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To,

Shri Tejpal Singh "
Advisor (QoS-I), "
Telecom Regulatory Authority of India (TRAI), Government of India, "
Tower-F, World Trade Centre, Nauroji Nagar, New Delhi 110029 "

Subject – GSMA Submission to TRAI on Consultation Paper on Draft Amendments in The Standards of Quality of Service of Access and Broadband Service Regulations, 2024

Dear Sir,

The GSMA is pleased to submit its response to the Telecom Regulatory Authority of India's Consultation Paper on the proposed amendments to *The Standards of Quality of Service of Access (Wireline and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024*.

We thank TRAI for providing the GSMA and other stakeholders with the opportunity to contribute to this important consultation. GSMA acknowledges TRAI's objective of protecting consumers and improving the transparency and reliability of telecommunications services. Quality of service is fundamental to consumer trust, digital inclusion and the continued growth of India's digital economy.

Our response recommends that the final framework remain proportionate, technology-neutral and focused on the service outcomes experienced by users. In particular, GSMA encourages TRAI to recognise network slicing and Quality-on-Demand as legitimate capabilities of current and future networks, capable of supporting advanced consumer, enterprise and public-sector services while coexisting with open and reliable general internet access.

GSMA

GSMA also recommends reconsidering prescriptive controls on network design and resource management, including the proposed PRB utilisation benchmark, advance notification of network slices and the treatment of every slice as a separate tariff offering. We believe consumer interests would be better protected by monitoring the actual quality of general internet access and intervening where reliable evidence demonstrates sustained and material harm.

The submission further addresses coverage maps, typical-speed disclosures, network outages, reporting accuracy, financial disincentives and implementation timelines. Across these areas, GSMA advocates transparent and statistically robust methodologies, fair recognition of factors outside operators' reasonable control, proportionate enforcement and sufficient time for implementation.

GSMA remains committed to supporting TRAI and the Government of India in developing a forward-looking regulatory framework that protects consumers, enables innovation and sustains investment in India's digital infrastructure. We would welcome the opportunity to discuss our recommendations further and contribute to any subsequent stakeholder engagement.

Warm regards,

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Draft Amendments to the Quality of Service Regulations

Introduction

GSMA welcomes the opportunity to respond to the Telecom Regulatory Authority of India's consultation on the proposed amendments to The Standards of Quality of Service of Access (Wireline and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024.

GSMA acknowledges TRAI's objective of providing consumers with reliable services and clear information about network performance. Quality of service remains fundamental to consumer trust, digital inclusion and economic productivity. At the same time, India is entering a new phase of telecommunications development in which mobile networks are no longer simply communications infrastructure but increasingly serve as the digital infrastructure underpinning artificial intelligence, support digital payments, cloud computing, digital public infrastructure, enterprise transformation and national resilience.

Quality of service regulation should protect users of general internet access while allowing operators to develop advanced connectivity services that meet different consumer, enterprise and public-sector needs, irrespective of the underlying technology used to deliver them.

GSMA recommends that TRAI:

1. ! expressly recognise network slicing and Quality-on-Demand as legitimate capabilities of current and future networks;
2. ! replace prescriptive controls on the creation and operation of network slices with an outcomes-based safeguard for general internet access;
3. ! review the proposed PRB utilisation benchmark and avoid treating a single radio engineering indicator as a regulatory measure of congestion;
4. ! simplify coverage-map requirements and establish a robust, representative validation methodology before applying financial disincentives;
5. ! do not alter outage, speed and reporting requirements so that operators are accountable only for matters they can reasonably identify and control; and
6. ! ensure that enforcement distinguishes material non-compliance from inadvertent errors or reasonable differences in measurement.

GSMA

1. Network slicing and differentiated connectivity

GSMA welcomes TRAI's acknowledgement that network slicing can support services with different requirements for data rates, latency, reliability, security and device density. The consultation recognises use cases covering enhanced mobile broadband, massive machine-type communications and ultra-reliable low-latency communications. It also recognises that international regulatory approaches generally seek to enable slicing while safeguarding the quality of general internet access.

