



DG/COAI/REG/2026/1037

07 September, 2026

Shri Tejpal Singh,

Advisor QoS-I,

Telecom Regulatory Authority of India,

Tower- F, World Trade Centre, Nauroji Nagar,

New Delhi – 110029.

Subject: COAI's comments/additional comments on the Draft Amendments in 'The Standards of Quality of Service of Access (Wireline and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024'.

Dear Sir,

1. This is with reference to draft amendments issued by TRAI "The Standards of Quality of Service of Access (Wireline and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024".
2. In this regard, please find enclosed COAI's comments/additional comments along with annexures (I & II).

We trust that our aforementioned submissions would merit your kind consideration and we look forward to your valued support on the same.

Thanking you in anticipation,

Sincere regards,

Signed on: 07-09-2026 18:00:25

Digitally Signed by:

Lt Gen Dr SP Kochhar

DG

COAI

Signature Valid From: 2026-02-16 10:14:25

Valid To: 2027-02-16 10:14:25

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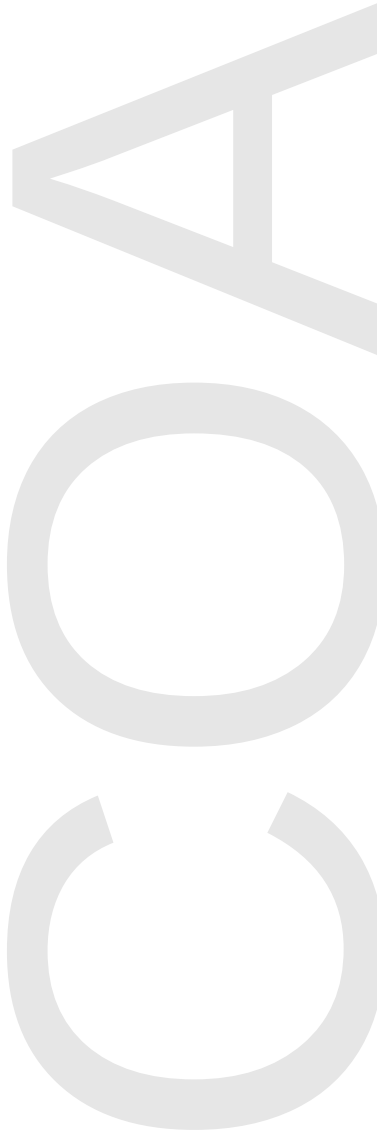
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Copy to:

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Para No of Draft notification and Proposed Regulation	Input/Comment	Justification with supporting reference, if any
1.1. Cell Bouncing Busy Hour (CBBH): CBBH should be system generated one-hour period in a day during which the cell experiences the maximum traffic. CBBH for a quarter shall be decided on the basis of analysis of hourly traffic data of each cell for each day of preceding quarter. The hour during which the cell experience maximum average traffic during preceding quarter shall be CBBH of the respective cell. Different cells may have different CBBH based on the actual traffic experienced by the respective cell. Thus, the CBBH for a cell will remain the same for a quarter irrespective of the assessment period for the purpose of reporting the performance against QoS parameters.	Use a common, pre-defined network busy-hour window for QoS measurement instead of determining a separate CBBH for every cell.	a) Cell-specific CBBH computation across large networks is operationally intensive and adds significant processing and audit complexity. A standardized busy-hour window would remain representative, comparable and materially simpler to implement.
4.1.3. Percentage of significant network outage (Services not available in a district for more than 4 hours) reported to the Authority within 24 hrs of start of the outage (i) Significant Network Outage (SNO) is a scenario when access (wireless) service is not available in any district for more than 4 hours due to any reason Significant Network Outage is defined as an event where access service (wireless) in a district remains unavailable for a continuous period exceeding four (4) hours, or where more than ten percent (10%) of subscribers in the Licensed Service Area (LSA) experience complete loss of service for a continuous period exceeding four (4) hours due to any reason. All 'cells' physically located in the district shall be considered for deciding SNO.	Delete the LSA-level trigger based on more than 10% of subscribers experiencing complete loss of service; retain objective, network-generated criteria for identifying Significant Network Outages.	a) The proposed 'more than 10% of LSA subscribers' trigger is not an objectively measurable network event. Determining individual subscriber impact is technically infeasible in a mobile environment because: • A subscriber registered in another district may be roaming in the affected area. • A subscriber registered in the affected district may be travelling elsewhere. • A subscriber might be in the area but have their device switched off. b) This makes 'affected subscribers' an ambiguous and unauditable category.

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		c) Affected-subscriber estimation is not a direct network metric and would require complex assumptions regarding active users, roamers, devices, technologies and service availability. SNO reporting should rest on consistently measurable and auditable network events.
4.1. Network Availability 4.1.1. Availability of service wise geospatial coverage map on service provider's website for percentage of working cells Accuracy of service wise geospatial coverage map published on service provider's website (i) Broad guidelines for publication of service wise geospatial coverage map by service providers on their website including methodology for validation of Coverage maps are detailed in Schedule-III. (ii) To report the performance against this parameter, service providers shall conduct physical or virtual drive test, as is	Coverage-map publication may continue as a consumer-information measure, but map accuracy should not be treated as a QoS parameter or linked to compliance assessment and financial disincentives.	a) Coverage maps are predictive outputs based on modelling assumptions, whereas actual experience varies with device, location, loading and environment. Validation based on selective drive-test or consumer samples should therefore not create a network-performance obligation. b) A predictive map should not be converted into an audited KPI carrying financial consequences. The proposed change fundamentally alters the nature of the obligation for the following reasons: 1. Grid vs. Point: Coverage is typically predicted over an aggregated grid (e.g., 50m x 50m). Actual RF conditions vary within this grid due to buildings, terrain, and obstruction, so a single grid value cannot reproduce signal strength at every point.

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already required under regulation 7, especially covering the locations where consumer feedback has been received in previous three months, to assess the accuracy of their coverage maps. The supporting data shall be reported to the Authority in the format and manner which may be prescribed from time to time.” (i) Under this parameter, the Access Service (Wireless) providers shall provide service wise (2G/ 3G/ 4G/ 5G) geospatial coverage maps on their website. Compliance against this parameter shall be reported to the Authority as per the specified timelines in regulation 6. (ii) To provide up to date status of mobile coverage to the consumers, coverage maps should be updated by the service providers earliest upon the cells are either commissioned or decommissioned or coverage is changed significantly due to any other reason in the Licensed or Authorized Service Area (LSA) network. (iii) All the changes in network coverage, due to any action in month ‘x’,		2. Mismatched Methodologies: Predicted maps cannot be directly compared with drive tests or consumer apps, which are influenced by handset type, network load, and other dynamic variables. 3. Unrealistic Tolerance: A ± 3 dB tolerance is too narrow for India’s diverse environments and would treat legitimate engineering variations as non-compliance. c) Kindly refer our detailed comments to the Main QoS Regulation where the benchmark for this parameter has been mentioned for compliance as well as comments to the Schedule III

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shall be reflected in coverage map within 'x+3' months. For example, the change in network coverage for any technology resulting due to any activity, including cell commissioning, decommissioning, network optimization etc., in month of March of the year should be reflected in the coverage maps latest by the month of June of the concerned year. The log of changes made in coverage map for respective assessed month shall be maintained for the purpose of audit. (iv) As cell coverage is dependent upon the cell loading or cell traffic, as against its dimensioned traffic handling capacity, the coverage maps should be presented considering 50% cell traffic against the dimensioned capacity. It is expected that suitable backhaul bandwidth is provisioned to support cell traffic. (v) The cell coverage of respective technology shall be		



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presented on the coverage map in prescribed color scheme having minimum prescribed signal strength, in line with license or authorization conditions or relevant standards, at the cell edges with its 50% loading. (vi) The link for network coverage map shall be provided in the home or landing page of the service provider's website at a prominent location for single click navigation. (vii) The maps shall be interactive as far as possible and shall provide options to at least see the coverage by (a) selecting technology (single, multiple or all) (b) entering latitude or longitude or both to see coverage in area of interest and (c) selecting or entering LSA/ State/ UT or district. (viii) The Authority may, from time to time, specify functional and technical requirements for display of service wise geospatial coverage maps on service provider's website by an order or direction.		

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4.4.4. Tariff offerings in which 80th percentile value of measured test samples for which download and upload speed is $\geq$ offered typical download and upload speed for 4G/5G technology in tariff offerings	Delete the tariff-wise “typical speed” compliance parameter. If speed disclosure is retained, adopt a standardized, technology-neutral and representative network-level metric.	a) The proposed 100% compliance benchmark transforms a 'typical speed' disclosure into a de facto guaranteed speed obligation, which is inconsistent with the variable nature of broadband. Performance is influenced by numerous dynamic factors: • For Mobile: Spectrum availability, network loading, radio conditions, and device capability. • For Wireline: Last-mile infrastructure (copper/fibre), CPE capability, in-premises wiring, and Wi-Fi conditions. b) A single underperforming sample would trigger non-compliance, creating a state of permanent default c) “Typical speed” is not a standardized engineering KPI and mobile speeds vary by radio conditions, device capability, loading, location and time. Linking an 80th-percentile test result to a declared tariff speed may convert an indicative disclosure into a de facto guarantee and encourage overly conservative declarations.

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4.5. Network Slicing 4.5.1 Cells having daily PRB utilisation >80% (in 5G network) (i) A Physical Resource Block (PRB) is the fundamental unit of radio resource allocation in 4G LTE and 5G New Radio (NR) networks. It represents a defined portion of radio spectrum over a specific time interval and serves as the basic scheduling unit through which a base station allocates radio resources to user equipment (UE) for data transmission and reception. The higher level of PRB utilization for number of days, either continuously or periodically, indicates network congestion. (ii) PRB Utilization in 5G NR is a measure of how fully the physical resource blocks are being used in the network. Ideally, it should be managed to avoid congestion while utilizing available capacity efficiently. (iv) Performance of all Cells including those cells which are part of Carrier Aggregation (CA) are to be included while calculating the performance using above mentioned formula. (v) Whenever PRB utilisation exceeds 80% for any five days in a month, service provider must take necessary action to augment the capacity in timely manner so that PRB utilisation reduces below	Members will respond individually.	

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80%. However, in case PRB utilisation cannot be reduced below 80% even after a period of month then such cells must be removed from network slicing. In other words, service provider will ensure that the same cells reported in PMR of a month with more than 80% PRB utilization for more than five days are not repeated beyond two consecutive months. (vi) In addition, before launch of any new network slice, service provider must ensure that sufficient capacity is available in the network and shall submit the details, as per the format and manner prescribed by the Authority, before launch of such network slicing.”		
5.7 Silence Call Rate (i) A call which has any instance of continuous RTP gap ≥ 4 sec is considered as a ‘Silence Call’. (ii) The performance against the parameter shall be calculated through the following formula: Silence call rate = (Count of silence call instances during TCBH / Total calls established during TCBH) x 100 (iii) A call may have multiple instances of RTP gap of ≥ 4 sec. Each of such instance, within a call, will be added to calculate total instances for all calls during the TCBH to calculate the	Silence Call Rate should not be introduced as a monthly QoS parameter. If required, it may remain part of drive-test or diagnostic assessment until a standardized OSS-based methodology is available.	a) The parameter is not ready for regulatory implementation because: - No Standardised Counter: There is an absence of an OEM-supported, standardised OSS counter to reliably identify silence calls across heterogeneous networks. - False Positives: A technical RTP gap does not by itself establish silence; it can arise from normal network functions like Discontinuous Transmission (DTX), transient packet loss, or jitter. b) Before this can be considered, an industry/OEM feasibility pilot must be conducted to establish a standard methodology.

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numerator value.		c) Silence is not a standard signalling event or widely available OSS counter. Measurement may depend on proprietary media-analysis tools and varying technical assumptions, making LSA-level comparison and audit unreliable. The formula should in any event count affected calls, not multiple silence instances within a call.
8. Modification in the Schedule In view of technological advancement, the details mentioned in the schedule can be modified by the Authority through direction or order.	Material changes to Schedule-I, methodologies, parameters, reporting formats or compliance obligations should be preceded by stakeholder consultation, except for purely administrative or clarificatory changes.	a) Consultation is necessary to test technical feasibility, implementation impact and unintended consequences. This would support regulatory certainty, uniform interpretation and proportionate compliance.

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Schedule III - Broad guidelines for publication of service-wise geospatial coverage maps	Schedule III should operate only as a consumer-information framework. Coverage-map accuracy should not be treated as a QoS benchmark or attract financial disincentives.	Coverage maps are modelled estimates, not real-time measurements of delivered service. Any detailed framework should be consultative, uniform and proportionate. International approaches generally use coverage maps for consumer information, monitoring and iterative validation rather than as a monthly QoS benchmark carrying a universal accuracy threshold and financial consequences. TRAI should therefore undertake further technical consultation and allow adequate implementation time before introducing any new map, validation, API or reporting obligation. An impractical or insufficiently tested framework may create a gap between mapped information and actual experience, leading to consumer confusion and reduced trust.
1.1 Service providers shall publish technology-wise (2G/3G/4G/5G) geospatial coverage maps for all areas where wireless voice or broadband is available for subscription.	Technology-wise publication may continue for consumer awareness, subject to suitable qualifications and separation from QoS compliance.	Published maps should be presented as indicative coverage information and not as assurance of service at every location.

