15th December 2025

Shri Sameer Gupta,
Advisor (NSL-1)
Telecom Regulatory Authority of India
4th, 5th, 6th & 7th Floor, Block-F
World Trade Centre, Nauroji Nagar
New Delhi – 110029

Subject: Response to the Consultation paper on "Review of existing TRAI Regulations on Interconnection matters.

Dear Sir,

This is with reference to the Consultation Paper issued by the Authority on 10 November 2025 titled *"Review of Existing TRAI Regulations on Interconnection Matters."*

In this regard, we, Tata Teleservices Limited (TTSL) and Tata Teleservices (Maharashtra) Limited (collectively referred to as "TTL"), hereby submit our response to the questions raised in the above-mentioned Consultation Paper.

We trust that TTL's submissions will receive due consideration.

Thanking you and assuring you of our best attention at all times.

Thanking you,

Yours sincerely

Mukesh Dhingra
General Manager – Corporate Regulatory Affairs
Tata Teleservices Limited
And
Authorized Signatory
For Tata Teleservices (Maharashtra) Limited

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At the outset, Tata Teleservices Limited and Tata Teleservices (Maharashtra) Limited [together called "**TTL**'] express our sincere gratitude to Telecom Regulatory Authority of India (TRAI) for releasing the Consultation Paper on "Review of existing TRAI Regulations on Interconnection matters" and calling for stake holders' comments.

In this respect we, TTL, would like to submit our response to the issues and concern as mentioned in the Consultation Paper is as follows:

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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.

TTL response:

Interconnection with mobility operators has historically been implemented at the Licensed Service Area (LSA) level. This approach has been consistently adopted for many years as it enhances operational efficiency and optimizes the utilization of telecom infrastructure. Modern telecom networks are mostly IP-based and designed for centralized network architecture and traffic management.

Mandating multiple Points of Interconnection (POIs) at the SDCA/LDCA level introduces significant operational complexity and cost. Furthermore, such a decentralized architecture depends on Time Division Multiplexing (TDM) resources, which constitute legacy infrastructure which is no longer supported or manufactured by Original Equipment Manufacturers (OEMs). Migrating to IP based infrastructure and keeping TDM based interconnection is not ideal way of network architecture deployment.

Further SDCA/LDCA based POI interconnection have following impact from cost benefit analysis point of view

i. High capital expenditure (CAPEX) for maintaining multiple POIs across multiple locations.

ii. Increased operational expenditure (OPEX) for maintenance, and fault management including yearly payout for port and infra charges.

iii. Dependence on obsolete TDM equipment, leading to higher repair costs and risk of service disruption.

iv. Underutilization of POI resources as scope for optimization over multiple PoI reduces

To ensure continued optimization of network infrastructure and cost efficiency, it is suggested that LSA-level interconnection over IP be mandated. Rationalizing the number of POIs will enable TTL to accelerate network modernization and achieve a full transition to IP-based interconnection, in line with best practices and technology evolution.

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.

TTL response:

To avoid ambiguity in the regulatory framework, interconnection should be clearly mandated at the Licensed Service Area (LSA) level except for building redundancy if required to be built through mutual agreement. As long as POI KPI are achieved as per QoS regulation, it should be left to operators for building network architecture. Mandating mutual agreements for establishing Points of Interconnection (POIs) beyond LSA could undermine the core objectives of network optimization, operational efficiency, and reduction of OPEX.

TTL strongly reiterates that interconnection must take place exclusively at the LSA level over IP including migration of existing TDM POIs. In addition, it is requested that Authority to mandate time-bound roadmap for IP-based migration, ensuring that all operators transition within a defined and uniform timeline. This will enable smoother coordination, faster consolidation of POIs, and complete elimination of legacy TDM-based interconnection points.

Such an approach will deliver a streamlined, modernized interconnection framework aligned with national policy objectives and global IP evolution, fostering efficiency, cost savings, and technological advancement across the telecom sector including CNAP implementation which will reduce UCC and frauds to great extent.

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.

TTL response:

Telecommunication Interconnection Regulations (TIR), 2018 need to be updated to match proposed network architecture at LSA level instead of LDCC. Further there should be no ambiguity like feasibility issues in providing LSA level POI's over IP based interconnection. All such issues shall have definitive roadmap mandated through the regulation.

