Bharti Airtel Ltd.
India & South Asia
Airtel Center, Plot No. 16,
Udyog Vihar, Phase - IV,
Gurugram - 122 015
Haryana, India

www.airtel.in
Call +91 124 4222222
Fax +91 124 4243252

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To,
Shri Tejpal Singh,
Advisor (QoS- I)
Telecom Regulatory Authority of India,
Mahanagar Door Sanchar Bhawan,
JawaharLal Nehru Marg,
New Delhi – 110 002.

Subject: Response to Consultation Paper on "Review of Quality-of-Service Standards for Access Services (Wireless and Wireline) and Broadband Services (Wireless and Wireline)"

Dear Sir,

This is in reference to TRAI's Consultation Paper on "Review of Quality-of-Service Standards for Access Services (Wireless and Wireline) and Broadband Services (Wireless and Wireline)" dated 18.08.2023.

In this regard, please find enclosed our response for your kind consideration.

Thanking You,

Yours' Sincerely,
For **Bharti Airtel Limited**

Rahul Vatts
Chief Regulatory Officer

Encl: a.a

Response to TRAI Consultation on *Review of Quality of Service (QoS) Standards for Access Services (Wireless and Wireline) and Broadband Services (Wireless and Wireline)*

Executive Summary

Airtel thanks the Authority for providing it with the opportunity to share its views on the consultation paper and draft regulation that proposes a significantly more stringent redefinition of the Quality of Service (QoS) parameters and benchmarks for wireless, wireline and broadband services at the granular levels (State/UT/District levels) and a revision of the reporting frequency from quarterly to monthly.

Telecom Service Providers (TSPs) have a natural interest in meeting the expectations of increasingly demanding users. **The telecom users today are highly heterogeneous[1] and drive several different usage patterns. This results in a steep increase in pressures on the network.** The range of network capabilities (2G, 3G, 4G, 5G) that are deployed in accordance with India's telecom licensing framework to serve the vast diversified needs of users – individual users, B2B, B2G users and e-government services – show that the evolution of networks in India have undergone significant investment and technological growth over the last 25 years, especially over the last decade.

It is Airtel's contention that in order to draw up a regulation that is considered and apposite, it is very important to have a long and thorough deliberation on all constraints and dynamic conditions in which a telecom network operates, be it technical or non-technical — and what to do about them for maintaining and achieving the desired levels of QoS to best subserve the experience felt by subscribers. Additionally, the decisions on QoS should be supported by well-established Regulatory Impact Analysis (RIA) principles that align with the telecommunications landscape's intrinsic nature.

While the TRAI has proposed to revise its (draft) regulations, making many parameters stringent and the periodicity of reporting shorter, **it is Airtel's view and submission that the Authority needs to consider critical aspects when framing its final QoS regulations and has listed them over the remaining course of this document.**

A. The breadth, depth and diversity of the Indian telecom network, which is a mix of technologies, has served diverse Indian subscribers in a most resilient and optimal manner.

- Indian TSPs have painstakingly built the world's second **largest telecom network** spanning[2] **~28 lakh BTS**, **~7,78,567 Towers**, **~6 lakh** villages, across towns and districts, over the last 25 years.
- Industry has made significant investments with one of the lowest ARPUs in the world.
- It needs to be appreciated that the Indian subscriber is very heterogenous, and behaviour and usage differ totally from subscriber to subscriber.
- Today, the Indian TSPs' CAPEX as a % of revenue is ~30% – one of the highest globally.
- The service the networks were able to relentlessly provide over the Covid-era (2020-2022) demonstrates the resilience and capability of Indian TSP networks — confidently serving as they did the entire socio-economy of 1.2 billion Indians online without disruption. It shows that Indian networks are fully equipped to provide the desired levels of telecom services.

Airtel believes that the draft regulation does not fully appreciate this scope, depth, complexity and versatility of Indian telecom networks.

[1] The telecom customer today uses telecom for variety of applications e.g., video streaming, e-sports, e-education, social-media, video calls, voice calls, instant messaging, government, and financial services among others. This leads to varied behavior on network driven by each use case and consumption pattern of a customer.

[2] DoT Dashboard, https://dot.gov.in/ , as seen on 29th November 2023, and industry estimates

B. The vast network in India is created based on the LSA-based licensing framework. TRAI's regulations therefore must also be consistent with this licensing regime.

- The Indian telecom market is divided into 22 licensed service areas (LSAs). These LSAs are categorised into Metro, A, B, and C categories which have been decided based upon the socio-economic conditions of these LSAs; ***and the entire network architecture of the industry, planned and built over the years, is based on this***.
- If the QoS starts being measured differently at state, city and district levels, it will be in contradiction to the present licensing regime, and lead to complexity and confusion.
- It is also Airtel's contention that TRAI's approach in this draft regulation[3] will be further in contradiction to past and present Rollout guidelines including as specified in the Notice Inviting Applications (NIAs), wherein the (minimum) rollout criteria have been given by the licensor.
- Airtel highlights here that the licensor in its wisdom chose "minimum" rollout conditions rather than "maximum" rollout conditions, since these would apply to commercial aspects of the TSP.