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1.2 Coverage maps may be based on measurement, network analytics or prediction models; accuracy shall be at least 98%, with self-validation and possible audit by the Authority.	Delete the proposed 98% accuracy threshold and related compliance treatment. Any validation framework should first be standardized through industry consultation.	Prediction outputs vary with model inputs and cannot replicate every field condition. A uniform methodology is necessary before any comparison or audit.
1.3 Service providers may adjust displayed coverage levels to reflect real-world service performance where signal strength alone does not ensure expected quality.	Replace operator-specific adjustment discretion with a common, transparent methodology applicable across the industry.	A numerical accuracy benchmark is premature and technically difficult to administer. Any future accuracy assessment must be preceded by a clearly defined and mutually understood measurement methodology, including sampling, geographical sample size, route selection, handset specifications, measurement frequency, network loading conditions, and the process for resolving anomalies. Until such a methodology is specified, the benchmark is susceptible to inconsistent application and disputes. Common thresholds and adjustment rules are necessary for meaningful comparison and consistent consumer information.
Coverage levels shall be displayed using outdoor signal-strength thresholds at cell edge with 50% cell loading.	Clarify the scope of 50% cell loading and prescribe a uniform modelling basis, including link direction, averaging approach and treatment of bands/carriers.	The proposed loading assumption is incomplete without common technical definitions and may otherwise be interpreted differently.



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Table 1 - Technology-wise signal-strength thresholds for Excellent, Good, Fair and No Coverage.	Finalize signal-strength thresholds and the treatment of multi-band or consolidated coverage only after technical consultation with TSPs.	Devices may use different spectrum layers at the same location; the displayed category should therefore follow a uniform industry methodology.
Coverage-level descriptions linking Excellent, Good, Fair and No Coverage with expected outdoor and indoor availability of voice, SMS and data.	Coverage descriptions should remain indicative and should not imply assured indoor availability based on outdoor predicted signal levels.	It must be made clear that coverage maps are inherently prediction-based and indicative representations of outdoor network coverage. They cannot represent indoor penetration, instantaneous fluctuations, or congestion with live-measurement precision. Treating these indicative descriptions as a guarantee of service will mislead consumers. Indoor experience depends on building characteristics, devices and other location-specific factors not captured by an outdoor prediction.
1.8 Areas below the prescribed 'No Coverage' signal threshold at 50% loading may be treated as no-coverage areas.	Replace the absolute 'No Coverage' description with 'Limited Coverage' and review lower signal slabs through industry consultation.	Usable service may still be available below the proposed threshold in certain radio conditions; an absolute label may mislead consumers.
Service providers may align coverage maps to ground-level performance expected under Excellent, Good and Fair categories.	Use one consistent industry-wide yardstick for coverage categories; do not permit non-uniform operator-specific interpretation.	A consistent framework is essential for comparability and clarity, while keeping predictive coverage distinct from actual performance.



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1.11 A combined coverage map shall be displayed by default, with preference to the higher-generation technology where multiple technologies are available.	Reconsider mandatory blended coverage. Retain clear technology-wise views and finalize any combined-map logic after industry consultation.	The highest-generation technology may not represent the most reliable or widest coverage at a location due to differing spectrum characteristics.
Publication of the date of the last update for each LSA at the bottom of the coverage map.	Permit a defined network-data cut-off or map-generation date with reasonable periodic updates.	Coverage inputs change continuously; disclosure should follow a practical update cycle rather than imply real-time synchronization.
Grid-based coverage using hexagonal cells.	If hexagonal grids are retained, TRAI should prescribe a common national grid, identifiers and specifications, with adequate implementation time.	A common grid is required for like-for-like comparison and will need coordinated platform changes across TSPs.
5.2 TRAI may audit and validate maps using samples from Independent Drive Tests or TRAI Apps with latitude and longitude.	Do not directly compare predicted outdoor coverage with in-vehicle, indoor or unverified app samples. First standardize band, device, antenna, environment and sampling conditions.	Predicted maps cannot be directly compared with drive tests or consumer applications like MySpeed. A deviation from an individual field reading does not, by itself, establish that the published map is inaccurate. If accuracy must be assessed, it should be done through a common, independent TRAI-controlled coverage/drive-test mechanism using a uniform methodology, standardized equipment, and consistent environmental conditions to ensure the assessment is consistent, transparent, and reproducible.

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Margin of error: +3 dBm for TRAI App samples and 0 dBm for IDT samples.	Revisit the proposed +3 dBm and 0 dBm margins through technical consultation and validated field studies.	A ± 3 dB tolerance is technically too narrow for a nationwide Indian network. India's dense urban, high-rise, rural, hilly, and remote environments produce widely varying propagation conditions. A narrow tolerance would treat legitimate engineering variation as non-compliance. The tolerance should also be expressed in dB (a relative difference), not dBm (an absolute power level).
A published level better than the identified level of a sample shall be treated as an inaccurate sample; otherwise it shall be accurate.	A map should not be classified inaccurate on the basis of an isolated, unnormalised spot sample. Use representative, band-matched and grid-aligned samples.	A point-in-time sample and a grid-level statistical prediction measure different conditions and should not be treated as directly interchangeable.
Financial consequences under Regulations 16 and 16A for failure to meet 98% map accuracy or for a difference between reported and Authority-calculated accuracy.	Remove financial disincentives linked to coverage-map accuracy and Authority-versus-TSP calculation differences.	Coverage maps should remain a transparency measure. Methodological variances should lead to reconciliation and correction, not automatic penal consequences.
6.1-6.2 Users may challenge coverage through a feedback button, with specified details provided or auto-captured.	Consumer feedback may trigger network review, but should not by itself determine map accuracy, compliance or mandatory changes.	Individual observations may be device, location, band or environment specific and require technical verification.

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6.3 User feedback shall inform corrective action and map updates; 3D digital maps are stated to be essential in urban areas.	Consumer feedback and 3D maps should be facilitative, not mandatory. Any 3D-map requirement should follow a separate feasibility and cost-benefit assessment.	3D datasets may not be uniformly available or current across all urban areas and LSAs. Consumer feedback from third-party apps cannot constitute a reliable accuracy-verification mechanism. Results vary across handsets, chipsets, operating systems, and locations. Such heterogeneous data cannot provide a consistent engineering basis for compliance and would invite frequent disputes. Furthermore, requiring near-real-time alignment between a predictive map and dynamic, real-world conditions (including those captured by user feedback) is disproportionate and operationally impracticable.
6.4 Areas shown better than actual, based on consumer feedback or Authority validation, shall be displayed in amber using a 30-metre circumradius hexagonal grid until performance aligns.	Delete mandatory amber tagging based on individual or limited samples. Any corrective display should follow representative validation and defined removal criteria.	A grid-level prediction cannot be compared mechanically with point measurements. Actual RF conditions may vary significantly within the same grid due to buildings, terrain, and other obstructions. A grid value cannot reproduce signal strength at every point. Therefore, apparent deviations from a few spot samples do not necessarily indicate a technically unsound map and should not trigger a punitive display requirement like 'amber tagging'.
User feedback responses shall also be shared with TRAI through APIs.	Prescribe API-based sharing only after consultation on purpose, fields, privacy, security, frequency, retention and implementation timelines.	The proposed API/data-access requirement should be carefully reconsidered to the extent it duplicates information already available to TRAI through existing platforms or submissions. Any additional API requirement must have a clearly identified regulatory purpose and should not result in parallel data-generation, validation, and reporting obligations where substantially similar information is already available to the Authority.



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Sharing of published coverage maps with TRAI.	Finalize map-sharing format, frequency, security controls and implementation timelines after technical consultation and impact assessment.	A common schema and acceptance process are needed before mandating machine-readable geospatial submissions.
Validation of predicted maps against drive-test and crowdsourced samples, including treatment of variance as coverage-map error.	Replace spot-error classification with a statistically valid, normalized and grid-based validation methodology developed with TSPs.	Predicted, drive-test and crowd sourced data should be compared only on a like-for-like basis across band, environment, equipment and spatial unit.



COAI Response/ Inputs to Consultation Paper on Draft Amendments in The Standards of Quality of Service of Access (Wireline and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024

1. COAI welcomes the opportunity to comment on TRAI's Draft Amendment to the Standards of Quality of Service of Access (Wireline and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024. COAI and its members remain fully committed to the objective of continuously improving the quality of service delivered to consumers.
2. On a review of the draft amendments, COAI notes that a significant number of the proposed changes have the effect of substantially and materially increasing the stringency of the existing framework. These include, compliance and performance assessment of prediction based coverage maps, a reduction of the billing/charging complaint resolution timeline from four weeks to one week; a considerably widened definition of 'Significant Network Outage' and an expanded rebate base; removal of the existing cap on daily disincentives for delayed compliance reporting and, most notably, an entirely new and very broadly worded catch-all penalty provision (proposed Regulation 16B) that extends financial disincentives to any non-compliance with any provision of the regulations, including purely administrative or procedural lapses that may have no bearing on consumer experience.
3. COAI's overarching submission is that regulatory intervention – and particularly the imposition of financial disincentives – should remain the exception rather than the norm, and should be reserved for substantive, demonstrable QoS shortfalls that materially affect consumers, rather than being extended to cover procedural, documentation, discrepancies or measurement-tolerance matters. Several of the proposed benchmarks are, in COAI's assessment, not technically or operationally achievable across all circumstances, and risk exposing compliant operators to disproportionate financial disincentives for factors substantially outside their control. Similarly, new obligations such as proposed publication of a Quality of Experience Score (QoES) would benefit from a dedicated, separate consultation on scope and methodology before being incorporated into the regulations.
4. On the specific proposal concerning service-wise geospatial coverage maps, COAI notes that this framework was introduced only very recently, pursuant to TRAI's guidelines dated 22 November 2024, and submits that TSPs should be given more time for the coverage maps already implemented to stabilize before further accuracy-related benchmarks are layered on. Achieving 100% (or near-100%) accuracy in prediction-based coverage maps is technically not achievable, as discrepancies between mapped data and real-world performance are inevitable and invariably will give rise to increase in customer dissatisfaction and complaints. Daily updation of such maps is operationally impractical, particularly given the pace of ongoing 5G network expansion. Moreover, coverage maps typically provide only a high-level, outdoor-oriented view and cannot accurately convey indoor coverage, signal fluctuations, or localized congestion, which can itself invite user misinterpretation. Even technically 'live' sites may be forcibly shut down on account of local disputes (e.g. RWA/landlord issues), creating invisible coverage gaps that a periodically-updated map cannot immediately reflect. True real-time, granular map accuracy therefore remains an ongoing operational challenge, and any accuracy benchmark should account for these practical realities.
5. COAI further submits that while the Authority has justified the proposed coverage-map accuracy and validation regime primarily by reference to "global trends". However, the draft amendment goes well beyond the global practices. We submit that only one regulator viz. ARCEP, France uses a 98% reliability threshold, and even that reference is asserted in a single line without disclosing ARCEP's sample size, confidence interval, or whether non-compliance triggers automatic monetary



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penalty the way Regulation 16/16A does. Furthermore, ARCEP reduces the threshold to 95% for smaller areas. On the other hand Ofcom (UK) validates modeled predictions against a statistical tolerance band (average error $\pm 3\text{dB}$, standard deviation up to 8dB), not a single-sample binary "accurate/inaccurate" test and FCC (USA) uses a public/crowd sourced challenge-and-concede process, while Bundesnetzagentur (Germany) expresses coverage as a cell-edge probability (75–90%) rather than a percentage-accuracy benchmark on the published map itself.