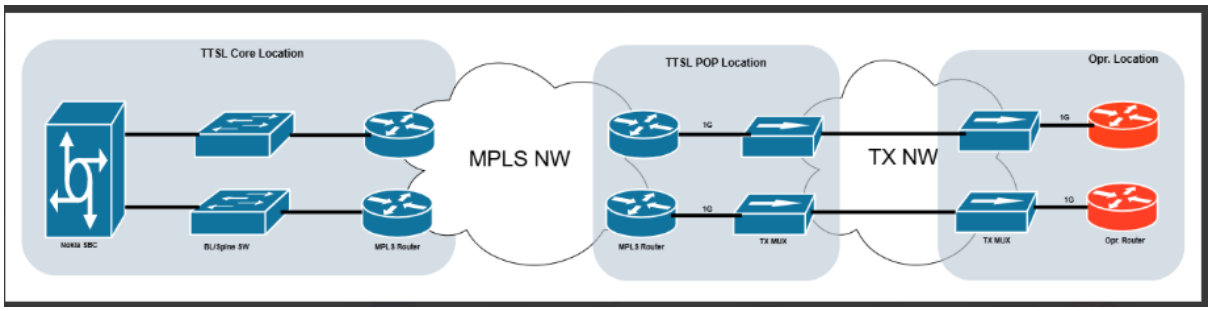
Q4. Is there a need to mandate multi-path resiliency and redundancy in the Point of Interconnection (POI) framework to mitigate link failure at the primary POI in the case of:

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.**

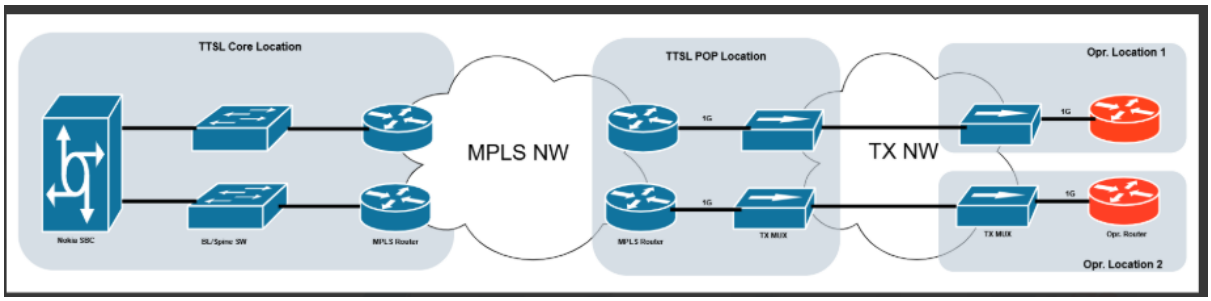
TTL response:

Yes, redundancy is important, but it can be built based on underline network infrastructure availability like in scenarios where multiple core networks are present or multiple paths are present to build the POI. As long as KPI on QoS are met, architecture for POI should be left to operator who are able to effectively manage the POI for so many years now.

POI with DUAL MUX/Port redundancy



POI with Geo- Redundancy



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.

TTL response:

Security features of underline network like SBCs and associated identity and access management policy can achieve such security requirements. It should be left to the TSP's for additional overlay without mandate.

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

TTL response:

Yes, IP-based interconnection should be mandated for all new setups. Modern nodes are already IP-based, and TDM platforms are no longer supported by OEMs. IP interconnection offers higher network efficiency, better scalability, flexible integration of multiple services, and improved QoS through advanced traffic management.

(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.

TTL response:

The telecom industry is moving to all-IP networks therefore maintaining individual POI's and legacy infrastructure is operationally challenging therefore existing TDM traffic should be

mandated to migrate on IP based interconnection. Such migration should be mandated for time bound migration. It is further requested that PSU operators should not charge other TSPs for such migration towards IP interconnection under mandate through regulation so that level playing field is ensured.

We believe that the migration from a TDM-based system to a fully developed IP network should be carried out in a phased manner over a period of 2–3 years.

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

a. Seeking of ports at POIs,

b. Request for initial provisioning of ports, and

c. Request for augmentation of POIs? Kindly provide your response with justification.

AND

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.

TTL response:

Moving to IP-Based Interconnection:

When all telecom operators move to IP-based interconnection, networks will connect through IP based infrastructure, moving away from TDM based ports. Accordingly, TRAI mandate on IP based interconnection-based architecture will help to remove port – seeker concept but to move towards IP based interconnection.

Problems With TIR 2018 That Need Fixing Now

(i)- TRAI should create level playing field among TSP's, so that they can create infrastructure for their respective outgoing traffic.

