposition of unlawful transit charges by BSNL for routing calls to CellOne subscribers, and therefore does not warrant reconsideration at this stage. Furthermore, the Regulation is expected to become redundant once the industry completes the transition to LSA-level POIs, where all P2P traffic will be exchanged on a no-cost basis between interconnecting parties.

A.5. The Telecommunication Interconnection Usage Charges Regulations, 2003

Q19. The existing interconnection regulatory framework provides for application of origination, carriage, transit, transit carriage and termination charges for various levels of interconnections for PSTN-PSTN, PLMN-PLMN, PLMNPSTN. Based on the interconnection regulatory framework suggested in your response in Questions 1, 2 and 3 above, should there be a review of these charges? Kindly justify your response.

Response:

1. ISPAI notes that domestic inter-operator IUC has transitioned to a Bill-and-Keep (BAK) framework, which continues to function effectively. In this context, there is no need to revisit the existing arrangements for call origination, carriage, or termination.
2. The only outstanding concern pertains to the continued imposition of transit charges by BSNL. Given the current traffic patterns in fixed-line networks, the continuation of this levy is both unjustified and outdated.
3. Furthermore, with the proposed move towards LSA-level and centralised interconnection, each operator will manage the delivery of traffic to its own subscribers. Under such an arrangement, transit charges no longer serve any operational purpose and are inconsistent with the principles of fairness and reciprocity. ISPAI therefore urges the Authority to eliminate transit charges entirely.

4. Also, there is a need for determination of termination charges for International Toll-Free services along with interconnection point determination in line with IUC applicable for ILD termination traffic.

Q20. For termination of emergency calls/SMSs from one TSP's network to another TSP's network, should there be a provision of any additional charges other than applicable IUC? If so, what should be the charges and the basis thereof?

Response:

1. ISPAI submits that the handling of emergency calls and SMS constitutes a fundamental public safety obligation and must not be treated as a revenue-generating activity by any service provider. Even though emergency services are provided to customers free of charge, and despite the regulatory mandate for universal access, the PSU operator continues to levy excessive charges on private operators, both lump sum and per-call. These charges have escalated significantly over time, with no clear cost basis or regulatory approval. This creates a disproportionate financial burden on private operators and is inconsistent with the policy objective of accessible and equitable emergency services for all. there should be no provision for any additional charges beyond the applicable Interconnection Usage Charges (IUC) for the termination of emergency calls or SMS between operators' networks. Emergency communication is a critical public service, and imposing extra charges would create unnecessary financial barriers and operational complexity
2. At present, BSNL levies annual lump-sum fees for managing emergency traffic, with an automatic 10% escalation each year, despite a nearly 50% reduction in call volumes following the shift to PSAP-based routing. As call volumes are expected to decline further, these charges impose an undue financial burden on TSPs for delivering a statutory public service. ISPAI therefore urges the Authority to discontinue such charges through a clear regulatory directive.
3. To ensure reliable routing of emergency calls, PSAP operators should be incorporated within the Interconnection framework. This would require them to provision adequate capacity, maintain agreed service levels, and provide SIP-based connectivity to avoid dependence on TDM converters. Additionally, PSAPs should ensure connectivity to at least two sites to strengthen redundancy and minimize reliance on BSNL for overflow handling.

Q21. Should the International Termination Charges (ITC) for international incoming calls to India be revised? If yes, what are the considerations necessitating such a revision. Kindly provide your response with justification.

Response:

1. ISPAI submits that the revision of International Termination Charges (ITC) for incoming international voice traffic remains a critical and unresolved matter that requires urgent intervention by the Authority. The current ITC range of Rs. 0.35–Rs. 0.65 per minute, as specified in the 16th Amendment to the IUC Regulations (7 April 2020), warrants a comprehensive review. The ceiling should be increased immediately to at least ₹4–₹5 per minute to partially bridge the gap between Indian and global rates.
2. The existing range is clearly inadequate and fails to reflect prevailing global cost realities. There is a compelling case for a substantial increase in ILD termination rates. India continues to maintain some of the lowest ITC rates worldwide, even as termination charges to several

smaller countries—including those in the Middle East—remain significantly higher. This disparity underscores the lack of cost reciprocity.