6. Clearly, the proposal in the draft amendment is the strictest possible reproduction of only one jurisdiction under study. Furthermore, while the core numeric benchmark (98%) is drawn from ARCEP, the enforcement mechanism viz. monthly LSA-level sampling, per-sample binary pass/fail, automatic financial disincentive under Regulation 16(1)/16A) has no direct parallel in any of the global examples. Clearly, this implementation cannot be claimed to be based on global best practices.
7. Another key concern is the TRAI proposal on inclusion of "Call Silence Rate" as a separate mandatory QoS parameter for packet-based mobile networks (VoLTE/VoNR) which is neither driven from any global standards nor has any material utility and should be dropped. Existing KPIs (DL/UL packet drop rate and voice packet loss, including cell-level reporting) already capture the technical conditions that would cause call silence, making a new parameter is duplicative rather than informative
8. Further, Silence detection through RTP packet gaps can be misleading, since normal network mechanisms (like Discontinuous Transmission, Comfort Noise Generation, and codec-specific handling) intentionally reduce transmission during natural pauses in conversation. This could lead to false positives.
9. Perceived silence or muted audio can stem from many factors outside the operator's network for instance handset issues, app behaviour, interconnection, or the far-end network, thus, attributing it solely to the operator's radio network would be inaccurate.
10. There's no globally recognized practice or 3GPP counter for identifying an "unintended silence interval exceeding four seconds," so standard OSS platforms cannot reliably measure this on their own.
11. Certain network equipment (specifically Airspan/Samsung small-cell deployments) doesn't currently support this kind of measurement, risking incomplete reporting across the network.
12. Therefore, we submit that the Call Silence Rate should not be included in the QoS Regulations. However, in case the Authority still feels that there is a need to dig deep into this metric, then it can always opt to track it through drive-test observations, instead of making this a formal compliance requirement.
13. As we have stated in earlier consultations on other draft Regulations, we reiterate our position that Financial Disincentives (FDs) represent a departure from a modern regulatory approach that is meant to be built on forbearance, light-touch regulation, and co-regulation. The Authority should not bring in FD-based measures under any Regulation.



COAI Response/ Inputs to Consultation Paper on Draft Amendments in The Standards of Quality of Service of Access (Wireline and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024

14. We continue to believe that financial disincentives rarely drive better compliance. By attaching a price tag to compliance, the regulator effectively turns it into a choice i.e. either comply as a matter of principle, or simply pay for not complying, which replaces genuine rule-based compliance with a cost-benefit calculation. If the real goal is a better customer experience, the focus should be on strengthening the overall network experience through crowd sourced insights, rather than issuing FD orders. FDs will simply get absorbed as a cost of doing business, without ever fixing the underlying problem. In our view, the better path forward is simplification, support, and guidance.
15. We also note that the draft amendment widens the scope of FDs further by proposing to penalize even minor discrepancies in output viz. even in cases where the underlying primary data has already been submitted to TRAI, and even where the mismatch is simply between figures submitted to different divisions within TRAI. We find it hard to justify a system that requires the same or similar data to be submitted across multiple reports, only to then compare those reports and penalize any mismatch that turns up. If accuracy is the real objective, the better approach would be for TRAI to collect a single, centralized set of primary data and derive whatever outputs it needs from that itself, with different divisions drawing from this common source rather than requesting separate reports. We raised this same proposal during TRAI's Ease of Doing Business consultation as well. Despite this, the number of reports required keeps growing, with each department calling for its own reports and pushing to attach FDs to them.
16. We submit that the term "False Reporting" needs to be used with great care. It should only apply where there is clear, demonstrated intent behind a deliberate and material discrepancy in reporting. Given the sheer volume of data involved, the possibility of inadvertent clerical or computational errors is real and should be explicitly excluded from what counts as False Reporting.
17. COAI further recommends restoring quarterly assessment of QoS parameters in place of monthly assessment. The Authority would have experienced in last couple of years that our member TSPs are providing world class services and are largely compliant with the prescribed QoS benchmarks; accordingly, quarterly assessment would maintain effective regulatory oversight while reducing repetitive reporting and compliance burden, consistent with Ease of Doing Business.
18. COAI therefore respectfully urges the Authority to reconsider the specific provisions identified in the table below, and to adopt, wherever possible, the less stringent, more calibrated alternatives suggested therein – consistent with the shared objective of a robust QoS framework achieved through the minimum regulatory intervention necessary to secure consumer interest.

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification
	TO BE PUBLISHED IN THE GAZETTE OF INDIA EXTRAORDINARY PART III SECTION 4		
	TELECOM REGULATORY AUTHORITY OF INDIA NOTIFICATION		
	New Delhi, 2 nd August 2024		
	F. No. RG-17/(3)/2022-QoS —In exercise of the powers conferred upon it under section 36, read with sub-clauses (i) and (v) of clause (b) of sub-section		
	of section 11, of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997), the Telecom Regulatory Authority of India hereby makes the following regulations, namely:—		
	THE STANDARDS OF QUALITY OF SERVICE OF ACCESS (WIRELINE AND WIRELESS) AND BROADBAND (WIRELINE AND WIRELESS) SERVICE REGULATIONS, 2024 (06 of 2024)		
	SECTION-I PRELIMINARY		
1	1. Short title, commencement, and application.— (1) These regulations may be called the Standards of Quality of Service of Access (Wireline and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024.		
	(1)These regulations shall come into force with effect from 1 st October 2024.	a) We submit that the date of implementation of these regulations should be finalized in consultation with telcos post issuance of the final Regulations.	a) The amended framework introduces new compliance obligations that may require changes to business processes, network systems, IT platforms, customer management practices and internal controls. b) These changes are likely to have significant operational and financial implications, including

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			system development costs, process redesign, employee training, testing, and resource deployment. c) Therefore, adequate implementation time is essential to ensure regulatory compliance, operational readiness, and service continuity. d) TRAI should provide a minimum implementation glide path of 3-4 years from the date of notification for implementation of the regulation in this shape. e) However, while a reasonable implementation timeline may help address system development and operational preparedness challenges, it cannot resolve requirements that are intrinsically difficult to implement in an objective and verifiable manner. Specifically, the proposed coverage accuracy, silent call and 10% subscriber impact obligations are affected by fundamental limitations in measurement and attribution. There is no universally accepted ground truth for coverage assessment, current OSS platforms do not support standardized counters or adequate OEM capabilities for silent call measurement, and network operators have no reliable mechanism to accurately identify subscribers impacted by the proposed outage threshold. Accordingly, these requirements merit reconsideration and should be withdrawn rather than simply postponed through an extended implementation schedule.
	(2)These regulations shall apply to all service providers, having-		

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	(i) Unified Access Service License;		
	(ii) Unified License with authorization for Access Service;		
	(iii) Internet Service Authorization under any License; and		
	(iv) Authorization under the Telecommunications Act, 2023 for providing Access or Broadband Service:		
	<i>Provided</i> that nothing contained in these regulations shall apply to an Internet Service Provider whose total number of subscribers as on last day of the preceding financial year does not exceed ten thousand or as notified by Authority by an order or direction.		
2	2. Definitions.— (1) In these regulations, unless the context otherwise requires,—		
	(a) “Act” means the Telecom Regulatory Authority of India Act, 1997 (24 of 1997);		
	(b) “Access Service Authorization” means authorization in the designated Service Area under the Telecommunications Act, 2023 or authorization thereunder or as defined in Unified License as applicable;		
	(c) “Access Service (Wireless)” means telecommunication service provided through a wireless telecommunication under access service authorization;		
	(d) “Access Service (Wireline)” covers collection, carriage, transmission, and delivery of voice or non-voice messages over		

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	the Public Switched Telephone Network in a licensed or authorized service area and includes the provision of all types of services except those requiring a separate license or authorization;		
	(e) “Authority” means the Telecom Regulatory Authority of India established under sub-section (1) of section 3 of the Act;		
	(f) “Authorization” means the authorization as defined in the Telecommunications Act, 2023;		
	(g) “Broadband” means a data connection, through wireless or wireline access media, that is able to support interactive services including Internet access and has the capability of delivering the minimum download speed, as specified by licensor from time to time, to an individual subscriber from the point of presence (POP) of the service provider intending to provide broadband service;		
	(h) “Broadband Service” means a data service provided using broadband data connection by Internet Service Provider under any license or authorization;		
	(i) “Call Centre” means a department or a section or a facility established by the service provider for redressal of complaints and for addressing service requests of its consumers;		
	(j) “Cell” means a radio network object that can be uniquely identified by a user equipment from a (cell) identification that is broadcasted		

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	over a geographical area from access (wireless) network;		
	(k) “Cell Bouncing Busy Hour” or “CBBH” means the one-hour period in a day during which a cell in an access service wireless network experiences the maximum traffic and shall be decided as per the methodology specified in Schedule-I;		
	(l) “Cell_Q(t)” or “Cell Quality of Service Performance Measure” means the t^{th} percentile value in the set of performance against a QoS parameter corresponding to a Cell observed during different days of the assessment period; Explanation: If a Cell was operating for thirty days during an assessment period and computed Drop Call Rate (DCR) values were available for all these thirty days then arranging these thirty DCR values in ascending order and finding 90 th percentile DCR value for that Cell would point to 27 th DCR value (counted from lowest to highest DCR value);		
	(m) “Consumer” means a consumer of a service provider falling in sub-regulation (3) of regulation 1 of these regulations and includes its customer and subscriber;		
	(n) “Down Link (DL) Packet Drop Rate” or “DL-PDR” means percentage of voice traffic packets which are dropped by the network or lost in the network while transferring data on the downlink for Quality of Service (QoS) Class Identifier of voice traffic in packet switched (4G or 5G) radio access networks;		

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	(o) “Drop Call Rate” or “DCR” means the percentage of voice calls which once having been established are interrupted prior to their normal completion;		
	(p) “Evolved-Universal Terrestrial Radio Access Network (E-UTRAN) Radio Access Bearer” or “E-RAB” means a user plane connection between User Equipment (UE) and Serving Gateway (SGW) in the LTE based technology;		
	(q) “Jitter” means measure of the latency variation above and below the mean latency value;		
	(r) “Latency” means the time taken by a packet to reach the receiving endpoint after being transmitted from the sending point in broadband service;		
	(s) “License” means a license granted or having effect as if granted under section 4 of the Indian Telegraph Act, 1885 (13 of 1885) or the provisions of the Indian Wireless Telegraphy Act, 1933 (17 of 1933), as amended from time to time;		
	(sa) “Physical Resource Block” or “PRB” is the fundamental unit of radio resource allocation in 4G LTE and 5G New Radio (NR) networks. It represents a defined portion of radio spectrum over a specific time interval and serves as the basic scheduling unit through which a cell allocates radio resources to user equipment (UE) for data transmission and reception.	a) Members will respond individually.	
	(t) “Point of Interconnection” or “POI” means		

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	authorized interconnection point for ingress and egress of traffic among the interconnecting applicable systems of service providers in accordance with TRAI regulations or orders;		
	(u) “Public Land Mobile Network” means an access service wireless network set up and operated under access service license or access service authorization, for the purpose of providing land-based access services (wireless) to the public and which provides communication facilities to subscribers using mobile stations;		
	(v) “Public Switched Telephone Network” means a fixed line public telephone network providing a two-way switched telecommunication services to the general public;		
	(w) “QSD(s,t)” or “Quality of Service Spatial Distribution” means the s^{th} percentile value in the set of Cell_Q(t) values, against a QoS parameter, for all cells in a network during the assessment period;		
	(x) “Quality of Service” or “QoS” means the indicators of the performance of a telecommunication network and the degree to which such network conforms to the standards of quality of service as specified in these regulations for specified parameters and shall be measured as per the methodology provided in Schedule-I ;		
	(y) “Quarter” means a period of three		

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	consecutive months ending on the 30 th June, the 30 th September, the 31 st December and the 31 st March of the financial year;		
	(z) “Radio Access Bearer” or “RAB” means a service provided by the Access Stratum to the Non-Access Stratum for the transfer of user data between the User Equipment and the Core Network;		
	(aa) “Radio Interface” means the interface between User Equipment and the Radio Access Network access point, which encompasses all the functionality required to maintain such interfaces;		
	(bb) “Radio Resource Control” or “RRC” means a sub layer of radio interface layer 3 existing in the control plane which provides information transfer service to the Non-Access Stratum and is responsible for controlling the configuration of radio interface layers 1 and 2;		
	(cc) “Regulations” means the Standards of Quality of Service of Access and Broadband (Wireline and Wireless) Service Regulations, 2024;		
	(dd) “Service Provider” means any service provider to which these regulations apply;		
	(ee) “Six Sigma” means a data driven statistical analysis-based approach for Quality Management System(QMS);	a) The proposed “Six Sigma” definition should be deleted.	a) Six Sigma was developed for highly controlled manufacturing environments. b) Wireless networks are affected by spectrum

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			conditions, interference, terrain, weather, device capability, indoor penetration, and user mobility. c) Moreover, QoS is better measured through user experience.
	(ff) “Stand-alone Dedicated Control Channel” or “SDCCH” means, a GSM control channel for signaling purposes where the majority of call setup occurs, which is used for communication between mobile station, i.e. mobile handset and Cell before such mobile station is assigned a Traffic Channel (TCH);		
	(gg) “Tariff Offerings” means various tariffs offered by service providers to their subscribers including tariff plans, plan vouchers, special tariff vouchers, combo vouchers, top up vouchers and add-on plans;		
	(hh) “Telecommunication” means telecommunication as defined in the Telecom Regulatory Authority of India Act, 1997 (24 of 1997);		
	(ii) “Telecommunication service” means telecommunication service as defined in the Telecommunications Act, 2023;		
	(jj) “Time Consistent Busy Hour” or “TCBH” means the one-hour period starting at the same time each day for which the average traffic of the resource group concerned is greatest over the days under consideration and shall be decided as per the methodology specified in Schedule-I ;		

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	(kk) “Traffic Channel” or “TCH” means a logical channel which carries user information;		
	(ll) “Up Link (UL) Packet Drop Rate” or “UL-PDR” means percentage of voice traffic packets which are dropped by the network or lost in the network while transferring data on the uplink for Quality of Service (QoS) Class Identifier of voice traffic in packet switched (4G or 5G) radio access networks;		
	(mm) “Voice over LTE” or “VoLTE” means voice call established, maintained and released using Internet Protocol (IP) Multi-Media Sub-System (IMS) in LTE or IMT-Advanced network;		
	(nn) “Voice over New Radio” or “VoNR” means voice call established, maintained and released using Internet Protocol (IP) Multi-Media Sub-System (IMS) in IMT-2020 network;		
	(2) Words and expressions used but not defined in these regulations, but defined in the Act or the rules and other regulations made thereunder or in the Telecommunication Act 2023 or the license or the authorization or relevant International Telecommunication Union (ITU) standards or 3rd Generation Partnership Project (3GPP) standards, shall have the same meaning respectively assigned to them in the Act or the rules and the regulations or the Telecommunication Act 2023 or the license or the authorization under relevant Act or relevant ITU or 3GPP standards, as the case may be, in that order.		