(ii)- One side Infrastructure charges levied should be abolished to bring level playing field to maintain POI and proliferation of subscriber base in the country as such POI cost hinder the growth of POI under current architecture. LSA level POI will help operator to launch service in Tier-2 and Tier-3 cities also.

Charges for Ports Created Before 2018

TRAI's 2018 amendment requires operators to keep paying port and POI charges for connections set up before February 1, 2018. At the same time, it also states that after two years, these ports should be converted to one-way, so each operator pays only for its own outgoing traffic. Since most BSNL ports were set up before 2018 and are still two-way, private operators end up paying for both their own traffic and BSNL's, which goes against the purpose of the one-way rule. So,

once these ports are converted to one-way, operators should no longer have to pay port and infrastructure charges.

To clean up the existing loopholes in the POI interconnection with the BSNL, LSA wise POI interconnection should be mandated without any one-way charges to create level playing field.

Splitting Traffic Capacity (Incoming vs Outgoing)

TRAI need to mandate that every operator has to create own infrastructure for its outgoing traffic.

POI Infrastructure Charges

TRAI says that POI charges — such as fees for space and power — should be fair and mutually agreed upon by both TSPs. But BSNL has been setting these charges on its own and raising them by 10% every year. We request the Authority to review such one-way charges which are unreasonable, non-viable in the current scenario for Wireline operators as volume of calls does not support such kind of changes. BSNL legacy PSTN architecture at few circles lead to higher payout to BSNL, towards POI port and infra charges.

Delays in POI Commissioning

All operators should be equally treated to comply with the timelines in which POI is to make operational. All internal clarification, approvals, upgrades shall be taken within defined timelines unless mutually agreed, accepted with justified reasons.

The overall augmentation timeline should be reduced to 15 days, keeping in mind the quick growth. Also, emphasis should be given on with separate IP POI implementation in terms of timelines.

Augmentation should be approved on the basis of business projections at least with 3 months' notice. This is to cater high traffic events like Kumbh Mela, Elections, Festive seasons etc.

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.

TTL response:

The existing procedure may be adequate at present and may not require a change. However, it needs to be adopted by all TSPs, including the PSUs.

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.

TTL response:

Operators should have the flexibility to surrender POIs based on actual utilization. In such cases, no advance charges should be payable to PSUs, as each TSP is responsible for its own outgoing traffic. Alternatively, any charges should be reciprocal and applied equally to both parties.

Port and infrastructure surrender charges should be waived. Current practices such as advance fees and long notice periods (e.g., BSNL's requirement of 1-year notice for ports and 6 months for infrastructure) are unreasonable and create unnecessary financial burden. Both private TSPs and

PSUs should have equal rights to surrender POIs or ports, with each party bearing costs only for its own outgoing traffic.

A surrender request, whether for part of a POI or the entire POI, should be processed and approved within 4 weeks. If the PSU (e.g., BSNL) fails to respond within this timeline, no charges should apply, and the TSP should be allowed to remove its equipment without penalty.

This framework ensures a fair, timely, and transparent POI surrender process, promotes operational efficiency, and avoids unjustified financial obligations

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.

TTL response:

There is no need for bank guarantees between TSPs as both way traffic is exchanged over the POI but BG approach taken is one sided therefore TRAI should mandate to get away with the BG. Dispute resolution is already part of the IUC settlement therefore this approach of not taking BG should be applicable with BSNL.

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.

TTL response:

Established and mutually agreed interconnect settlement process already being followed wiith Private operators and BSNL, which is seamless. Suggested approach is to continue the same. In case of any change is proposed by the authority then detailed discussion should be followed before finalizing the approach.

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.

TTL response:

The Telecom Interconnection Regulation 2018 already includes provisions for Financial Disincentives (FDs) to handle non-compliance. What's really needed now is to make sure these provisions are enforceable. By improving monitoring, ensuring timely implementation, and setting clear accountability, these penalties can have real impact and help achieve the intended compliance goals.

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.

TTL response:

Yes, there is a need to revise the existing SMS termination charge by TAP to OAP.

A2P SMS services can be offered by both mobility and wireline service providers. However, since SMS termination ultimately occurs on mobile subscribers, mobility service providers—acting as the Terminating Access Provider (TAP)—are permitted to levy termination charges of up to 5 paise per SMS on wireline-based A2P SMS service providers acting as the Originating Access Provider (OAP).

