Internet And Mobile Association Of India

IAMAI Counter Comments on TRAI Consultation Paper on Review of Existing TRAI Regulations on Interconnection Matters

---

On 10 November 2025, the Telecom Regulatory Authority of India (TRAI) released the Consultation Paper on 'Review of existing TRAI Regulations on Interconnection Matters' ('Consultation Paper'). At the outset, we appreciate the opportunity to present our counter comments on the Consultation Paper. We have taken feedback from our members and outlined our counter comments below.

IAMAI Submission

Question 1. 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.

&

Question 2. 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.

&

Question 3. 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.

IAMAI Response

For PSTN-to-PSTN, PLMN-to-PSTN, and PSTN-to-PLMN interconnections, the interconnection level should be standardised at the LSA level. Additionally, existing Points of Interconnection (PoIs) currently deployed at the LDCA/SDCA level must be migrated to the LSA level within the prescribed timelines. The current architecture, which facilitates interconnection at the SDCA/LDCA level, was originally designed for legacy TDM/E1 hierarchical networks and is no longer optimal for modern requirements.

A highly decentralised interconnection model that mandates SDCA/LDCA-level connectivity serves neither operators nor customers effectively. Such an approach significantly increases operational costs for operators, which ultimately translates into higher prices for end-users. Moreover, this requirement creates a substantial barrier to the rollout of fixed-line services in smaller towns, where establishing SDCA/LDCA-level interconnection with the PSU operator is compulsory.

Establishing interconnection at the LSA level is both technically efficient and economically prudent for all operators, including the PSU operator. This approach will free up capital and resources currently

tied to SDCA/LDCA sites where equipment is nearing end-of-life. It will also eliminate the need for SDCA/LDCA-level interconnections—a slow, resource-intensive process that delays service rollouts.

Amendments are required to the interconnection level and traffic handover points specified under the Telecommunication Interconnection Regulations (TIR), 2018 and the Guidelines annexed to the Telecommunication Interconnection (Reference Interconnect Offer) Regulations, 2002 ("RIO Regulations").

Question 4. 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.

IAMAI Response

There is no requirement to mandate multi-path resiliency or redundancy within the PoI framework to address potential link failures at the primary PoI for PSTN–PSTN, PLMN–PLMN, and PLMN–PSTN interconnections.

Service continuity and reliability are core to an operator's business, and operators already implement robust network designs with adequate redundancy to mitigate link failures. Existing architectures incorporate these safeguards as part of standard practice.

Therefore, introducing mandatory provisions for multi-path resiliency or issuing additional directions from the Authority would only impose unnecessary compliance burdens on operators without delivering any meaningful benefits.

Question 5. 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.

IAMAI Response

There is no need to introduce additional security provisions within the interconnection framework. Service continuity and reliability are core to an operator's business, and operators already maintain robust security measures as part of standard practice.

Networks are designed with comprehensive safeguards against security threats, and operators are obligated to comply with stringent security requirements under existing license conditions, as well as the recently notified Telecommunications (Telecom Cyber Security) Rules 2025 and Telecommunications (Critical Telecommunication Infrastructure) Rules, 2025.

Imposing further mandatory security provisions or issuing additional directions would only increase compliance burdens without delivering any incremental value.

Question 6. (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.

IAMAI Response

Yes, IP-based interconnection should be mandated for all new interconnections under the regulatory framework. This is essential to ensure interoperability, scalability, and alignment with global best practices. IP-based architecture offers significant advantages over legacy TDM/E1 systems, including higher efficiency, better bandwidth utilisation, and support for advanced services such as VoLTE and next-generation messaging.

Further, operators should be required to migrate existing TDM-based E1 interconnections to IP-based interconnections within a clearly defined and reasonable timeline. This migration will:

- Reduce operational complexity and costs associated with maintaining outdated TDM infrastructure.
- Enable seamless integration with modern IP networks and future technologies.
- Improve service quality and resiliency, leveraging packet-based routing and redundancy inherent in IP networks.

Question 7. 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.

&

Question 8. 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.

IAMAI Response

- Clear and enforceable directions should be issued to ensure that no operator is treated as a perpetual "seeker" beyond the initial two-year period stipulated under the regulations. This will promote fairness and prevent indefinite dependency on other operators for interconnection.

- The bifurcation of PoI capacity, as envisaged under the Telecommunication Interconnection Regulations (TIR), 2018, should be implemented retrospectively from 2018. This must include defined accountability mechanisms and strict redressal timelines to address delays and disputes effectively.
- PoIs should be deemed commissioned within 42 days from the date of application, regardless of pending procedural formalities. Upon completion of this period, the applicant should be permitted to roll out services without further delay. This measure will significantly reduce bottlenecks and accelerate service deployment.

Question 9. 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.

&

Question 10. 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.

IAMAI Response

Yes, there is a clear need to introduce a formal, time-bound process for the surrender or closure of PoIs within the regulatory framework. Currently, requests for PoI or port surrender often receive no response from the PSU operator, resulting in prolonged periods during which private operators continue to incur charges for unused or underutilised capacity. This practice undermines the cost-sharing principle of the regulations and imposes an unfair financial burden on private operators.