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	SECTION II ADOPTION OF QUALITY MANAGEMENT FRAMEWORK	a) Please refer our above comments on “Six Sigma”.	a) Please refer our above comments on “Six Sigma”.
3	3. Design, implementation and management of Networks.- (1) Every service provider shall prepare a quality management plan, within six months of issue of these regulations, to adopt Six Sigma quality management practices for QoS management, which shall include quality of service aspects related to network availability, accessibility, retainability and customer services.		
	(2) The quality management plan shall provide for required redundancies including power, transmission links, equipment, geo-redundancies in the core network and access network as per relevant standards to achieve end-to-end QoS as per the benchmarks specified in these regulations.		
	(3) The quality management plan shall cover all technical and non-technical aspects of QoS including designing, implementation and monitoring of networks and customer services to ensure network availability, accessibility, retainability and customer experience.		
	(4) Every service provider shall submit to the Authority the performance report of their quality management plan, on yearly basis, covering the implementation of Six Sigma quality management practices and its impact on the Quality-of-Service provided by the service provider in respect of each Quality of Service parameter specified in these regulations.		

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	(5) The Authority may, from time to time, through audit conducted either by its own officers or employees or through an agency appointed by it, verify and assess the performance of quality management plan.																														
	SECTION III QUALITY OF SERVICE PARAMETERS FOR ACCESS SERVICE (WIRELINE)																														
4	4. Quality of Service Parameters in respect of which compliance reports are to be submitted to the Authority. — (1) Every service provider providing access service (wireline) shall meet the benchmarks, to be measured as per the measurement methodology provided in Schedule-I , for each of the following QoS parameters, namely:—																														
	<table border="1"> <thead> <tr> <th>S. No.</th><th>Name of Parameter</th><th>Benchmark</th><th>Assessment period</th></tr> </thead> <tbody> <tr> <td colspan="4">I. Service Provisioning</td></tr> <tr> <td>(i)</td><td>Provision of a service within 7 working days of payment of demand note by the customer</td><td>≥ 98%</td><td>Quarterly</td></tr> <tr> <td colspan="4">II. Fault Repair</td></tr> <tr> <td>(ii)</td><td>Fault incidences (No. of faults per 100 subscribers/month)</td><td>≤ 5</td><td>Quarterly</td></tr> <tr> <td>(iii)</td><td>Fault repair by next working day</td><td>≥ 85%</td><td>Quarterly</td></tr> <tr> <td>(iv)</td><td>Fault repair within three working days</td><td>≥ 99%</td><td>Quarterly</td></tr> </tbody> </table>	S. No.	Name of Parameter	Benchmark	Assessment period	I. Service Provisioning				(i)	Provision of a service within 7 working days of payment of demand note by the customer	≥ 98%	Quarterly	II. Fault Repair				(ii)	Fault incidences (No. of faults per 100 subscribers/month)	≤ 5	Quarterly	(iii)	Fault repair by next working day	≥ 85%	Quarterly	(iv)	Fault repair within three working days	≥ 99%	Quarterly		
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	Rent rebate/ validity extension in case fault is repaired after three(3) working days: For post-paid subscribers: Proportional rent rebate for actual number of days, during which fault remains pending shall be credited in next bill. For pre-paid subscribers: The validity of subscribed tariff offering shall be increased for actual number of days during which fault remain pending. (v) Mean Time-To-Repair (MTTR) ≤ 10 hours Quarterly III. Point of Interconnection (vi) Point of Interconnection (POI) Congestion (90th percentile value) ≤ 0.5% Quarterly		
5	5. Duration of time of alert for the called party.- (1) The duration of time of alert for an incoming voice call, which is neither answered nor rejected by the called party, shall be sixty seconds for access service (wireline).		
	(2) The terminating network shall, on expiry of sixty seconds in case of access service (wireline), release the incoming voice call and transmit the call release message to the originating network: Provided that the originating network may release an unanswered call after ninety seconds in case the call release message is not received from the terminating		

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	network.																	
	SECTION IV QUALITY OF SERVICE PARAMETERS FOR ACCESS SERVICE (WIRELESS)																	
6	6. Quality of Service parameters in respect of which compliance reports are to be submitted to the Authority. – (1) Every service provider providing access service (wireless) shall meet the benchmark, to be measured as per the measurement methodology provided in Schedule-I, for each of the following QoS parameters, namely:-																	
	<table><tr><th>S. No.</th><th>Name of Parameter</th><th>Benchmark</th><th>Assessment period</th><th>Effective date</th></tr><tr><td colspan="5">I. Network Availability</td></tr><tr><td>(i)</td><td>Availability of service-wise Geospatial coverage map on Service provider's website for percentage of</td><td>≥ 99%</td><td>Monthly</td><td>01.04.2025 01.10.2026</td></tr></table>	S. No.	Name of Parameter	Benchmark	Assessment period	Effective date	I. Network Availability					(i)	Availability of service-wise Geospatial coverage map on Service provider's website for percentage of	≥ 99%	Monthly	01.04.2025 01.10.2026	<u>Geospatial coverage map-</u> a) We submit that the framework for publication of service-wise geospatial coverage maps itself was introduced only recently pursuant to TRAI's guidelines dated 22 November 2024. b) The parameter "Accuracy of service-wise geospatial coverage map published on service provider's website" should not be prescribed as a Quality of Service (QoS) parameter and should be removed from Regulation 6(1). c) In the alternative, if TRAI considers publication	<u>Geospatial coverage map-</u> a) A geospatial coverage map is fundamentally a predictive engineering model developed using radio propagation software, terrain databases, clutter information, antenna characteristics, loading assumptions and other planning inputs. b) Quality of Service parameters, on the other hand, are intended to measure the actual performance delivered by the network through objectively measurable indicators such as accessibility, retainability, latency, packet loss or downtime. c) Therefore, "accuracy of coverage map" is not a
	S. No.	Name of Parameter	Benchmark	Assessment period	Effective date													
I. Network Availability																		
(i)	Availability of service-wise Geospatial coverage map on Service provider's website for percentage of	≥ 99%	Monthly	01.04.2025 01.10.2026														

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		working-cells Accuracy of service wise Geospatial coverage map Published on service provider's website	$\geq 98\%$		and validation of coverage maps necessary for consumer information and transparency purposes, the same may be retained only as a standalone publication obligation without any QoS benchmark, compliance assessment, or financial disincentive linked to network performance.	QoS parameter but merely an informational transparency mechanism.
	(ii)	Cumulative downtime (Cells not available for service)	$\leq 2\%$	Quarterly	01.10.2024	d) Coverage maps are primarily prediction-based outputs generated through standardized network planning tools for which new API requirement should be reconsidered as they would create duplication, given that TRAI already has access to coverage-related information through existing platforms and sources. e) Predicted coverage is generally computed at an aggregate grid level, such as 50m x 50m, with a representative value assigned to the grid. Signal levels may vary at different locations within the same grid. f) The proposed validation methodology compares Prediction based coverage maps, drive test field measurements, crowd sourced feedback and consumer reported observations. g) These datasets are inherently different in methodology, timing, device characteristics and operating conditions. h) Comparing these fundamentally different datasets and deriving a compliance benchmark from such comparison is technically unsound and likely to produce misleading conclusions. i) The essential objective of QoS regulation is protection of consumer interests through measurement of actual service quality. j) The coverage map neither carries live network information nor actual service performance. k) Consequently, a TSP may have a highly accurate coverage prediction map but poor QoS
				Monthly	01.04.2025	
			$\leq 1.5\%$	Monthly	01.10.2025	
			$\leq 1\%$	Monthly	01.10.2026	
	(iii)	Worst Affected Cells due to downtime	$\leq 2\%$	Quarterly	01.10.2024	
				Monthly	01.04.2025	
			$\leq 1.5\%$	Monthly	01.10.2025	
			$\leq 1\%$	Monthly	01.10.2026	
				Quarterly	01.10.2024	
		Percentage of significant network outage (services not available in a				

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	district — for more than 4 hours) reported to the Authority within 24 hrs of start of the outage Note: Significant Network Outage is defined as an event where access service (wireless) (iv) In a district remains unavailable for a continuous period exceeding four (4) hours, or where more than ten percent (10%) of subscribers in the Licensed Service Area (LSA) Experience complete loss of	100 %	Monthly	01.04.2025 01.10.2026		performance, or conversely may have excellent QoS performance while variances arise between prediction outputs and isolated field observations. l) Hence, the proposed parameter therefore lacks the correlation with actual consumer QoS. m) The international references mentioned by TRAI indicate that regulators use coverage maps primarily as transparency and consumer-information tools. Various jurisdictions publish and validate coverage maps, but do not treat prediction map accuracy as a QoS benchmark attracting regulatory non-compliance and financial disincentives in the manner proposed. n) In view of the above, the proposed parameter 'Accuracy of service-wise geospatial coverage map published on service provider's website' should be deleted from Regulation 6(1). o) Coverage maps are theoretical/predictive (built from network and terrain inputs), not real-time or point-specific and actual conditions vary due to terrain, weather, load, device type, etc. p) RF propagation has inherent scientific limits (fading, shadowing, statistical models) that make near-perfect point-accuracy technically impossible to guarantee. q) Verifying 98% accuracy nationwide would require continuous, impractical field measurement and even that data goes stale quickly as networks and environments change. r) RSRP alone is a flawed compliance metric it doesn't account for modern beamforming, device uplink power, network load, or advanced

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	Service for a continuous period exceeding four (4) hours. Compensation Rebate to the subscribers for significant network outages of more than 24 hrs: For post-paid subscribers registered in the district or affected post-paid subscribers, as applicable: Proportional rent rebate, as per plan charges, for affected number of days shall be credited in next bill.		signal processing that let networks perform well even at "low" RSRP. s) The proposed accuracy/tolerance margins (3 dB, 1%) are smaller than the measurement uncertainty of the testing method itself, making the standard unenforceable in a technically sound way. <u>Comparisons to France's ARCEP framework don't account for India's much larger scale and diversity.</u> t) We further submit that coverage classification based on RSRP thresholds is not a sound approach, for several reasons: - RSRP measures received power and it is not, on its own, a measure of service quality. - A single RSRP cutoff doesn't translate consistently across different technologies, spectrum bands, and bandwidths. - LTE and NR RSRP are measured differently and can't be directly compared. - With massive MIMO beam forming, SSB-RSRP tends to understate the coverage actually being delivered. - Labeling anything below –110 dBm as "no coverage" doesn't reflect reality. - RSRP ignores the uplink side entirely, device transmit power (now higher in newer devices, e.g., Power Class 2 at 26 dBm, Power Class 1.5 at 29 dBm), receive diversity, and higher network layers all extend effective coverage beyond what RSRP alone suggests. - Descriptive labels attached to RSRP bands can imply service-quality conclusions the metric can't actually support. - RSRP doesn't account for network load, while real user experience does. - Modern LTE/5G networks now deliver strong service even at RSRP levels that would once