This regulatory construct has resulted in a structural imbalance. Mobility operators, by virtue of owning the terminating subscriber base, are able to exercise discretion in pricing—often reducing or waiving on-net SMS termination charges for their own enterprise customers—while continuing to levy the maximum permissible charge on wireline operators. This asymmetry provides an undue competitive advantage to mobility operators and renders the A2P SMS business case commercially unviable for wireline service providers.

Such flexibility is contrary to the fundamental principle of the Authority to ensure a level playing field across service providers. The current framework inadvertently incentivizes vertical integration rather than competition, innovation, and efficiency.

In view of the above, we request the Authority to revise the maximum permissible SMS termination charge from 5 paise to 1 paise. This rationalization would:

- Enable wireline service providers to offer A2P SMS services on competitive and sustainable terms.
- Restore parity between mobility and wireline operators.
- Promote healthy competition and innovation in enterprise messaging services.

Further, competitive and reasonable pricing of A2P SMS is critical to ensure that enterprises continue to use regulated and compliant communication channels. SMS remains one of the most tightly governed communication modes under the TCCCPR framework, supported by:

- DLT-registered headers,
- Verified content templates,
- Verified URLs,
- Clear segregation of promotional, service, and transactional communications.

If SMS becomes commercially unattractive due to high termination costs, enterprises are increasingly exploring alternative channels such as handset OEM-based messaging platforms (e.g., Xiaomi), app-based IP messaging platforms (e.g., True caller), and OTT messaging applications (e.g., WhatsApp). These channels largely fall outside the purview of TCCCPR, reducing regulatory visibility, consumer protection, and effective control over spam and fraud.

Further it is to be noted that A2P messages are largely controlled through UCC regulation. At the same time, it is P2P messages remain more vulnerable and susceptible to frauds where individual SIMs are misused.

Therefore, revising the SMS termination charge is not only essential from a competition and market-efficiency standpoint to create healthy eco system around offering competitive services,

but also critical from a consumer protection, regulatory oversight, and fraud-prevention perspective. A calibrated reduction will help preserve SMS as a trusted, compliant, and transparent communication medium for enterprises and citizens alike.

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.

TTL response:

Any NLDO offering its network for carrying SMS from one LSA to another should be allowed to levy carriage charges for the same.

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.

TTL response:

Revision of the existing access charge regime for IN services is necessary to correct structural imbalances, promote fair competition, and sustain the relevance of Toll-Free services. Reducing the access charge to zero for wireline operators would help restore competitiveness, enhance consumer trust, and align with the Authority's objectives of ensuring a level playing field and protecting consumer interest.

Background and Current Scenario

Toll-Free services are predominantly used by enterprises for customer support, grievance redressal, and essential service communications. While such services are provisioned by wireline service providers, the originating calls are largely made by mobile subscribers. As a result, wireline operators are required to pay access charges to mobility service providers, who act as the originating access providers.

Issues with the Existing Access Charge Regime

The present access charge framework presents the following challenges:

1. **Structural Imbalance in Subscriber Base**

   There exists a natural and persistent imbalance between the subscriber bases of wireline and mobility service providers. Mobility operators own the overwhelming majority of originating subscribers, which places wireline operators at a structural disadvantage while offering IN-based services.

2. **Higher Cost of Service for Wireline Operators**

   Due to higher access charges payable to originating mobility operators, wireline service providers incur significantly higher costs in delivering Toll-Free services. This directly impacts their ability to offer competitive pricing to enterprise customers.

3. **Competitive Disadvantage and Market Deterrence**

   The obligation to pay access charges to operators owning the mobility subscriber base—who are also competitors in the enterprise segment—acts as a deterrent for wireline

operators. This further entrenches market asymmetry and undermines the principle of a level playing field.

4. **Decline in Toll-Free Service Adoption**

   Over time, higher access charges have made Toll-Free services increasingly expensive for enterprises, leading to a noticeable decline in usage. Enterprises are either rationalizing usage or migrating to alternative communication channels that may not offer the same level of trust, traceability, and regulatory oversight.

Final Submission

In view of the above, it is suggested that the Authority **reduce the access charges payable for IN services to zero, at least for wireline service providers**. Such a revision would:

- Enable wireline operators to offer Toll-Free services on competitive and sustainable commercial terms.
- Address the inherent disparity arising from unequal subscriber distribution.
- Encourage wider adoption of Toll-Free services by enterprises; and
- Promote effective competition without distorting market dynamics.

Consumer Interest and Regulatory Considerations

Toll-Free services remain one of the most trusted communication mechanisms for citizens, especially for accessing essential services, customer support, and grievance redressal. These services operate within a well-regulated telecom framework, ensuring transparency, accountability, and consumer protection.