3. Another critical consideration is that settlements for both incoming and outgoing ILD voice traffic are conducted in U.S. dollars. With the Indian rupee depreciating consistently over recent years, the effective cost of outbound international termination has risen considerably for Indian operators. Increasing ISD tariffs for domestic subscribers (who pay in INR) is not viable due to limited price elasticity, as OTT applications already erode traditional telephony revenues. Consequently, the only practical corrective mechanism is to raise the ITC payable by foreign operators for terminating calls into India.
- The revision should consider the following aspects:
 - The trend of International incoming traffic to India is showing a significant decrease in the last few years hence upward revision in termination is not recommended as it further accelerate the traffic decline
 - Include measures to deter grey routes: Presence of grey routes is a direct revenue leakage, and grey routes are primarily thriving when the cost of termination is high.
 - Ensure non-discriminatory application across all operators.
 - Access Service provider are offering discriminatory rate of ITC (international termination charge) between its own associated ILDO and standalone ILDOs. There is a need to ensure parity between Stand-alone ILDOs and integrated operators to ensure level playing field.
 - Shift ILD incoming pulse: ILD networks are also experiencing a significant rise in spam and flash calls. Flash call, triggered automatically and disconnected almost instantly for verification purposes, do not carry a termination charge because they are not answered. They simply appear as missed calls for the recipient. These near-zero-duration calls are diverting traffic away from conventional voice and SMS channels since they generate no billable minutes. At the same time, they inflate signalling load, creating operational cost pressure without corresponding revenue.
 - Also, increase in ITC will not impact any retail tariffs for Indian consumers, and it will increase foreign exchange inflow to the country.

Q22. Is there a need to address the issue of telemarketing and robo-calls within the interconnection framework? If yes, kindly provide your inputs on the possible approaches. Kindly justify your response.

Response:

The issue of telemarketing and robo-calls is already comprehensively addressed under the existing regulatory framework, particularly through the Telecom Commercial Communications Customer Preference Regulations (TCCCPR) and its subsequent amendments. Therefore, there is no requirement for separate or distinct treatment within the interconnection framework at this stage.

It is recommended that:

- The existing interconnection framework be retained.
- All voice communications intended for commercial purposes, including P2P calls used for business communication, telemarketing, and robo-calls, continue to be governed under the TCCCPR framework; and

- Any entity using voice calls for commercial purposes be mandatorily registered on the DLT platform to ensure accountability and traceability.

While telemarketing and robo-calls remain a valid regulatory concern, the issue does not warrant separate treatment within the interconnection framework. The existing regulatory mechanisms, supported by DLT-based controls, are adequate to address UCC, provided they are consistently enforced. Any future enhancements should focus on strengthening compliance and transparency within the current framework rather than restructuring interconnection architecture.

A.6. The Telecommunication Interconnection (Reference Interconnect Offer) Regulations, 2002

Q23. Is there a need to revise ‘The Telecommunication Interconnection (Reference Interconnect Offer) Regulation, 2002’? If yes, kindly provide the specific revisions. Kindly provide your response with justification.

Response:

1. ISPAI submits that there is no need to revise the existing RIO Regulations, given the substantial evolution of the telecom sector and technology over the last two decades. These regulations were initially critical during the early phase of private sector entry, when interconnection with incumbent government operators posed significant challenges. At that time, the framework effectively promoted competition in both mobile and fixed services and ensured equitable access to interconnection for all operators.
2. With the issuance of the Telecommunication Interconnection Regulations, 2018—which clearly define interconnection obligations and establish timelines for all related processes—the relevance of the 2002 RIO Regulations has substantially diminished. Accordingly, ISPAI submits that these Regulations may be repealed.
3. ISPAI further notes that TIR 2018 already contains sufficient safeguards to protect smaller or new entrants in situations where negotiating power may be asymmetric.