To address this, the framework should mandate:

- Standardised procedures and formats for initiating PoI surrender requests.
- Defined timelines for action by the recipient operator (e.g., 30 days from request submission).
- Explicit provisions stating that if the PSU operator fails to act within the stipulated period:
  a. No further charges shall apply beyond the deadline.
  b. The operator shall be free to remove its equipment without penalty.

Question 15. 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.

IAMAI Response

The current regulatory framework does not explicitly prescribe charges for SMS carriage by NLDOs. However, it also does not prohibit the levy of such charges. In fact, several NLDOs have already implemented SMS carriage charges under the existing commercial and regulatory flexibility. Therefore, the extant framework provides sufficient latitude for NLDOs to impose such charges in a fair and transparent manner.

Question 16. 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.

&

Question 17. 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.

IAMAI Response

The existing IN Regulations, 2006 have largely enabled interoperable Intelligent Network (IN) services. However, while the regulations prescribe an IN interconnect charge of ₹0.52 per minute, PSU operators continue to levy ₹0.78 per call/MOU for traffic originating from private 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.

Question 18. 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.

IAMAI Response

No, there is no need to revise the Telecom Regulatory Authority of India (Transit Charges for Bharat Sanchar Nigam Limited's CellOne Terminating Traffic) Regulation, 2005.

Question 19. 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, PLMN-PSTN. 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.

IAMAI Response

Origination charges should continue to remain under forbearance, as this approach promotes flexibility and competitive pricing in the market. There is no need to review the existing ceiling of ₹0.35 per minute on carriage charges for domestic calls, as it remains reasonable and aligned with cost trends.

Further, transit and transit carriage charges should be eliminated. These charges have become redundant in the context of modern IP-based interconnection architectures and only add unnecessary complexity and cost to the interconnection framework. Removing them will:

- Simplify the charging structure.
- Reduce operational overhead for operators.
- Align India's regulatory framework with global best practices for efficient interconnection.

Question 20. 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?

IAMAI Response

No, 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.

Maintaining a zero-additional-charge policy ensures:

- Uninterrupted access to emergency services for all users, regardless of originating network.
- Compliance with global best practices, wherein emergency communications are treated as essential and exempt from commercial considerations.
- Simplification of inter-operator settlements, avoiding disputes and delays in critical scenarios.

Question 23. 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.

IAMAI Response

The Reference Interconnect Offer (RIO) Regulations, 2002 should ideally be subsumed into the Telecommunication Interconnection Regulations (TIR), 2018 to create a unified and streamlined regulatory framework. This consolidation will eliminate duplication, reduce complexity, and ensure consistency in interconnection provisions.

Alternatively, if the Authority considers retaining the standalone RIO Regulations, they must be comprehensively revised to:

- Align with the provisions of TIR 2018.
- Incorporate the proposed LSA-level IP-based interconnection architecture, ensuring compatibility with modern network requirements.

- Remove outdated references to legacy technologies and processes, replacing them with digitalised, transparent mechanisms for interconnection agreements and compliance.

Question 24. 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.

IAMAI Response

No, there is no need to revise the current categories of 'Services' and 'Activities' for determining Significant Market Power (SMP) at this stage. Any review of the SMP framework including the scope and classification of 'Services' and 'Activities' relevant for SMP assessment should be undertaken only after the Hon'ble Supreme Court delivers its final judgment on the matter.

Deferring this review ensures:

- Regulatory stability during an ongoing judicial process.
- Avoidance of premature changes that could lead to inconsistencies or legal challenges.
- A more informed and comprehensive approach once judicial clarity is available.

Question 25. Should the publication of Reference Interconnect Offers (RIOs) on the websites of Telecom Service Providers (TSPs) be mandated?

Kindly justify your response.

IAMAI Response

No, the publication of Reference Interconnect Offers (RIOs) on operators' websites should not be mandated. Interconnection arrangements today operate within a competitive, reciprocal, and well-regulated framework, primarily governed by the Telecommunication Interconnection Regulations (TIR), 2018. Under this regime, mandating public disclosure of RIOs on operator websites is neither necessary nor beneficial.

Question 26. 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.

IAMAI Response

PoI infrastructure charges should be brought under regulatory oversight to prevent unchecked cost escalation and ensure fairness across operators. The revised framework should incorporate the following principles:

1. Transparency and Standardisation

- Clear guidelines on how infrastructure costs—including space, power, and related facilities—are determined and applied.
- Annual escalation provisions should be capped or rationalised to reflect actual cost trends rather than arbitrary increases.

2. Non-Discriminatory Application

- Mutual agreement and uniform treatment of infrastructure charges across all operators, including PSU operators.
- Reciprocal treatment of one-time charges should be mandated to maintain parity.

3. Elimination of Overlapping Charges

- Explicit prohibition of overlapping charges where costs for duct usage, passive cabling, or setup are already included in PoI infrastructure charges.
- PoI-related charges must be non-duplicative, transparent, and cost-based across all locations.