If high charges continue to make Toll-Free services economically unattractive, enterprises are likely to increasingly rely on alternative communication channels that may fall outside the regulatory ambit. This could dilute consumer trust and weaken regulatory oversight.

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.

TTL response:

The construct of an SCP code is virtual in terms of routing and accessibility of 1800/1860. When such numbers are terminated on an actual number (SIP/PRI), actual call happens. In the current numbering plan, SCP codes are allocated at the LSA level by the DoT, which ideally can be allocated on a PAN-India basis to ensure optimal utilization of these numbering resource along with SCP codes.

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.

TTL response:

No comments

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, 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.

TTL response:

Ideally, there should be no transit charges for any intra-LSA calls with BSNL, like the arrangement followed with other private operators where LSA level connectivity is established for handling over calls for any of SDCA under that LSA.

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?

TTL response:

Emergency services are critical and must be universally accessible as per licence conditions. Since BSNL/MTNL inherited the responsibility of routing emergency calls (100, 101, 102, 108, etc.) as a public service, therefore these calls are mandatorily routed through BSNL/MTNL. However, BSNL currently charges excessive amounts that have increased significantly over the years.

For enterprise operators like TTL, the monthly emergency call MOU ranges from 5 to 2,000 only. However, the charges paid by TTL to BSNL are not justified for small MOU's

We request the Authority to kindly consider this and take a suitable view on adopting MOU-based, or per call basis charges for emergency services

21. 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.

TTL response:

With the significant drop in the traffic and deployment of IP based networks, the upward revision should be evaluated. Considering the incremental cost that the telcos may incur over long term or in future, the ITC to be aligned slightly upward. Any excessive increase can further reduce the incoming traffic and increase the adaptation international incoming on OTT like WhatsApp, Telegram etc.

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.

TTL 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 a separate or distinct treatment within the interconnection framework at this stage.

Existing Ecosystem and Regulatory Coverage

The current telecom network infrastructure supports multiple categories of voice traffic, including:

- Person-to-Person (P2P) calls,
- Telemarketing calls,
- Robo-calls and auto-dialer–based communications.

These call types serve legitimate and essential use cases across sectors such as banking, NBFCs, insurance, utilities, healthcare, real estate, and other enterprise segments. The TCCCPR framework already provides robust mechanisms to regulate such communications, including:

- Mandatory entity, header, and template registration on the DLT platform.
- Classification of communications into promotional, service, and transactional categories.
- Complaint handling, usage caps, and graded financial and operational disincentives.
- Suspension and disconnection provisions for repeat violations.

Accordingly, adequate regulatory controls already exist to address unsolicited commercial communication (UCC) originating from telemarketing and robo-calling activities.

Importance of Voice-Based Commercial Communication

Similar to service and transactional SMS, voice-based commercial communications play a critical role in delivering essential and time-sensitive services to citizens, including:

- Fraud detection and prevention calls.
- High-value transaction alerts and confirmations.
- OTP delivery and customer authentication.
- Customer onboarding and verification.
- Grievance redressal and service requests.
- Enterprise promotional and outreach activities conducted in compliance with regulations.

These communications are integral to enterprise operations and citizen engagement and must remain affordable, reliable, and widely accessible.

Assessment of Alternative Approaches

While advanced solutions such as STIR/SHAKEN and Calling Name Presentation (CNAP) can be evaluated for feasibility, effectiveness, and cost implications, their implementation should be approached with caution. Such solutions require:

- Significant upgrades to network infrastructure
- End-to-end interoperability across all access providers
- Changes in call routing and interconnection architecture; and

- Substantial capital and operational expenditure.

Any mandatory shift to a dedicated or segregated interconnection framework for telemarketing or robo-calls would necessitate additional infrastructure investments, which would inevitably increase the cost of voice communication for enterprises. These costs are likely to be passed on to end users.

Risk of Migration to Non-Regulated Channels

Higher compliance or infrastructure costs could inadvertently push enterprises towards alternative communication channels such as OTT and app-based calling solutions (e.g., app-to-app voice calling). Many of these platforms operate outside the ambit of TCCCPR, reducing regulatory visibility, consumer protection, and the effectiveness of spam and fraud control mechanisms.

It is pertinent to note that over the past 5–7 years, significant efforts have been undertaken by the Authority, service providers, and stakeholders to establish the DLT-based ecosystem and bring commercial communications within a regulated and traceable framework. Fragmenting this ecosystem by introducing parallel interconnection regimes may dilute these gains.