Q24. For the purpose of interconnection, is there a need to revise the current categories of ‘Services’ and ‘Activities’ to determine Significant Market Power (SMP)? Kindly provide your response with justification.

Response:

ISPAI submits that revisiting the categories of ‘Services’ and ‘Activities’ for the purpose of determining Significant Market Power (SMP) is not warranted at this stage. The Authority’s earlier attempt to redefine the SMP framework through the 63rd Amendment to the Telecommunication Tariff Order is currently sub judice before the Hon’ble Supreme Court, following challenges by certain stakeholders. In light of the matter being under judicial consideration, ISPAI recommends that any further deliberation on modifying SMP parameters be deferred until the court’s decision is rendered.

Q25. Should the publication of Reference Interconnect Offers (RIOs) on the websites of Telecom Service Providers (TSPs) be mandated? Kindly justify your response.

Response:

ISPAI submits that mandating the publication of RIOs on the websites of TSPs is not necessary. The telecom industry already functions on standardized interconnection agreements built on reciprocity, which are uniformly extended to all operators. Moreover, all such agreements are mandatorily filed with TRAI, allowing the Authority to independently verify adherence to reciprocity and non-discrimination principles. Consequently, requiring public publication of RIOs does not add any practical value and may be dispensed with.

A.7. The Telecommunication Interconnection (Charges and Revenue Sharing) Regulations, 2001

Q26. Should there be any interconnection charges? If yes, kindly provide details about the following:

- a. the types of infrastructure charges to be levied,**
- b. the guiding principles for determining such charges along with ceiling, if required, and**
- c. determination of time-based escalation methodology, if required.**

Kindly provide your response with justification.

Response:

1. ISPAI agrees that the principles in the 2001 Regulations—cost-based charging, consideration of incremental costs, non-discrimination, and no charges for unrequested services—remain valid. However, these principles have largely not been applied in practice. Certain operators, notably BSNL, have imposed unilateral interconnection charges despite these guiding principle.
2. Beyond regulated charges, BSNL levies additional unilateral charges that require regulatory oversight. A key example is the POI infrastructure charge, which is linked to city categories and escalates by 10% annually, effectively doubling over the last decade.
3. BSNL also mandates private operators to build media for its own traffic and then levies infrastructure charges on that media. This practice is inequitable and, if retained, should strictly follow a reciprocal, fair approach.
4. Additional charges imposed by BSNL for POI shifting or surrender include, Passive media charges, Duct charges, Six months of infrastructure charges at the existing POI, One year's port charges at the existing POI as surrender charges, Set-up charges Fresh port charges at the new POI for equivalent E1s
5. These charges lack reasonable justification and impose an undue financial burden on private operators. ISPAI recommends that such charges be regulated to ensure fairness, transparency, and alignment with established regulatory principles.

Q27. Whether following sections of The Telecommunication Interconnection (Charges and Revenue Sharing) Regulations, 2001:

- a. Section IV which contains 'Revenue Sharing Arrangements' i.e. interconnection usage charges.**
- b. Schedule I and II which contains rates of interconnection usage charges. still hold relevance, in view of the subsequent issuance of the Regulation 4 under Section IV which specifies rates of 'Interconnection Usage Charges (IUC) under 'The Telecommunication Interconnection Usage Charges Regulations, 2003'. Additionally, is there an alternative way to organize these two regulations to enhance clarity and ease of understanding?**
- c. Kindly provide your response with justification.**

Response:

1. ISPAI submits that the operational provisions of the of the Telecommunication Interconnection (Charges and Revenue Sharing) Regulations, 2001, including Section IV on Revenue Sharing and Schedules I & II specifying IUC rates, have been effectively superseded by the Telecommunication Interconnection Usage Charges Regulations, 2003, and the Telecommunication Interconnection Regulations, 2018. Consequently, the 2001 framework no longer serves any practical purpose and may be repealed.
2. If the Authority deems it necessary to retain certain guiding principles from the 2001 Regulation—such as cost-oriented charging, consideration of incremental or additional costs, non-discriminatory treatment among TSPs, and prohibition of charges for unrequested services—these can be incorporated within the TIR 2018. This approach would ensure continuity of relevant principles while consolidating operational provisions into a single, contemporary regulatory framework

A.8. Telecommunication Interconnection (Port Charges) Regulations, 2001 and Its Amendments

Q28. Is there a need for change, if any, required in respect of following:

- i. **Port Technology**
- ii. **Port Size (Capacity)**
- iii. **Port Charges**
- iv. **Any other related aspect**

Kindly provide a detailed response with justification.

Response:

1. ISPAI submits that there is a strong and immediate need to update the regulation to reflect current industry realities. The existing E1 port charges, set over a decade ago, no longer correspond to actual provisioning costs due to widespread IP adoption, increased traffic volumes, and economies of scale.
2. Legacy port charges, especially in the context of TAX switches that are now largely obsolete, are outdated and should be substantially reduced. The proviso in TIR 2018 (5 July 2018) that maintains pre-2018 charges entrenches unilateral practices by BSNL/MTNL and undermines fairness, transparency, and reciprocity. This proviso should therefore be removed, and any revised charges should apply to all ports irrespective of their provisioning date.
3. Technological convergence, changes in traffic patterns, and the shift to bill-and-keep frameworks further justify revising port charges and eliminating redundant regulatory provisions.
4. The Authority should re-evaluate E1 port charges and prescribe IP port charges to facilitate the full transition to IP-based interconnection.
5. Specifically, ISPAI recommends:
 - a. Comprehensive review and significant reduction of port charges.
 - b. Application of revised charges to all operational ports without exception.
 - c. Withdrawal of the port-charge-related proviso in TIR 2018.
 - d. Mandating BSNL/MTNL compliance with TIR 2018 and bearing costs of their own ports post-bifurcation.
 - e. Prohibiting BSNL/MTNL from imposing arbitrary or unjustified port and infrastructure charges.

Q29. Should port charges be uniform across all services and technologies? Kindly provide detailed response for the following categories specifically:

- a. **Fixed Line Service/ Mobile Service/ NLD service/ ILD service, and**

b. E1 (TDM) based interconnection and IP based interconnection. In case non-uniform charges are suggested, what methodology should be followed for calculation of port charges for above mentioned categories of services and technologies.

Kindly provide a detailed response with justification.

Response:

1. ISPAI submits that the Port charges should be uniform across all services. For IP-based interconnection, charges can be determined using a cost-based methodology.
2. Port charges must be revised to reflect actual costs. The Authority should ensure that port charges and any associated Bank Guarantees are applied on a reciprocal basis. The implementation of centralized IP POIs is expected to further enhance efficiency and fairness in port charge arrangements.

Q30. Whether use of 'Erlang' as a unit of traffic in various interconnection regulations is sufficient and are the current procedures for demand estimation as provided in the Telecommunication Interconnection (Port Charges) Regulation 2001 and the TIR 2018 still effective and practical, in view of adoption of IP based interconnection?

a. If yes, kindly provide justification in support of your response.

b. If no, kindly provide alternate metrics and demand estimation methods for IP-based interconnection along with detailed explanation. In either case, kindly provide suitable diagrammatic representation.

Response:

No, the use of 'Erlang' as a unit of traffic in interconnection regulations is no longer sufficient, and the current demand estimation procedures under the *Telecommunication Interconnection (Port Charges) Regulation, 2001* and *TIR 2018* are outdated in the context of IP-based interconnection.