4. Uniform and Rationalised Structure

- A standardised charge framework for PoI provisioning to prevent arbitrary, location-specific cost burdens.
- Charges should be reviewed periodically to ensure alignment with actual cost structures and technological evolution.

Question 27. 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 organise these two regulations to enhance clarity and ease of understanding?

Kindly provide your response with justification.

IAMAI Response

No, Schedule I and II of the Telecommunication Interconnection (Charges and Revenue Sharing) Regulations, 2001 ("Revenue Sharing Regulations"), which specify rates of Interconnection Usage Charges (IUC), and Section IV on 'Revenue Sharing Arrangements' no longer hold relevance. This is because Regulation 4 under Section IV, which prescribes IUC rates, has been superseded by the Telecommunication Interconnection Usage Charges Regulations, 2003.

Accordingly, these provisions are redundant and should be repealed to eliminate duplication and improve regulatory clarity.

Question 28. 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.

&

Question 29. 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.

IAMAI Response

Yes, there is a need for changes in Port Technology, Port Size (Capacity), Port Charges, and related aspects to align with modern IP-based interconnection requirements.

Key Recommendations

1. Cost-Based Port Charges

- Port charges should be revised based on the actual cost-per-bit of IP-based electronic and optical equipment, ensuring fairness and transparency.
- A bi-annual review mechanism should be introduced to keep charges competitive and reflective of evolving technology costs.

2. Phase-Out of Legacy TDM Charges

- Charges for TDM-based ports should be gradually phased out to accelerate migration toward IP-based interconnection.
- This will reduce dependency on outdated infrastructure and promote adoption of next-generation networks.

3. Differential Charging Framework

- Introduce differential port charges based on:
- Service type (Fixed, Mobile, NLD, ILD)
- Port technology (IP vs. TDM)
- Cost-per-bit and traffic volumes
- Capacity utilisation

This approach ensures cost-reflective pricing while incentivising efficiency.

4. Additional Measures

- Standardise port sizing and capacity guidelines for IP-based interconnection.
- Ensure transparency in cost calculations and prevent arbitrary or location-specific variations.

Question 30. 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.

IAMAI 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 utilisation 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.

Question 31. 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.**

IAMAI Response

Yes, the current provisions for submission, inspection, and obtaining copies of interconnection agreements under The Register of Interconnect Agreements Regulations, 1999—which rely on outdated methods such as floppy disks and physical print copies—should be completely dispensed with and replaced by a fully digital, online process.

The revised framework should:

- Enable electronic submission and storage of interconnection agreements through a secure online portal.
- Provide digital access for inspection and retrieval, eliminating manual delays and inefficiencies.
- Incorporate standardised formats and timelines for submission and compliance.
- Ensure data security and confidentiality while allowing the Authority seamless oversight.

Transitioning to an online system will modernise regulatory processes, reduce administrative burden, and align with India's broader digital governance objective

Question 32. 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.

IAMAI Response

Key Recommendations:

a. Uniform Application: FD provisions must apply equally to private and PSU operators, ensuring non-discriminatory enforcement.
b. Scope of FD: FD should specifically address cases of non-compliance with interconnection obligations, particularly where reciprocity in interconnection agreements is not adopted or implemented.
    - Non-reciprocal arrangements create imbalances, unfair financial obligations, and operational inefficiencies, undermining the principles of fair competition.
c. Implementation of Framework:
    - Clearly define scenarios triggering FD, such as delays in PoI provisioning, refusal to honour reciprocal terms, or breach of agreed timelines.
    - Establish transparent quantification of penalties linked to severity and duration of non-compliance.
    - Introduce digital compliance tracking for monitoring and reporting FD cases.

Question 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

IAMAI Response

Satellite-based telecommunications networks operate independently and separately from terrestrial telecom networks, with no interconnection between SatCom and terrestrial systems. In fact, there is currently no interconnection even among different SatCom operators themselves.

Given this architecture, there is no requirement at this stage to establish an interconnection framework for satellite-based telecommunications networks with other telecom networks. Introducing such a framework prematurely would add unnecessary complexity without delivering any operational or regulatory benefit.

Question 35. 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.

IAMAI Response

Regulatory models across the globe indicate that migration to IP-based interconnection has become the industry standard for modern telecom networks. This approach ensures scalability, interoperability, and cost efficiency while supporting advanced services such as VoLTE and next-generation messaging. India should adopt IP-based interconnection at the earliest, aligning with international best practices and future-proofing the telecom ecosystem.

About IAMAI

Established in 2004, the Internet and Mobile Association of India (IAMAI) is a not-for-profit industry body representing India's digital industry with more than 750 members, including Indian and multinational corporations, as well as start-ups. We advocate for free and fair competition, and progressive and enabling laws for businesses as well as for consumers. Our overarching objective is to ensure the progress of the internet and the digital economy. Our major areas of activity are public policy and advocacy, business-to-business conferences, research, promotion of start-ups, and fostering consumer trust and safety.