Recommendation

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.

Conclusion

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.

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.

TTL response:

To accommodate new technologies—such as IP-based and IMS systems—and the shift from TDM to IP.

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.

TTL response:

TRAI should evaluate and distinguish between players who operate solely as enterprise service providers and those who are mobility service providers, so that a level playing field can be established when offering similar enterprise products and services.

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

TTL response:

No Comments

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.

TTL response:

a. There is multiple type of charges which are levied by the incumbent operator like port charges, infra and space charges, duct charges, set up charges, modification charges etc. These charges should be reciprocal in nature or abolished totally as practiced with private operators.
b. No comments
c. If any charges are to be levied, they should be strictly cost-based and not treated as a profit centre.

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? Kindly provide your response with justification.

TTL response:

(a)We request Authority to abolish any port charges and mandate operators to create capacities for their outgoing traffic meeting the QoS benchmarks.

(b)We request the Authority to consolidate the various Interconnection Regulations, including the Interconnection (Charges and Revenue Sharing) Regulations, into a single, updated regulation for ease of reference.

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.

TTL response:

Yes, a comprehensive change is required in the existing interconnection port framework. The current regulations, based on legacy E1/TDM technology, are obsolete and misaligned with modern telecom networks.

The specific need for change is as follows:

i. **Port Technology** - The definition of a "port" must be expanded beyond the legacy E1/TDM interface to include modern IP-based technologies such as Ethernet links, SDH connections etc., as specified in the TEC standard for IP Interconnection.

ii. **Port Size (Capacity) -** The current measure of port size in multiples of 2.048 Mbps E1 links is irrelevant. The new framework must recognize and standardize capacities that reflect modern network requirements, scaling from 1 Gbps to 100 Gbps and beyond.

Port Charges - The existing port charge structure is not cost-based therefore IP based infra shall bring the cost of delivery for carrying similar kind of traffic. Further it is not justified to have capex investment in TDM based technology. Hence the charges must be revised to align with the significantly lower cost-per-bit of modern electronic and optical

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.

TTL response:

TTL, being a wireline enterprise service provider, requests TRAI to abolish port charges in any form of interconnection (IP/TDM).

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? explanation. In either case, kindly provide suitable diagrammatic representation.

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.**

TTL response:

For IP-based interconnection, using Erlang-based traffic units is not justified. Network KPIs such as latency, jitter, packet loss, and RTT should be considered, while peak and average throughput (Gbps) should serve as the metrics for IP POI augmentation.

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.

TTL response:

Yes, the current requirements under the Register of Interconnect Agreements Regulations, 1999, which mandate submitting, inspecting, and obtaining copies of interconnection agreements via floppy disks and printed documents, should be replaced with a fully online system.

A secure digital portal should be established to enable TSPs to upload agreements in standard formats, receive acknowledgements, and track submissions. The portal should also support controlled online inspection, digital payments for any applicable charges, and include features such as audit trails, searchable archives, defined timelines for processing, and robust data security.

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.

TTL response:

Interconnection is meant to serve customers of each other therefore maintaining QoS and timely augmentation of interconnection becomes very important to create good customer experience.

We request Authority to create provisions in the regulation for meeting such augmentation requirements including projection based on some major events like Kumbh Mela, Election campaign and festival season etc which may be required for specific circle or multiple circle level augmentation.

Non-adherence to such delay in provision should be delt with penalty provision.

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.

TTL response:

The highest port or infrastructure charges paid by TSPs to BSNL should be given top priority for migration to IP-based interconnection within realistic timelines, through a clear mandate included in the regulation. We anticipate that the migration to the new regime will require at least 2–3 years to be fully completed.

Q34.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

TTL response:

No Comments

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.

TTL response:

No Comments

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

TTL response:

With the modernization of IP based network, CODEC forms important entity for IP POIs. There should be uniformity in the CODECs used by mobile and wireline operators during interconnection establishment. While wireline operators primarily use G.711/G.729, mobile operators typically offer AMR/NB-WB. Any CODEC negotiation is a capacity intense requirement which decrease the equipment capacity by up to 3 times, thereby increasing the cost by 3X.

Therefore, the CODEC for any IP POI should be standardized to G.711/G.729, with necessary CODEC negotiation carried out at the mobile operator's end when connecting with PSTN operators. It is already part of TEC document but need to be mandated as part of regulation.