- a. Limitations of Erlang-Based Estimation: Erlang-based models were designed for circuit-switched networks and do not accurately represent traffic patterns in packet-switched IP environments. They fail to capture dynamic bandwidth utilization and flow characteristics inherent in modern networks.
- b. Recommended Approach: Instead of Erlang, throughput and flow-based metrics should be adopted for IP-based interconnection. These metrics provide a more accurate reflection of real-time traffic and capacity requirements.

During the migration phase, a hybrid approach combining Erlang for legacy TDM traffic and throughput-based metrics for IP traffic can be implemented to ensure smooth transition.

A.9. The Register of Interconnect Agreements Regulations, 1999

Q31. Should the current provisions for submission, inspection and getting copies of interconnection agreements under 'The Register of Interconnect Agreements Regulations, 1999' using floppy disks and print copies be dispensed with and be made online?

a. If yes, what changes do you suggest for the online process, timelines, related charges and any other aspect?

b. If not, kindly provide justification.

Response:

1. ISPAI submits that while submission of Interconnect Agreements remains necessary, the current requirement to furnish two printed copies can be fully digitized. Instead of physical filings, agreements can be uploaded to a TRAI-managed online portal, removing the need for hard-copy submissions.
2. TRAI has already progressed toward a paperless compliance ecosystem, with multiple reports, filings, and correspondences accepted electronically. Extending this approach to Interconnect Agreements would reinforce environmentally responsible practices.
3. Accordingly, ISPAI proposes that the existing regulatory provisions be amended to discontinue paper-based submissions and enable TSPs to fulfill all compliance requirements through an online submission mechanism.

B. Generic Questions pertaining to all existing interconnection regulations

Q32. Is there a need to incorporate provisions for financial disincentives in interconnection regulations to deter non-compliance? If yes, kindly provide specific scenarios and mention the concerned regulations, where financial disincentives would be applicable, along with their quantification. Kindly justify your response.

Response:

ISPAI submits that introducing additional financial disincentives (FD) is unnecessary in a mature telecom market. Regulatory focus should remain on ensuring balanced, transparent, and enforceable provisions that drive compliance without relying on punitive measures. Furthermore, the Telecommunication Interconnection Regulations, 2018 already incorporate FD mechanisms; therefore, there is no justification for adding or expanding such provisions.

Q33. What should be the mechanism and timelines for transition of existing interconnection agreements between the service providers to the new regulatory framework that will emerge from this consultation process? Kindly provide detailed response with justification.

Response:

The mechanism and timelines for transitioning existing interconnection agreements to the new regulatory framework emerging from this consultation should be finalized in close consultation with operators and industry stakeholders.

This approach will:

- Ensure practical and achievable timelines that reflect operational realities.
- Minimize disruption to ongoing services while enabling a smooth migration.
- Promote industry-wide consensus on processes, reducing disputes and compliance challenges.

The Authority should:

- Define a phased migration plan with clear milestones.
- Provide guidelines for harmonizing legacy agreements with the new framework.
- Incorporate digital tools for submission and tracking to streamline the transition process.

Q.34. What should be the interconnection framework for satellite-based telecommunications networks with other telecom networks? Further, whether the interconnection frameworks for MSS and FSS satellite-based telecommunications networks should be distinct? Please provide your response along with end-to-end diagrammatic representation and justification in respect of the following:

- a. Satellite - Satellite network interconnection**
- b. Satellite - PLMN interconnection**
- c. Satellite - PSTN interconnection**

Response:

ISPAI submits that there is no requirement for a separate interconnection framework for satellite-based networks. Since satellite communication services are offered only under Access Service authorization, these providers should interconnect with other telecom networks—including PLMN and PSTN—under the existing interconnection regime applicable to all access service providers.

Q35. Are there any specific regulatory models from other countries that have successfully addressed interconnection related issues and challenges which can be adapted in the Indian telecom sector? If yes, kindly provide details of such international best practices.

Q36. Kindly mention any other challenges or concerns related to the regulations being reviewed in this consultation paper.

Response : No Comments