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	For the pre-paid subscribers registered in the district or affected pre-paid subscribers, as applicable: The validity of subscribed tariff offering shall be increased by equal number of affected days.					have been considered weak, thanks to smarter signal processing. x. Techniques like dynamic scheduling, adaptive modulation, and advanced error correction keep service running even as raw signal strength drops. u) It is further submitted that the enforcing the proposed accuracy standard and associated FDs raises further problems: i. A 98% accuracy target goes beyond what RF prediction can reliably deliver. ii. No comparable global regulatory regime sets a similar accuracy benchmark for public coverage maps. iii. The proposed 3 dB margin is smaller than the natural uncertainty in the validation process itself. iv. GPS/location uncertainty in sample data can be as large as the grid cells being measured. v. Outdoor predictions can't fairly be checked against indoor measurements. vi. The suggested accuracy formula lacks sufficient statistical safeguards. vii. A nationwide 3D digital-mapping requirement may not be practically achievable at scale. viii. The data volumes and computing power needed at the proposed resolution and refresh rate may not be sustainable. ix. Disclosing cell-level signal data could raise security and commercial-sensitivity concerns. x. The proposed "amber" marking adds a second, potentially conflicting reference grid without clear rules for resolving it. xi. A 1% tolerance for false reporting is tighter than the inherent uncertainty of the proposed testing method. i. In sum, requiring point-level accuracy from
	II. Voice Connection Establishment (Accessibility)					
	(v)	Call Set-up Success Rate: $\geq$ 98%	Intra-Service provider (within service provider's network)	Quarterly	01.10.2024	
				Monthly	01.04.2025	
	(vi)	Call Set-up Success Rate: $\geq$ 95%	Inter-Service provider (incoming from other service)	Quarterly	01.10.2024	
				Monthly	01.04.2025	

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		providers' network)					
	(vii)	Point of Interconnection (POI) Congestion (90 th percentile value)	≤ 0.5%	Quarterly	01.10.2024		predictive coverage maps or treating them as a stand-in for actual customer experience is not scientifically or operationally realistic and should not be made mandatory. ii. If TRAI still wants to pursue this kind of assessment, it should be built on data-driven or crowdsourced inputs collected directly by TRAI, and used for benchmarking and public information purposes only not as a compliance KPI carrying financial disincentives. v) Further, introducing user feedback on maps would invite frequent disputes before the authority, as consumers rely on disparate third-party apps and handsets of varying quality and sensitivity to measure signal strength—yielding inconsistent, non-standardised results that lack verifiable engineering basis and complicate regulatory adjudication. w) Therefore, achieving accurate coverage maps is challenging, as discrepancies between mapped data and real-world performance inevitably lead to customer complaints. x) Also, daily updating the coverage maps are operationally impractical, especially given the rapid 5G expansion as well as ongoing optimization activities. Moreover, maps typically provide a high-level, outdoor-oriented view that fails to accurately convey indoor coverage, signal fluctuations, or congestion, inviting user misinterpretation. y) It is also important to note that even technically "live" sites may be forcibly shut down due to local disputes, creating invisible gaps that the map cannot immediately reflect—making true real-time, granular accuracy an ongoing operational struggle.
				Monthly	01.04.2025		
	III. Voice Connection Maintenance (Retainability)						
	(viii)	DCR Spatial Distribution Measure for Circuit Switched (2G/3G) network [CS_QSD (88, 88)]	≤ 2%	Quarterly	01.10.2024		
				Monthly	01.04.2025		
		DCR Spatial Distribution Measure for Circuit Switched (2G/3G) network [CS_QSD (89, 89)]	≤ 2%	Monthly	01.04.2026		
		DCR Spatial Distribution Measure for Circuit Switched (2G/3G)	≤ 2%	Monthly	01.04.2027		

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Sr No.	Regulation				Remarks	Proposed Regulation/Justification
		network [CS_QSD (90, 90)]				
	(ix)	DCR Spatial Distribution Measure for $\leq 2\%$ Packet Switched (4G/5G and beyond) network [PS_QSD (92, 92)]	Quarterly	01.10.2024		z) India cannot be compared to other European countries where purchasing power is very high. As a result, people there can afford high-quality handsets. Further, congestion and population density is much higher in India. Thus, a margin 3 dBm is not sufficient in the case of India. aa) <u>Considering the above, we respectfully submit that TRAI should:</u> i) <u>Reconsider the proposed accuracy benchmark for service-wise geospatial coverage maps;</u> ii) <u>Continue to treat coverage maps as a disclosure and transparency requirement, limited to their availability, prescribed format, service-wise representation, and periodic updates;</u> iii) <u>Refrain from imposing any financial disincentive on perceived inaccuracies in predictive coverage maps, especially in the absence of a standardized and universally accepted ground-truth validation methodology;</u> iv) <u>Alternatively, should TRAI deem accuracy validation necessary, develop and prescribe a uniform, independent, TRAI-led coverage assessment and drive-testing framework, with clearly defined parameters relating to sampling, measurement techniques, devices,</u>
		DCR Spatial Distribution Measure for $\leq 2\%$ Packet Switched (4G/5G and beyond) network [PS_QSD (93, 93)]	Monthly	01.10.2025		
		DCR Spatial Distribution Measure for $\leq 2\%$ Packet Switched (4G/5G and beyond) network [PS_QSD (94, 94)]	Monthly	01.04.2026		
		DCR Spatial				

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Sr No.	Regulation					Remarks	Proposed Regulation/Justification
		Distribution Measure for Packet Switched (4G/5G and beyond) network	≤ 2%	Monthly	01.04.2027		<u>routes, environmental conditions, network loading, and permissible tolerances, prior to introducing any compliance obligations; and</u> v) <u>Allow sufficient time for the recently implemented coverage-map framework to mature and stabilize before imposing any additional accuracy-related regulatory requirements.</u> <u>Significant Network Outage and rebate obligations-</u> Existing framework should be retained, and the proposed amendments should not be introduced in their present form a) It is submitted that the current definition for Significant Network Outage (SNO) is sufficient and adequately captures materially significant outages, with respect to both aspects viz. duration of outage and scale of the outage and there is no need to redefine this for the purpose of QoS Regulations. b) We submit that the approach towards SNO should be calibrated and should not dissuade the service providers from roll-out objectives. We submit that already the impact of SNO regulations is apparent in the market and there is inertia towards rolling out in smaller and geographically isolated areas. In such areas minor aberrations in one or two sites can impact 10% or more users, despite the absolute number being in 10s or low 100s and trigger SNO provisions, thus, further lowering the criteria will
		[PS_QSD (95, 95)]					
		Downlink Packet Drop Rate for Packet Switched Network (4G/5G and beyond)	≤ 2%	Quarterly	01.10.2024		
		[DLPDR_QSD (88, 88)]		Monthly	01.04.2025		
	(x)	Downlink Packet Drop Rate for Packet Switched Network (4G/5G and beyond)	≤ 2%	Monthly	01.04.2026		
		[DLPDR_QSD (89, 89)]					
		Downlink Packet Drop Rate for Packet Switched Network (4G/5G and beyond)	≤ 2%	Monthly	01.04.2027		
						a) Tariff offerings in which 80th percentile value of measured test samples for which download and upload speed is ≥ offered typical download and upload	

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Sr No.	Regulation					Remarks	Proposed Regulation/Justification
		[DLPDR_QSD (90, 90)]				speed for 4G/5G technology in tariff offerings <u>Network Slicing</u> a) Members will respond individually.	only keep the uncovered areas underserved. We have highlighted the genuine operational difficulties of restoring service in remote or difficult terrain for consideration in the enclosed table and request that the same may be recognized, otherwise may lose the opportunity of connecting users in zeal for over regulation. c) Further on the related aspect, we strongly oppose the proposal of rent rebate for wireless users as on one side this has massive operational difficulties in calculating per-subscriber impact, the absence of established international norms on the other hand it is against the well-established, legal principle (enunciated by Hon'ble Supreme Court) that regulation should avoid disproportionate or arbitrary measures. We submit that such wide-ranging rent rebate on wireless subscribers may also create unwanted inflationary pressure in the market. d) In view of this, we submit that the SNO parameter should not be included in mandatory QoS compliance reporting with financial disincentives or rebates. e) The definition of 'Significant Network Outage' for access service (wireless) is substantially widened. f) Presently, Network Operations Centre are architected to detect complete non-availability at an exchange/cell-aggregation level (the existing district-level trigger), which is objectively measurable from network management systems. g) Detecting that 'more than 10% of subscribers in the LSA' have lost service requires real-time, subscriber-location-linked impact analytics that are not uniformly deployed today, necessitating
		Uplink Packet Drop Rate for Packet Switched Network (4G/5G and beyond)	≤ 2%	Quarterly	01.10.2024		
		[ULPDR_QSD (88, 88)]		Monthly	01.04.2025		
	(xi)	Uplink Packet Drop Rate for Packet Switched Network (4G/5G and beyond)	≤ 2%	Monthly	01.04.2026		
		[ULPDR_QSD (89, 89)]					
		Uplink Packet Drop Rate for Packet Switched Network (4G/5G and beyond)	≤ 2%	Monthly	01.04.2027		
		[ULPDR_QSD (90, 90)]					
	IV. Broadband Service						
				Quarterly	01.10.2024		
	(xii)	Latency (in 4G and 5G network)	≤ 75 msec	Monthly	01.04.2025		

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Sr No.	Regulation					Remarks	Proposed Regulation/Justification
			≤ 50 msec	Monthly	01.04.2026		material new investment in geolocation-linked service-monitoring systems, and raising subscriber-privacy and data-protection considerations in continuously correlating individual subscriber status with location.
				Quarterly	01.10.2024		
	(xiii)	Packet Drop Rate (in 4G and 5G network)	≤ 3%	Monthly	01.04.2025		
			≤ 2%	Monthly	01.04.2026		h) Further, the proposed rebate framework should appropriately account for roaming subscribers, as their presence in an affected LSA may create additional complexities in identifying service impact and undertaking inter-operator reconciliation.
	(xiv)	Tariff offerings in which 80 th percentile value of measured test samples for which download and upload speed is ≥ offered typical download and upload speed for 4G/5G technology in tariff offerings	80 th percentile 100%	Quarterly	01.10.2024		
				Monthly	01.04.2025 01.10.2026		i) Any rebate-related obligations involving roaming subscribers may also increase operational costs and financial exposure, potentially resulting in higher domestic or international roaming tariffs. j) There is Ambiguity in “complete loss of service” : The meaning of complete loss of service is not clear. The TSPs provide different access services (voice, sms, data etc) over different technologies (2G, 4G, 5G) and through different spectrum bands, as such loss in any one of these layers may not mean complete loss of service. The complete loss of service should ideally be when there is no wireless technology, and no access service is available.
	V. Network Slicing						
	(xv)	Cells having daily PRB utilisation > 80% (in 5G network)	≤ 1%	Monthly	01.10.2026		k) Hence, we submit that this cannot be implemented. l) Further, on the rebate obligations, we submit that the subscribers registered in the district' is an objectively verifiable class drawn from the service provider's own subscriber database. This should be the sole rebate basis. m) 'Affected subscribers...as applicable' is undefined and would require case-by-case geofencing/tower-mapping determinations for

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification
			every outage event, creating scope for disputes, over-inclusive claims and rebate leakage. Individual subscriber-level determination of outage impact is technically infeasible in mobile networks due to subscriber mobility. For example: • A subscriber registered in another district may temporarily visit the affected district. • A subscriber registered in the affected district may be travelling elsewhere. • A subscriber may be present in the area but have their handset switched off. This makes the term 'affected subscribers' an objectively indeterminable category for mobile services." n) Hence COAI recommends retaining the existing district based SNO determination.
	Note: The assessment period and corresponding benchmark for respective QoS parameters shall come into force with effect from specified 'Effective date' and the benchmarks for the QoS parameters specified against the previous assessment period shall stand withdrawn accordingly.		
	(2) Every service provider shall, in all its tariff offerings for broadband (wireless) service, indicate the technology wise typical download and upload speed generally available to the consumers subscribers.	<u>Technology wise download and upload speed-</u> a) We submit that instead of technology wise typical download and upload speed, <u>a typical</u>	<u>Technology wise download and upload speed-</u> a) The requirement of 'technology wise' disclosure of typical download/upload speed in every tariff

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification
		<u>range of technology wise</u> upload/download speed should be displayed. b) Further, there should not be any need to report the typical range of speed under each tariff offerings to TRAI.	offering adds a new layer of granularity to publication requirements and would impose significant operational and compliance burden, even though wireless speed does not vary with the tariff plan itself. b) Wireless speeds depend on several external factors, including radio propagation characteristics, topology, website latency, mobile applications and operating systems, number of concurrent active subscribers on a cell, and the make and model of the wireless device. c) Moreover, most tariff offerings today are technology-agnostic at the point of sale. A subscriber's device dynamically attaches to whichever radio technology (4G/5G) is available and optimal at a given location and time, and this mix changes continuously as 5G rollout progresses. d) Requiring technology-wise speed disclosure within every individual tariff offering would require continuous re-computation and republication of the offering itself as the underlying network technology mix evolves, which is disproportionate to the transparency objective and is thus not required. e) Therefore, it is not practical to indicate a common typical speed for every wireless tariff plan. f) Further TSPs continuously invest in network

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification
			modernization to provide the best possible user experience regardless of the underlying access technology. g) Today, most devices are configured to connect to the highest available technology by default, and users are naturally served by the best available network layer. Therefore, segregating speed measurements between 4G and 5G does not accurately reflect the customer's actual service experience. h) It is also pertinent to note that when Independent Drive Tests (IDTs) were initially introduced, speed measurements were conducted irrespective of the access technology being used. Since network selection is largely dependent on device settings and user mobility, technology-wise segregation lacks practical relevance and should therefore be withdrawn. i) Measurement Methodology- TRAI has proposed that the 80th percentile value should be derived after arranging test results in descending order. This may create ambiguity because percentile calculations are generally independent of the sorting direction, provided the percentile methodology is correctly defined. Specifying descending order may lead to confusion without changing the statistical outcome. j) We have also observed similar confusion during recent audits, where auditors faced challenges in interpreting the proposed methodology. This

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification
			ambiguity may result in inconsistent implementation and interpretation across stakeholders. k) We therefore recommend replacing the percentile-based approach with an Average Speed Methodology, wherein the measured average speed should meet at least 80% of the speed. l) This approach is preferred because: i. End users generally assess network performance based on average speeds reported by speed-test applications. ii. Most speed-testing platforms, including the TRAI MySpeed application, prominently display average speed results. iii. Average speed is easier for consumers to understand and relate to. iv. The methodology is simpler, more transparent, and less prone to interpretational differences. v. Accordingly, the percentile-based assessment should be reconsidered and replaced with an average-speed-based framework.
	(3) Every service provider, planning to create a new network slice in their 5G network, shall submit the details of proposed and existing network slice parameters, at least twenty one (21) days in advance to the Authority, clearly demonstrating the availability of sufficient capacity in the cell(s) which are part of different slices, in such manner and format as may be directed by the Authority, from time to time.	a) Members will respond individually.	