This should be the starting point for technology-neutral regulation. Network slicing is not inherently detrimental to general internet users. It enables operators to use common infrastructure more efficiently while configuring connectivity for the requirements of particular services.

These capabilities are already supporting:

- Quality-on-Demand for applications such as live video streaming, cloud gaming, and live broadcasting;
- enterprise applications requiring assured speed, latency or reliability;
- emergency and critical communications;
- industrial and public-sector applications;
- remote healthcare;
- smart manufacturing and remote machinery control

For India, differentiated connectivity can support digital public infrastructure, enterprise digitalisation, advanced manufacturing, AI and cloud adoption, broadcasting, transport, healthcare and emergency services.

Differentiated connectivity is powering innovation and consumer choice

Internet services tailored to user needs

Operators in Belgium, Malaysia, Singapore, UK and the US are offering premium mobile broadband services that improve performance for bandwidth-intensive applications. In several markets, operators are also providing priority access passes at major sporting and entertainment events, ensuring applications such as live streaming, video sharing and real-time communications continue to perform well even when networks are heavily congested.

At the same time, some operators are also introducing application-specific services tailored to the needs of particular use cases for specific user groups, including commuters, gamers and social media creators. Demand for these services is growing as

users seek not just faster speeds, but also lower latency and a more reliable application-specific experience.

Enterprise and government solutions: driving efficiency and innovation

The opportunities are even greater for businesses. Through Quality-on-Demand network APIs, operators can provide application developers with guaranteed connectivity levels as and when they are needed. For example, China Mobile's partnership with Alipay reduced payment delays by 57 per cent and payment failures by 90 per cent, helping ensure reliable transactions in busy commercial environments.

Advanced connectivity is also powering cloud gaming. Partnerships between operators such as China Telecom and Deutsche Telekom and cloud gaming platforms like Tencent, NVIDIA GeForce NOW and Sora Stream are making high-quality gaming accessible through smartphones and cloud platforms rather than expensive, dedicated games consoles.

In media and entertainment, KDDI Japan uses 5G network slicing to support live event broadcasting using smartphones, drones and wearable cameras, reducing the need for costly, dedicated broadcast infrastructure while at the same time enabling new, innovative viewing experiences.

Furthermore, operators such as Vodafone, T-Mobile, Telstra and e& are offering enterprise-grade network slices with guaranteed performance, giving businesses access to advanced connectivity without the cost and complexity of building their own networks. This is particularly valuable for small and medium-sized enterprises seeking to accelerate their digital transformation.

The same technologies can enhance public services and national resilience. Verizon Frontline and T-Mobile T-Priority provide priority connectivity for emergency services, healthcare and other critical sectors, helping ensure they remain connected during periods of congestion or crisis.

GSMA therefore recommends that the regulations clearly confirm that network slicing, specialised services and differentiated connectivity delivered by the current and future networks, can coexist with open and reliable general internet access. The regulatory test should be whether the general internet access service continues to meet its applicable QoS requirements, not whether an operator offers another service with different performance characteristics.

2. Proposed PRB utilisation parameter

TRAI proposal

TRAI proposes that no more than 1 per cent of 5G cells should have daily uplink, downlink or combined PRB utilisation exceeding 80 per cent. Where a cell exceeds 80 per cent utilisation for five days in a month, the operator would be required to take capacity action.

If utilisation is not reduced within the prescribed period, the cell would have to be removed from network slicing.

GSMA comment

GSMA recommends that TRAI reconsider this proposal.

PRB utilisation is a useful network-planning indicator, but it should not be used in isolation as a regulatory measure of congestion or service quality. High utilisation during a cell's busiest hour does not by itself establish that users are experiencing poor service, that a particular slice caused the utilisation or that immediate capacity augmentation is technically or economically justified.

Network performance depends on several factors, including:

- available spectrum;
- traffic distribution;
- radio conditions;
- the services being used;
- the duration and recurrence of elevated loading; and
- experienced speed, latency, reliability and packet loss.

A uniform 80 per cent threshold does not account for differences in network design, spectrum holdings, cell configuration, traffic patterns or the efficiency of dynamic resource allocation. The proposed requirement could also lead operators to manage networks towards compliance with a single utilisation threshold rather than towards the service outcomes experienced by users.