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification																										
7	7. Quality of Service parameter in respect of which compliance is to be monitored by the service provider and reported to the Authority.— (1) Every service provider providing access service (wireless) shall meet and monitor the benchmarks, to be measured as per the measurement methodology provided in Schedule-I, for each of the following QoS parameters, namely: –																												
	<table><tr><th>S. No.</th><th>Name of Parameter</th><th>Bench mark</th><th>Assess ment period</th><th>Effective date</th></tr><tr><td rowspan="2">(i)</td><td rowspan="2">Maximum Bandwidth utilization between radio and core network during TCBH</td><td rowspan="2">≤ 80%</td><td>Quarterly</td><td>01.10.2024</td></tr><tr><td>Monthly</td><td>01.04.2025</td></tr><tr><td rowspan="2">(ii)</td><td rowspan="2">SDCCH Congestion/ RRC Congestion</td><td rowspan="2">≤1%</td><td>Quarterly</td><td>01.10.2024</td></tr><tr><td>Monthly</td><td>01.04.2025</td></tr><tr><td rowspan="2">(iii)</td><td rowspan="2">Traffic Channel congestion i.e. TCH, RAB, E-RAB, EN- DC (E-UTRAN New Radio Dual Connectivity for NSA to access 4G and</td><td rowspan="2">≤ 2%</td><td>Quarterly</td><td>01.10.2024</td></tr><tr><td>Monthly</td><td>01.04.2025</td></tr></table>	S. No.	Name of Parameter	Bench mark	Assess ment period	Effective date	(i)	Maximum Bandwidth utilization between radio and core network during TCBH	≤ 80%	Quarterly	01.10.2024	Monthly	01.04.2025	(ii)	SDCCH Congestion/ RRC Congestion	≤1%	Quarterly	01.10.2024	Monthly	01.04.2025	(iii)	Traffic Channel congestion i.e. TCH, RAB, E-RAB, EN- DC (E-UTRAN New Radio Dual Connectivity for NSA to access 4G and	≤ 2%	Quarterly	01.10.2024	Monthly	01.04.2025		
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			Monthly	01.04.2025																									
	<u>Silence Call Rate-</u> a) We submit that at present, the parameter of ‘Silence Call Rate’ should be deleted.	<u>Silence Call Rate-</u> a) Introduction of an entirely new QoS parameter, ‘Silence Call Rate’ (≤1%, Monthly), adds to the parameters that must be designed for, measured, monitored and reported. b) Such a parameter should not be introduced																											

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Sr No.	Regulation					Remarks	Proposed Regulation/Justification
		5G both networks at same time) or DRB (Data Radio Bearer for SA) Congestion					without first establishing a clear, technically validated and standardised measurement methodology and examining the network-wide feasibility of silence-call detection across legacy 2G/3G and VoLTE calls.
	(iv)	Connections with good voice quality	≥ 95%	Quarterly	01.10.2024		c) There is no standardized, OEM-supported OSS counter capable of reliably identifying silence calls across heterogeneous mobile networks. An RTP gap does not by itself establish customer-perceived silence; it can arise from transient packet loss, jitter, or normal codec behavior.
	(v)	Jitter (in 4G and 5G network)	≤ 50 msec	Quarterly	01.10.2024		d) Moreover, no standardized measurement methodology presently exists in Schedule I (or under 3GPP/ITU-T test standards) to reliably distinguish a genuine 'silent' call from legitimate momentary muting, codec-related artefacts in VoLTE calls, or ambient conditions at the calling/called end – all of which are outside network control.
	(vi)	Messaging: Successful SMS delivery within service provider's network	≥ 95%	Quarterly	01.10.2024		e) Mandating compliance reporting against a numeric benchmark (≤ 1%) without first defining and validating a consistent, auditable test methodology (ideally through an industry pilot) risks inconsistent measurement across service providers and disputes over benchmark compliance.
	(vii)	Silence Call Rate	≤ 1%	Monthly	01.10.2026		f) We would like to reiterate that there is no globally established practice or regulatory requirement for reporting Call Silence Rate as an OSS-based network KPI. g) From a technical standpoint, a standard OSS

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			platform utilizing network counters cannot unambiguously calculate the proposed KPI. There is currently no standard 3GPP counter that directly identifies whether an established voice call experienced an unintended silence interval exceeding four seconds. h) Furthermore, RTP packet gaps cannot automatically be interpreted as silence events. Modern voice networks employ several mechanisms that intentionally suppress voice packet transmission during periods of conversational silence, including: i. Discontinuous Transmission (DTX) ii. Silence Insertion Descriptor (SID) frames iii. Comfort Noise Generation (CNG) iv. Codec-specific handling of speech inactivity i) As a result, relying on RTP gaps or similar indicators can create significant false positives and lead to inaccurate measurements. j) The proposed parameter is more suited to specialized drive-test benchmarking environments and is already evaluated through Independent Drive Testing (IDT). It is not suitable for implementation as a routine OSS-based KPI for network-wide regulatory reporting. k) Therefore, we strongly recommend that the proposed requirement for reporting Call Silence Rate be withdrawn. Alternatively, before any benchmark is considered, a detailed methodology-development exercise followed by an industry/OEM feasibility pilot is necessary to

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification
			validate technical feasibility and standardize the measurement
	Note: The assessment period and corresponding benchmark for respective QoS parameters shall come into force with effect from specified 'Effective date' and the benchmarks for the QoS parameters specified against the previous assessment period shall stand withdrawn accordingly.		
	(2)The service provider shall— (a) measure the service coverage of the access service (wireless) through drive tests at periodic intervals and take remedial action to address problems related to network coverage, interference, call drop, voice quality and data speed observed during such drive tests; (b) maintain and make available such records as per clause (a) in electronic format to the Authority; and (c) provide to the Authority or any agency or representative authorized by the Authority, on demand, for verification, the primary data for the records maintained as per clause (b) above.		
	(3)The Authority may, through drive tests of the access service (wireless) conducted either by its own officers or employees or through an agency appointed by it or through joint drive tests with the service provider, assess the quality of the service in the coverage area, and the service provider shall facilitate such drive tests.		
	(4)The service provider shall, suo-moto, take all remedial action to rectify shortcomings or deficiencies, if any, detected during the joint drive tests involving service providers without waiting for any communication from		

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification
	the Authority.		
	(5)In respect of drive test conducted by the Authority or joint drive tests under sub-regulation (3), the service provider shall submit to the Authority— (a) its action plan for removal of the shortcomings or deficiencies, within fifteen days of receipt of the communication from the Authority about such shortcomings or deficiencies; and (b) its compliance report, after completing the remedial action, within three months of submission of action plan, and in case, remedial action is not completed within three months of submission of action plan, then a quarterly compliance report shall be submitted till completion of the remedial action.		
8	8. Duration of alert for the called party.—: (1) The duration of time of alert for an incoming voice call, which is neither answered nor rejected by the called party, shall be thirty seconds for access service (wireless). (2) The terminating network shall, on expiry of thirty seconds in case of access service (wireless), release the incoming voice call and transmit the call release message to the originating network: <i>Provided that</i> the originating network may release an unanswered call after ninety seconds in case the call release message is not received from the terminating network.		
	SECTION V		

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification																																
	QUALITY OF SERVICE PARAMETERS FOR BROADBAND (WIRELINE) SERVICE																																		
9	9. Quality of Service Parameters for which compliance reports are to be submitted to the Authority.— (1) Every Service Provider having Internet Service Authorization and providing broadband (wireline) service shall meet the benchmarks, to be measured as per the measurement methodology provided in Schedule-I, for each of the following QoS parameters, namely:— <table border="1"> <thead> <tr> <th>S. No.</th><th>Name of the Parameter</th><th>Benchmark</th><th>Assessment period</th></tr> </thead> <tbody> <tr> <td colspan="4">I. Service provisioning</td></tr> <tr> <td>(i)</td><td>Provision of a service within seven (7) working days of payment of demand note by the customer</td><td>≥ 98%</td><td>Quarterly</td></tr> <tr> <td colspan="4">II. Broadband Service Performance</td></tr> <tr> <td>(ii)</td><td>Latency</td><td>≤ 50 msec</td><td>Quarterly</td></tr> <tr> <td>(iii)</td><td>Packet Drop Rate</td><td>≤ 1%</td><td>Quarterly</td></tr> <tr> <td>(iv)</td><td>Tariff offerings in 99th percentile which 90th percentile value of measured test samples—for which download and upload speed is ≥ offered typical download and upload speed in tariff offerings</td><td>99th percentile 100%</td><td>Quarterly</td></tr> <tr> <td>(v)</td><td>Maximum Bandwidth</td><td>≤ 80%</td><td></td></tr> </tbody> </table>	S. No.	Name of the Parameter	Benchmark	Assessment period	I. Service provisioning				(i)	Provision of a service within seven (7) working days of payment of demand note by the customer	≥ 98%	Quarterly	II. Broadband Service Performance				(ii)	Latency	≤ 50 msec	Quarterly	(iii)	Packet Drop Rate	≤ 1%	Quarterly	(iv)	Tariff offerings in 99th percentile which 90th percentile value of measured test samples—for which download and upload speed is ≥ offered typical download and upload speed in tariff offerings	99th percentile 100%	Quarterly	(v)	Maximum Bandwidth	≤ 80%		<u>Speed-compliance benchmark</u> a) Members will respond individually. <u>Mean-Time-To-Repair parameter</u> a) Members will respond individually <u>Significant Network Outage</u> a) This Regulation should be deleted.	<u>Significant Network Outage</u> a) A new ‘Significant Network Outage’ reporting and 100% rebate obligation is introduced for broadband (wireline), with a wide trigger of 20% degradation in declared speed for a continuous 4-hour period, considerably extending compensation liability. b) This is a comparatively sensitive trigger given that internet throughput is materially influenced by factors beyond the last-mile access network – peak-hour traffic, content-server load, upstream peering and transit congestion – which are frequently outside the access-service provider's control. c) Operationalizing this would require granular, subscriber-level, continuous speed-monitoring infrastructure that is not currently mandated, and the resulting financial exposure (100% rebate liability) would often be disproportionate to the extent of degradation genuinely attributable to the operator's own network.
S. No.	Name of the Parameter	Benchmark	Assessment period																																
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Sr No.	Regulation			Remarks	Proposed Regulation/Justification
	utilization of any Customer serving node to ISP Gateway Node [Intra-network] or Internet Exchange Point Link(s)		Quarterly		
(vi)	Jitter	≤ 40ms	Quarterly		
	III.Fault Repair				
(vii)	Fault incidences (No. of faults per 100 subscribers/month)	≤ 5	Quarterly		
(viii)	Fault repair by next working day	≥ 85%	Quarterly		
(ix)	Fault repair within three working days	≥ 99%	Quarterly		
	Rent rebate/ validity extension in case fault is repaired after three (3) working days: For post-paid subscribers: Proportional rent rebate for actual number of days, during which fault remain pending, shall be credited in next bill. For pre-paid subscribers: The validity of subscribed tariff offering shall be increased for actual number of days, during which fault remain pending.				
(x)	Mean Time-To-Repair (MTTR)	≤ 10 hours	Quarterly		

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Sr No.	Regulation				Remarks	Proposed Regulation/Justification
	(xi)	Percentage of significant network outage reported to the Authority within 24 hrs of start of the outage Note: Significant Network Outage is defined as an event where broadband (wireline) service in a district remains unavailable for a continuous period exceeding four (4) hours, or where more than ten percent (10%) of subscribers in the Service Area experience complete loss of service or material degradation in service quality for a continuous period exceeding four (4) hours. Material degradation in service quality shall mean a	100%	Quarterly		
		reduction of twenty percent (20%) or more in the download or upload speed experienced by a subscriber vis-à-vis the declared typical download or upload				

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification
	speed. Rebate to the subscribers for significant network outages of more than 24 hrs: For post-paid subscribers registered in the district or affected post-paid subscribers, as applicable: Proportional rent rebate, as per plan charges, for affected number of days shall be credited in next bill. For the pre-paid subscribers registered in the district or affected pre-paid subscribers, as applicable: The validity of subscribed tariff offering shall be increased by equal number of affected days.		