GSMA recommends that TRAI:

- remove the proposed benchmark of no more than 1 per cent of cells exceeding 80 per cent PRB utilisation;

- avoid requiring cells to be removed from network slicing solely because they exceed a specified utilisation level;
- monitor the QoS experienced by users of general internet access through existing performance measures based on outcomes rather than radio-resource utilisation metric;
- allow operators to use a range of relevant technical indicators and service outcomes for capacity planning and optimisation; and
- intervene where there is evidence of sustained material deterioration in the applicable QoS of general internet access.

This would provide a more direct and proportionate safeguard than regulating one input into network management.

3. Advance notification of network slices

TRAI proposal

The proposed Regulation 6(3) would require an operator planning to create a new network slice to submit details of proposed and existing slice parameters to TRAI at least 21 days before launch, including evidence of sufficient capacity in the relevant cells.

GSMA comment

GSMA recommends that TRAI remove the 21-day advance notification requirement.

Network slicing is intended to make networks more programmable and responsive to changing requirements. Depending on the service, slices may be introduced, modified, activated or withdrawn dynamically. A mandatory pre-launch submission for every new slice could delay innovation, expose commercially sensitive information and create continuing administrative work for both operators and TRAI.

Operators should remain responsible for compliance with the QoS standards applicable to their services. TRAI could require operators to retain appropriate records showing how they manage capacity and protect the quality of general internet access, with information provided where a specific concern arises.

If TRAI retains a notification requirement, GSMA recommends that it:

- apply only to material commercial launches rather than operational or temporary slice configurations;
- be a notification rather than an approval process;
- protect commercially and technically sensitive information;

- use a standard and limited information template;
- avoid cell-level pre-launch submissions; and
- permit launch without delay where the applicable QoS requirements are already being met.

4. Treatment of slices as separate tariff offerings

TRAI proposes that each eMBB network slice should be treated as a separate tariff offering and should comply separately with the typical-speed parameter.

GSMA recommends that TRAI distinguish between:

- a retail internet-access tariff offered to consumers;
- a specialised connectivity service;
- an enterprise solution; and
- an internal technical network configuration.

Not every network slice is a tariff offering, and not every slice is appropriately assessed through a consumer broadband speed measure. A slice designed for low latency, reliability, security, device density or uplink performance may not have speed as its defining characteristic.

However, if required, separate speed reporting should apply only where a slice is offered to consumers as a distinct internet-access tariff with an advertised typical download or upload speed. Other slices should be assessed against the service characteristics contractually associated with their intended use, rather than a general consumer speed benchmark. Additionally, wireless speeds depend on network technology and prevailing network conditions, not on the tariff selected by a subscriber. Since several tariff plans can be delivered over the same 4G/5G network and radio infrastructure, requiring separate technology-wise speed reporting for each plan would be duplicative and would provide little additional value for QoS assessment.

5. Technology-specific typical speeds

GSMA acknowledges TRAI's objective of giving consumers meaningful information about the performance they can normally expect. The consultation proposes separate declarations for 4G and 5G and requires all relevant tariff offerings to meet the declared typical speeds using the specified percentile methodology.

However, mobile speeds vary according to location, spectrum, network capacity loading, device capability, radio conditions and application performance. A requirement covering

every combination of technology, tariff and network slice could produce a large volume of information without necessarily helping consumers make better decisions.

GSMA recommends that:

- typical-speed information be expressed clearly as an indicative range rather than a guaranteed minimum;
- measurement use a statistically representative sample;
- tariffs with the same service characteristics be grouped;
- reporting exclude enterprise and specialised services that are not sold by reference to general internet speed;
- operators have a reasonable period to investigate and correct an apparent shortfall before enforcement; and
- differences caused by matters outside the operator's reasonable control be taken into account.

6. Coverage maps

GSMA supports accurate, accessible and understandable coverage information. Moving beyond a binary "coverage or no coverage" representation can provide consumers with more useful information.