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Sr No.	Regulation	Remarks	Proposed Regulation/Justification																		
	(2) Every service provider shall, in all its tariff offerings for broadband (wireline) service, indicate the typical download and upload speed generally available to the consumers. Explanation: For the purposes of this regulation, broadband (wireline) service shall include all fixed wireless and wireline medium including copper, fibre, cables etc.																				
	SECTION VI QUALITY OF SERVICE PARAMETERS RELATED TO CUSTOMER SERVICE																				
10	10. Quality of Service Parameters in respect of which compliance reports are to be submitted to the Authority.— (1) Every service provider providing access service (wireline) or access service (wireless) or broadband (wireline) service, as applicable, shall meet the benchmarks, to be measured as per the measurement methodology provided in Schedule-I, for each of the following QoS parameters, namely:—																				
	<table border="1"> <thead> <tr> <th>S. No.</th><th>Name of Parameter</th><th>Benchmark</th><th>Assessment period</th></tr> </thead> <tbody> <tr> <td colspan="4">II. Customer Service</td></tr> <tr> <td>(i)</td><td>Billing and charging complaints</td><td>≤ 0.1%</td><td rowspan="3"> Access service (wireline) and broadband (wireline) service – Quarterly </td></tr> <tr> <td>(ii)</td><td>Resolution of billing/charging complaints within four weeks one week</td><td>100%</td></tr> <tr> <td></td><td>Application of adjustment to customer's account</td><td></td></tr> </tbody> </table>	S. No.	Name of Parameter	Benchmark	Assessment period	II. Customer Service				(i)	Billing and charging complaints	≤ 0.1%	Access service (wireline) and broadband (wireline) service – Quarterly	(ii)	Resolution of billing/charging complaints within four weeks one week	100%		Application of adjustment to customer's account		<u>Timeline for billing/charging complaints-</u> a) We submit that reducing the timeline for resolution of billing/charging complaints from four weeks to one week against a 100% (zero-tolerance) compliance benchmark, is a very substantial tightening of the SLA. b) We recommend not revising the TAT to 1 week. If reduction is required, same may kindly be made 2 weeks atleast. c) Accordingly the existing benchmark of four	<u>Timeline for billing/charging complaints-</u> a) We submit that billing/charging complaints are not uniform in nature and may require detailed investigation and coordination between network, IT and finance functions and, in certain cases, interconnecting operators roaming partners, or third-party payment aggregators. b) Billing complaints are not uniform and can vary materially in complexity, sometimes requiring coordinated investigation across billing, network, IT, and finance functions. Resolution often
S. No.	Name of Parameter	Benchmark	Assessment period																		
II. Customer Service																					
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	(iii)	within one week from the date of resolution of billing and charging complaints or rectification of faults or rectification of significant network outage, as applicable	100%	• Access service (wireless)- • Quarterly w.e.f. 01.10.2024	weeks for complaint resolution should be retained.	depends on external entities like foreign roaming partners, other operators, banks, or payment aggregators, who cannot be compelled to respond within a seven-day timeline. A rigid 7-day deadline risks incentivizing premature closure of complaints rather than accurate, final resolution c) In some cases, resolution may also require additional information, clarification or confirmation from the customer. The customer may not always be available within the prescribed timeline, which may delay closure despite timely action by the service provider. Hence, it is important to recognise that effective engagement with customers for complaint resolution is inherently time-consuming and cannot always be completed within rigid, prescribed timelines. d) A blanket one-week timeline applicable to 100% of complaints is therefore unlikely to be achievable for all complaint types, particularly complex cases involving multiple systems or entities, and may result in disproportionate financial disincentives. e) Moreover, this timeline is considerably shorter than comparable consumer-grievance timelines in other regulated Indian sectors (for instance, banking-sector grievance/Ombudsman frameworks typically allow up to 30 days). f) A benchmark that is systemically difficult to meet across all complaint categories risks becoming a source of routine, rather than exceptional, non-
	(iv)	Accessibility of call centre/ customer care	≥ 95%	• Monthly w.e.f. 01.04.2025		
	(v)	Percentage of calls answered by the operators (voice to voice) within ninety seconds	≥ 95%			
	(vi)	Termination/ closure of service within seven working days of receipt of customer's request	100%			
	(vii)	Refund of deposits within 45 days of closure of service or non-provisioning of service	100%			

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			compliance, undermining the credibility of the benchmark itself. Hence we submit that the earlier benchmark should be retained.
	Provided that the service provider providing both access service (wireline) and broadband (wireline) service shall meet the benchmarks for both the services on aggregated basis. Explanation: For the purposes of this regulation, broadband (wireline) service shall include all fixed wireless and wireline medium including copper, fibre, cables etc.	<u>Disaggregation of reporting of access service (wireline) and broadband (wireline) parameters-</u> a) Members will respond individually.	
11	11. Quality of Service parameters for customers' perception of service.—		
	(1) The performance of the service providers providing access service (wireline), access service (wireless) or broadband (wireline) service, as the case may be, shall be subject to periodic assessment by the Authority through customer satisfaction surveys, which may be conducted by the Authority either through its own officers or employees or through any agency appointed by it.		
	(2) The customer satisfaction survey shall include questionnaire on various Quality of Service aspects of this regulation from the consumer perspective, as specified by the Authority.		

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	(3) The service provider shall, take all remedial action to rectify shortcomings or deficiencies, if any, observed in the result of the customer satisfaction survey and submit to the Authority— (a) its action plan for removal of the shortcomings or deficiencies, within fifteen days of receipt of the communication from the Authority about such shortcomings or deficiencies; and (b) its compliance report, after completing the remedial action, within three months of submission of action plan and in case, remedial action is not completed within three months of submission of action plan, then a quarterly compliance report shall be submitted till completion of remedial action.		
	SECTION VII RECORD KEEPING, REPORTING, AUDIT AND PUBLICATION OF QUALITY OF SERVICE PERFORMANCE		
12	12. Record Keeping.— (1) The service provider shall document the process of collection, mapping and processing of data for each QoS parameter specified by the Authority under regulation 4, regulation 6, regulation 7, regulation 9, and regulation 10, as applicable, and submit to the Authority, within sixty days of notification of these regulations, the documented process of collection, mapping and processing of data of each QoS parameter, indicating the correlation with the primary data which are derived from system counters or codes in different network elements or through measurement setup, along with any aggregation, transformation or computations, exclusions, exceptions applied		

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	including electronic record keeping procedure.		
	(2) Every service provider shall maintain complete and accurate records of raw or primary and processed data relating to the compliance of benchmark of each QoS parameters specified in regulations 4, regulation 6, regulation 7, regulation 9 and regulation 10, as applicable, in electronic form in such manner, period and format as may be directed by the Authority, from time to time.		
	(3) The Authority may, from time to time, either by order or by direction, specify record keeping procedures and formats, including guidelines on measurement methodology, deployment of test probes with related infrastructure and publishing the performance of the service provider on its website for various QoS parameters specified in these regulations, to be followed by the service providers.		
	(4) Every service provider shall preserve the records, as specified in sub-regulation (2), for at least one year after reporting the performance to the Authority and in case of disputes, all the records under dispute shall be maintained upto six months beyond the resolution of the dispute, or one year after reporting the performance to the Authority, whichever is later.		
13	13. Reporting. — (1)Every service provider shall create or upgrade their system within six months of notification of these regulations for collection of primary data, its storage, processing, performance report generation and their online submission to the Authority, in respect of each QoS parameters		

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	specified under regulation 4, regulation 6, regulation 7, regulation 9 and regulation 10 in such manner and format, at such intervals and within such time limit as may be specified by the Authority, from time to time, by an order or direction.		
	(2) Every service provider shall establish a system for live monitoring of network availability and report to the Authority in such manner, format and frequency as may be specified by the Authority by an order or direction.		
	(3) The benchmark of each QoS parameters specified in sub-regulation (1) shall be measured, reported, and complied at license or authorised Service Area level, as may be specified by the Authority, from time to time, by an order or direction: <i>Provided that</i> the Authority may, from time to time, by an order or direction, specify certain QoS parameters to be measured and reported to the Authority for specific States or Union Territories or districts for a specific purpose and period.		
14	14. Audit.- (1) The Authority may, from time to time, through audit conducted either by its own officers or employees or through an agency appointed by it, verify the performance against the Quality of Service parameters, specified in regulation 4, regulation 6, regulation 7, regulation 9 and regulation 10, as reported to the Authority under regulation 13 by the service provider.		
15	15. Publication.— (1) The Authority may publish, in such manner and in such format, as may be decided by the Authority from time to time—		

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	(a) the compliance reports of benchmarks of each QoS parameter reported to it by the service providers under regulation 13; (b) the results of the customer satisfaction surveys undertaken by the Authority under regulation 11; (c) the results of drive tests undertaken by the Authority under sub-regulation (3) of regulation 7; (d) the findings of audit undertaken by the Authority under regulation 14; (e) Service wise Quality of Experience Score (QoES) of service providers based on various parameters of network performance, consumer service, and consumer perception collected through multiple sources; through its website or through press releases or through advertisements in the print or electronic media, for the information to the public.	<u>Publishing of Quality of Experience Score (QoES)-</u> a) COAI recommends that this clause be deleted and assessment of QoE be left to the discretion of each service provider. b) If the Authority intends to introduce and publish a service-wise QoES framework, we respectfully submit that the detailed methodology, data sources, calculation approach, governance mechanism and disclosure format should first be developed through a comprehensive consultation process with all stakeholders.	<u>Publishing of Quality of Experience Score (QoES)-</u> a) We submit that introduction and publication of a Quality of Experience Score (QoES) is a significant new obligation involving a composite metric based on network performance, customer service and consumer-perception data collected through multiple sources. However, the draft does not define the parameters, data sources, weightages, normalization, sampling, and statistical confidence for the QoES. Publishing a score based on an undefined methodology, which mixes objective QoS data with subjective perception, risks misleading consumers and causing disproportionate reputational harm. Before any publication, TSPs must have the right to access the underlying data, contest attribution, and secure corrections. b) A published comparative score can have significant reputational and competitive market impact particularly in a market with intense subscriber-acquisition competition. c) Publishing such a score without a transparent and validated methodology, including an opportunity for service providers to verify or contest the underlying data, risks misleading

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			consumers and unfairly disadvantaging operators based on unverified or subjective inputs. d) TSPs are best placed to assess the Quality of Experience (QoE) of their subscribers. In a highly competitive market, TSPs have strong commercial incentives to ensure superior network performance and customer experience, and they already undertake comprehensive, real-time monitoring and analysis for this purpose. Accordingly, there is no demonstrable need for regulatory intervention in an area that is effectively managed by market forces and competitive dynamics. e) We respectfully submit that the proposed Service-wise Quality of Experience Score (QoES) may not be an appropriate measure for assessing customer experience, as it seeks to consolidate multiple dimensions of performance into a single aggregated score. f) Firstly, KPIs related to network performance, service quality, and customer service provide a far more transparent and actionable view of the actual customer experience. Aggregating multiple parameters into a single score may mask deficiencies in specific areas, as poor performance in one parameter could be offset by better performance in another, thereby diluting the visibility of issues that require corrective action. Regulatory oversight and consumer awareness are better served through the

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			monitoring of individual KPIs rather than a composite score. g) Further, the methodology for assigning relative weights to network performance, consumer service, and consumer perception parameters in a single QoES may be subjective and could lead to inconsistent interpretations of service quality across service providers. Any such composite score may oversimplify the complex and multidimensional nature of customer experience. h) Accordingly, the proposed QoES publication clause should be deleted. i) However, if the Authority intends to introduce and publish a service-wise QoES framework, we respectfully submit that the detailed methodology, data sources, calculation approach, governance mechanism and disclosure format should first be developed through a comprehensive consultation process with all stakeholders. Such consultation would ensure that the framework is objective, transparent, auditable, technically robust and reflective of actual consumer experience, while avoiding unintended consequences arising from subjective assessments or inconsistent interpretation of data.
	(2) Every service provider shall publish, for the information of the consumers, its performance with respect to the benchmark of QoS parameters specified in regulation 4, regulation 6, regulation 7, regulation 9 and regulation 10, as applicable, in such manner and format, as may be directed		