However, TRAI's proposed Schedule III is highly prescriptive. It specifies grid sizes, signal thresholds, loading assumptions, map categories, colours, website placement, validation processes, feedback treatment, API structures, metadata and submission architecture. It also proposes a 98 per cent accuracy benchmark, with financial consequences linked to TRAI's drive-test and crowdsourced measurements.

Coverage maps are predictions of likely service availability, not guarantees of service at every location and moment. Actual experience can differ because of terrain, buildings, indoor conditions, device performance, network loading and temporary changes in the environment.

GSMA recommends that TRAI:

- focus the regulations on clear consumer outcomes and minimum information requirements;
- develop detailed technical methodologies collaboratively with operators;
- undertake a pilot before applying the 98 per cent benchmark or financial disincentives;

- ensure validation samples are representative across locations, technologies, devices, times and network conditions;
- establish minimum sample sizes and statistical confidence requirements;
- distinguish systematic overstatement from normal modelling variation;
- treat coverage maps as consumer-information and monitoring tools rather than a QoS compliance parameter, and not apply a 98 per cent benchmark or financial disincentives;
- allow operators to examine and challenge underlying validation data;
- treat crowdsourced information as an input for investigation rather than conclusive evidence of inaccuracy; and
- provide sufficient implementation time for changes to mapping systems and APIs.

GSMA also recommends removing the requirement to mark a disputed 30-metre area in amber until network performance aligns with the map. A single consumer report or isolated measurement should not determine the published classification of an area without verification.

7. Significant network outages and compensation

GSMA acknowledges prompt notification of significant outages and reasonable redress where customers experience prolonged, complete loss of service. TRAI proposes expanded outage definitions for wireless and wireline broadband, 24-hour reporting and compensation for qualifying outages lasting more than 24 hours. Network outage should be determined through objective, automatically logged and auditable network events.

The final regulations should ensure that:

- no regulatory obligation is prescribed based on a metric that MNOs cannot objectively and consistently measure;
- “complete loss of service” and “material degradation” are objectively measurable;
- the affected geographic area and customer population can reasonably be identified;
- operators can confirm the scope of an incident before submitting a detailed report;
- an initial notification can be followed by a verified report and root-cause analysis;
- planned and notified maintenance is treated separately;

- force majeure, power failures, third-party infrastructure damage and government directions are recognised;
- compensation is provided only to customers reasonably identified as affected; and
- the same event does not lead to overlapping compensation or penalties under multiple provisions.

For wireline broadband, a 20 per cent reduction against a declared typical speed should not automatically be treated as a significant outage. A temporary difference in measured speed is not equivalent to loss of service and may arise from several factors outside the operator's network. TRAI should require evidence of a sustained and material inability to use the service.

8. Complaint registration during outages

GSMA acknowledges the principle that consumers should remain able to report service problems. TRAI proposes that affected subscribers must either be able to register complaints or be automatically mapped to system-generated fault tickets during network-wide or localised disruptions.

Where an operator has already identified a common network incident, requiring a separate fault record for every affected subscriber may generate duplicate records without assisting restoration. System-generated incident records, combined with clear customer communication and a means for consumers to report a different problem, should be sufficient.

9. Quality of Experience Score

TRAI proposes that it may publish a service-wise Quality of Experience Score combining network performance, customer service and consumer perception from multiple sources.

GSMA acknowledges the objective of presenting useful consumer information, but a composite score could be misleading unless its methodology is transparent, statistically robust and capable of distinguishing network performance from matters outside an operator's control. While QoS is based on defined technical parameters, benchmarks and measurement methods, QoE reflects device capability, application and content performance, location, mobility, usage patterns, expectations and other subjective factors.

Before introducing the score, TRAI should consult separately on:

- the indicators and their weightage;

- data sources and sample quality;
- treatment of device and application performance;
- comparability between different services and operators;
- the frequency of publication; !
- operators' right to review and correct underlying data; and !
- how the score will be explained to consumers.

The score should not be used for enforcement unless each component is based on an established regulatory requirement and a validated measurement methodology.

10. Reporting accuracy and financial disincentives

GSMA supports firm action against deliberate false reporting. GSMA believes that the proposed definition could classify a mismatch exceeding 1 per cent of a benchmark as false reporting, even where the difference arises from methodology, timing, rounding, data processing or a genuine error. TRAI also proposes financial disincentives for non-compliance with other provisions and removes the overall cap for delayed reports.

"False reporting" should require evidence that information was knowingly and intentionally misrepresented. It should not include every data mismatch.

GSMA recommends that TRAI:

- distinguish deliberate false reporting from inadvertent error;
- assess whether a discrepancy is material to the reported outcome;
- notify the operator and permit reconciliation or correction;
- recognise reasonable methodological and rounding differences;
- apply penalties only after the operator has had an opportunity to respond;
- avoid multiple penalties for the same underlying event; and
- retain proportionate limits on cumulative financial exposure.

11. Implementation

The consultation proposes that the amendments take effect from 1 October 2026. It also requires changes to network reporting, tariff measurement, coverage mapping, APIs, customer systems and compliance processes.

GSMA recommends phased implementation. Clarificatory drafting corrections could take effect first, while substantive new requirements should follow only after technical

engagement, testing and reasonable implementation periods. Network slicing controls, coverage-map validation, new APIs, Quality of Experience scoring and revised enforcement provisions should not take effect until their methodologies and operational requirements are settled. Requirements that are difficult to measure accurately, carry the risk of creating a mismatch between published regulatory expectations and actual consumer experience. This may result in eroding trust between consumers, operators, and the regulatory framework.

12. Quality of Service should support investment as well as consumer protection

India has established itself as one of the world's leading digital economies through sustained investment in mobile infrastructure. Quality of service regulation should continue protecting consumers while preserving incentives for these investments. Accordingly, new compliance obligations should remain proportionate to their intended regulatory benefit.

Where additional reporting obligations are introduced, implementation timelines should recognise operational realities while allowing operators to prioritise continued infrastructure deployment. This balance between accountability and investment has become increasingly important as telecommunications networks evolve into strategic national infrastructure supporting the wider digital economy.

GSMA conducted a study to explore how QoS regulations are evolving in Asia Pacific, using both qualitative and quantitative methods. The survey results and analysis demonstrate that external factors significantly impact mobile operator performance.

The study's evidence suggests that imposing direct QoS regulations has minimal or no impact on actual service quality. In fact, the regulations can have the following effects:

• **Increasing costs**: Compliance burdens mobile operators, requiring them to invest resources in monitoring and reporting metrics. These resources could be better directed to network expansion and infrastructure improvements.

• **Hindering progress**: Resources could be spent meeting regulations instead of expanding coverage or upgrading infrastructure. Operators could prioritise meeting predefined QoS targets over investing in innovative solutions that can ultimately benefit service quality.

International Harmonisation will become increasingly important

The consultation itself references international practices relating to publication of coverage maps. GSMA supports continued alignment with internationally recognised approaches wherever practical.

International consistency delivers multiple benefits.

- It reduces unnecessary compliance costs
- It facilitates benchmarking
- It enables the implementation of common methodologies
- It improves regulatory certainty
- It also helps ensure that India's regulatory framework continues reflecting global best practice while remaining appropriately adapted to domestic market conditions.

Conclusion

GSMA acknowledges TRAI's objective of protecting consumers and improving the transparency of service performance. The final framework should nevertheless recognise that quality outcomes are influenced by many factors and that advanced 5G networks must support increasingly diverse requirements.

Network slicing and Quality-on-Demand can support innovation in digital services, enterprises, manufacturing, public services and critical communications while coexisting with open and reliable general internet access.

GSMA encourages TRAI to replace prescriptive controls on network design and slice creation with an outcomes-based approach. Operators should be accountable for the quality of the services they provide, but should retain the technical and commercial flexibility to manage resources, introduce new services and invest sustainably in India's digital infrastructure.

The strongest safeguard for consumers is not a single PRB threshold or prior regulatory notification of each network slice. It is a clear requirement that general internet access continues to meet applicable quality standards, supported by proportionate transparency, reliable evidence and targeted intervention where material harm is demonstrated.