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	by the Authority from time to time.		
	(3) Every service provider providing access service (wireless) shall publish on its website the service wise geospatial coverage maps in such a manner and format, as broadly specified under Schedule III and as may be directed by the Authority from time to time, for the geographical areas where wireless voice or wireless broadband service is available for subscription by consumers .	a) The parameter "Accuracy of service-wise geospatial coverage map published on service provider's website" should not be prescribed as a Quality of Service (QoS) parameter and should be removed from Regulation 6(1). b) In the alternative, if TRAI considers publication and validation of coverage maps necessary for consumer information and transparency purposes, the same may be retained only as a standalone compliance obligation without any QoS benchmark, compliance assessment, or financial disincentive linked to network performance.	a) Pls refer our comments given above to the Parameter related to Coverage Map under Regulation 6 as well as comments given below against the Schedule III.
	SECTION VIII CONSEQUENCES FOR FAILURE TO COMPLY WITH THE REGULATIONS		
16	16. Consequences for the failure of service providers to meet the benchmark of Quality of Service parameters.- (1) If a service provider fails to meet the benchmark of QoS parameters specified under sub-regulation (1) of regulation 4 or sub-regulation (1) of regulation 6 or sub-regulation (1) of regulation 9 or sub-regulation (1) of regulation 10, it shall, without prejudice to the terms and conditions of its license, or the Act or rules or regulations or orders made, or directions issued, thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees one lakh per benchmark per compliance report for the first contravention as the Authority may, by order, direct:		
	<i>Provided that</i> if the service provider fails to meet the		

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	benchmark of the same parameter consecutively in two or more subsequent months or quarters, as applicable, he shall be liable to pay, by way of financial disincentives, an amount not exceeding rupees two lakhs for the second consecutive contravention and not exceeding rupees three lakhs for each consecutive contravention occurring thereafter:		
	(2) If the compliance report furnished by the service provider under regulation 13 is found to be false, it shall, without prejudice to the terms and conditions of its license or authorization, or the Act or rules or regulations or orders made, or, directions issued thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees two lakhs per benchmark per compliance report, for which such false report has been furnished, for the first contravention as the Authority may, by order, direct: Provided that if the compliance report furnished by the service provider under regulation 13 is found to be false for the same parameter consecutively in two or more subsequent months or quarters, as applicable, the service provider shall be liable to pay, by way of financial disincentives, an amount not exceeding rupees five lakhs for the second consecutive false reporting and not exceeding rupees ten lakhs for each consecutive false reporting occurring thereafter.		
	(3) No order for payment of any amount by way of financial disincentive shall be made by the Authority unless the service provider has been given a reasonable opportunity of representing against the contravention of the regulation		

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	observed by the Authority- (4) — The amount payable by way of financial disincentive under these regulations shall be remitted to such head of account as may be specified by the Authority. 16A. Consequences for the failure of service providers to submit correct compliance reports. - (1) If the compliance report furnished by the service provider under regulation 13 is found to be false, it shall, without prejudice to the terms and conditions of its license or authorization, or the Act or rules or regulations or orders made, or, directions issued thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees two lakhs per benchmark per compliance report, for which such false report has been furnished, for the first contravention as the Authority may, by order, direct: <i>Provided that if the compliance report furnished by the service provider under Regulation 13 is found to be false for the same parameter consecutively in two or more months or quarters, as applicable, the service provider shall be liable to pay, by way of financial disincentives, an amount not exceeding rupees five lakhs for the second consecutive false reporting and not exceeding rupees ten lakhs for each consecutive false reporting occurring thereafter.</i> Explanation: If, upon examination of the information in the compliance report or in any other report pertaining to the performance of QoS parameters furnished by the service provider, the Authority finds that there is a mismatch in the data or value of any	<u>Regulation 16 A-</u> a) We submit that the existing provision relating to actual false reporting should be retained and the proposed 1% mismatch criterion should be deleted. <u>Regulation 16 B-</u> a) The financial disincentives should be proportionate, targeted and reserved for substantive non-compliance materially affecting consumers, not procedural or documentation lapses. b) Therefore, COAI recommends that Regulation 16 A and 16B be deleted in its entirety.	<u>Regulation 16 A-</u> a) The new Regulation 16A substantially re-enacts the existing false-reporting disincentive framework but adds an Explanation deeming a mismatch of more than 1% between reported and Authority-verified data as 'false reporting'. b) Such mismatch may arise due to bona fide measurement variations, rounding, aggregation, processing of large volumes of network data or methodological differences, and may not necessarily amount to false reporting. c) Therefore, automatically treating a variance exceeding 1% as false reporting may result in disproportionate financial disincentives. Hence, the existing provision relating to actual false reporting should be retained and the proposed 1% mismatch criterion should be deleted. d) Further, where required, the Authority may issue a notice of intimation or clarification to the TSP, providing an opportunity to explain, address and rectify such discrepancies within an appropriate timeframe. e) However, we reiterate that financial disincentives should not be imposed. <u>Regulation 16 B-</u> a) This is a very significant expansion of the Authority's punitive jurisdiction and runs counter to the principle that regulatory intervention. b) The proposed Regulation is a very broadly

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	parameter reported by the service provider and the performance calculated by the Authority from value or the data given by the service provider in its report or observed during the audit, to the extent that absolute value of difference exceeds 1% of the prescribed benchmark, then such events shall also be considered as false reporting. 16B. Consequences for the failure of service providers to comply with any other provisions of the regulations.- (1) If a service provider fails to comply with any of the provisions of the regulations excluding provision mentioned in sub-regulation (1) of regulation (7), it shall, without prejudice to the terms and conditions of its license, or the Act or rules or regulations or orders made, or directions issued, thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees five lakh per instance of such non-compliance as the Authority may, by order, direct: <i>Provided that</i> if the service provider fails to comply the same provision of the regulations consecutively in two or more subsequent months or quarters, as applicable, he shall be liable to pay, by way of financial disincentives, an amount not exceeding rupees eight lakhs for the second consecutive contravention and not exceeding rupees ten lakhs for each consecutive contravention occurring thereafter: <i>Provided that</i> this regulation shall not be applicable if any non-compliance attracts the provision of regulation 16 or regulation 16A or regulation 17 or regulation 18.		worded provision. It provides that failure to comply with ANY provision of the regulations (other than Regulation 7(1)) attracts a financial disincentive of up to Rs. 5 lakh per instance, escalating to Rs. 8 lakh and Rs. 10 lakh for consecutive contraventions. c) This sweeping catch-all extends financial disincentives to purely administrative, procedural or record-keeping lapses (e.g. record-keeping under Regulation 12, system upgrades under Regulation 13, drive-test facilitation under Regulation 7) that need not involve any consumer harm or QoS shortfall. d) Hence, this Regulation should be deleted. e) Further, any residual or general non-compliance provision, if retained, should be limited to material and repeated violations after due notice and opportunity to remedy, thereby ensuring a balanced approach between regulatory accountability, proportionality and ease of doing business.
17	17. Consequences for failure of the service providers to submit compliance reports.-(1) If a service provider contravenes the provisions of	<u>Financial disincentives on reporting-</u> a) Earlier, the financial disincentive of ₹5,000 per report per day was subject to an overall	<u>Financial disincentives on reporting-</u> a) We submit that the delay in submission of a compliance report is essentially a reporting or

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	regulation 13, it shall, without prejudice to the terms and conditions of its license or authorization, or the provisions of the Act or rules or regulations or orders made, or, directions issued, thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees five thousand per report for every day during which the default continues, subject to the maximum amount of rupees ten lakhs, as the Authority may, by order, direct:	maximum cap of ₹10 lakh. Under the proposed framework, where a report remains unsubmitted beyond three months, a financial disincentive of up to ₹10 lakh per report would become applicable. This will materially increase the financial exposure for delayed submission of compliance reports. b) We reiterate our position that the Financial Disincentives should be completely removed and if still required then, we submit that the existing Regulation be continued.	procedural default, and the financial consequences attached to such delay should remain reasonable and proportionate. b) Moreover, the delay in submission may arise due to collection and processing of large volumes of primary data from multiple network elements, validation and reconciliation of data, identification and correction of mismatches, system or technical issues, and coordination across different teams and LSAs. c) Additional time may also be required to ensure that the information submitted to the Authority is complete and accurate. d) Hence, it is submitted that the existing provision of a reasonable overall cap on the cumulative financial disincentive should be retained to ensure that the penalty remains proportionate to the nature of the default.

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	Provided that no order for payment of any amount by way of financial disincentive shall be made by the Authority unless the service provider has been given a reasonable opportunity of representing against the contravention of the regulation observed by the Authority. Provided that if service provider fails to submit the compliance report within a period of three (3) months from due date then be liable to pay an amount, by way of financial disincentive, not exceeding rupees ten lakhs per report. (2) The amount payable by way of financial disincentive under these regulations shall be remitted to such head of account as may be specified by the Authority. 17A. Common provisions for financial disincentives.- (1) No order for payment of any amount by way of financial disincentive, under regulation 16 or regulation 16A or regulation 16B or regulation 17, shall be made by the Authority unless the service provider has been given a reasonable opportunity of representing against the contravention of the regulation observed by the Authority. (2) The amount payable by way of financial disincentive under regulation 16 or regulation 16A or regulation 16B or regulation 17 shall be remitted to such head of account as may be specified by the Authority.	<u>Failure to pay financial disincentive-</u> a) We submit that this Regulation should be deleted.	

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18	18. Consequences for the failure of the service providers to pay financial disincentive within the stipulated time.-(1) If a service provider fails to make payment of financial disincentive under regulation 16 or regulation 16A or regulation 16B or regulation 17 within a period of twenty one days from the date of issue of order for payment of financial disincentive or as stipulated in the order for payment of financial disincentive, it shall be liable to pay interest at a rate which will be 2% above the one year Marginal Cost of Lending Rate (MCLR) of State Bank of India existing as on the beginning of the Financial Year (namely 1st April) in which last day of the stipulated period falls and such interest shall be compounded annually. Explanation: For the purposes of this regulation, a part of the month shall be reckoned as a full month for the purpose of calculation of interest and a month shall be reckoned as an English calendar month.	<u>Failure to pay financial disincentive-</u> b) We submit that this Regulation should be deleted.	<u>Failure to pay financial disincentive-</u> a) The concern regarding Regulation 18 is consequential to the substantive objections raised against Regulations 16A and 16B. b) We submit that COAI's objection is to the introduction of Regulation 16A & 16B itself (see remarks against Regulation 16A/16B above). c) Therefore, Regulation 16 A and 16 B should be deleted along with Regulation 18.
	SECTION IX MISCELLANEOUS		
19	19. Review. —(1) The Authority may, from time to time, review the regulations including the QoS parameters specified in regulation 4, regulation 6, regulation 7, regulation 9 and regulation 10. (2) The Authority may, on reference from any affected party for good and sufficient reasons, review and modify these regulations.		
20	20. Repeal and Saving. — (1) The Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009 (7 of 2009), the Standards of		

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	Quality of Service for Wireless Data Services Regulations, 2012 (26 of 2012) and the Quality of Service of Broadband Service Regulations 2006 (11 of 2006) and the directions issued thereunder, as listed in Schedule-II , are hereby repealed.		
	(2) Notwithstanding such repeal, relevant provisions of the said regulations and directions issued thereunder shall continue to be applicable for the purposes of compliance with provisions of these regulations up to 30 th September 2024.		
	(3) Notwithstanding such repeal, anything done, or any action taken under the said regulations shall be deemed to have been done or taken under the corresponding provisions of these regulations.		
21	21. Interpretation. — (1) In case of any doubt regarding interpretation of any of the provisions of these regulations, the clarification of the Authority shall be final and binding.		
22.	Other Points- (1) SINR threshold	<u>SINR threshold parameter-</u> a) We submit that the SINR threshold parameter for "Connections with Good Voice Quality" should be revised from ≥ 0 dB to ≥ -6 dB.	<u>SINR threshold parameter-</u> a) All wireless networks require overlapping coverage between cells to ensure coverage and handovers. In such areas, serving and neighbouring cell power levels converge and SINR can fall below 0 dB. b) In LTE networks, during handovers, SINR may remain below 0 dB without impacting voice quality or user experience. c) Under 3GPP Reporting Criteria, handovers are based on RSRP measurements and not on

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			SINR. Accordingly, negative SINR cannot be directly correlated with voice quality or seamless voice experience. d) At handover boundaries, SINR can be around – 3 dB and even lower where signals from neighbouring cells add up as interference. e) LTE networks are designed to maintain voice quality at low SINR. The eNodeB allocates robust Modulation and Coding Schemes using QPSK and high-redundancy Forward Error Correction, enabling recovery of VoLTE bits. f) TTI Bundling improves uplink coverage for UEs with poor radio conditions, while UL CoMP converts otherwise interfering signals into useful signals. EVS and WB codecs, aggressive BLER target settings for QCI-1 and stringent delay target settings for VoLTE support voice experience. g) Accordingly, revising the benchmark to $\text{SINR} \geq -6$ dB is technically justified, consistent with field reality, and would have no adverse impact on Quality of Service or Quality of Experience observed by customers.