Any regulatory intervention inconsistent with India's licensing regime will risk causing complexities and implementation challenges.

C. The Quality of experience (thus perceived QoS) of a subscriber is not necessarily about the Telco network alone – there are many more external factors outside of TSP control that impact it.

- **An assumption that network traffic (and thus quality) is governed only by the TSPs is flawed**. Often, the situation is dependent upon the type of content and configuration settings of the User Equipment / handset, too. For example, in the case of a home broadband scenario, it could be any of the following: the home Wi-Fi performance, quality of house wiring, multiple devices using same connection in parallel, type of content being consumed, limitations of the device being used or the performance of the servers delivering content over the connection.

- There are many other external factors, too, outside of TSPs, such as **illegal repeaters, boosters and jammers** causing interference in the TSP network, **Right of Way (RoW) issues, municipal issues leading to the sealing of sites,** a very skewed and **stricter policy on EMF norms** (Indian norms being 1/10th of the globally accepted ICNIRP norms) that shrink the coverage area, operational **sites getting frequently sealed/shut down** in many states or in localities due to fear of EMF (even though government and stakeholders run awareness campaigns).

- In fact, the Authority, in its Technical Paper on call drops in Cellular networks dated 10.11.2015, acknowledged these extraneous challenges by noting that **36.9% of the cases are the result of irregular user behaviour such as mobile equipment failure, phones switched off after ringing, subscriber charging capacity exceeded during a call, etc**. Additionally, the Hon'ble SC in case of Call Drops Judgment indicated that external factors should be duly accounted for while framing QoS Regulations. [*Refer **Annexure -A** for relevant excerpts]*

- Providing services in areas of difficult terrain pose additional challenges **due to Geographical constraints, e.g.,** places like the North-East and Ladakh have rough landscapes, far from urban centres, and experience severe weather conditions; there are areas of **limited accessibility**

[3] Consultation Paper on Review of Quality-of-Service Standards for Access Services (Wireless and Wireline) and Broadband Services (Wireless and Wireline), TRAI, August 2023

which lack proper roads and essential utilities like electricity; and the l**ow population density areas** where telecom companies have a smaller sub base, leading to lower revenue /ARPU.

- Further, the TSPs are not just competing within the telecom industry but with adjacent competing forces as well, e.g., OTT based messaging and voice platforms, whose performance may be creating a perception about a TSP network.

The above factors lead to another important consideration that must be kept in mind else the entire presumption will be incorrectly applied, i.e., correlation may not always mean causality:

- QoS is a complex mix of multiple factors including coverage and capacity and both are different. The draft regulation seems to assume that both must be met fully and in parallel.

- Augmenting capacity is a matter of market conditions, technical knowledge, the level of investment and financial sustainability required. It is also driven by capacity utilisation of underlying networks which, in turn, **is impacted by peak, off-peak, seasonality, one-time events among other** factors.

- **Interposing one on the other can confuse the outcome,** i.e., ***a benchmark parameter alone may show a correlation between user experience and QoS parameters but it may not be a causation.*** Both are different. To illustrate, a subscriber may be experiencing a relatively poor download speed, which may show in the QoS parameter for that period – so it may indicate a correlation of experience. However, the reason for this may not be the network, rather the handset capability of the subscriber, which is incapable of supporting the network. It could even be that the CPE (e.g., router) has been kept too far away to give the desired experience.

- **In wireless networks, spectrum is a shared resource and hence will always have to balance the needs of the user, availability of the resource and the application/use case requirement**. It is important to highlight that the cost of spectrum constitutes about 60% of the capital employed by the wireless industry.

Disregarding these critical external variables that directly impact network deployment and performance and rather introducing increasingly stricter QoS norms will lead to misalignment between regulatory objective vis. a vis. ground reality.

Therefore, Airtel recommends that:

- **The Authority should thoroughly assess the current constraints and proactively initiate recommendations and measures to address these impediments before adopting any new QoS parameters.**

D. <u>Shorter duration of reporting that is excessively granular will only increase the compliance burden and may invite more short-term driven interventions.</u>

- As of now, on an annual basis, there are approximately 5308 compliance events required to be measured and reported under the current regulations. However, if the proposed changes are implemented, this number would soar to about 38280 marking a substantial seven (7x) fold increase. **The question arises whether merely ramping up reporting frequency and introducing more benchmarks can genuinely enhance Quality of Service**

(QoS) and improve the lives of customers, without directly addressing the challenges faced by the telecom industry?

- It may be noted that QoS is required to ascertain grade of service[4] but **over a period of time**. If the reporting period is kept too short, it may not meaningfully serve the purpose and, instead, could lead to authorities questioning the efforts of TSPs at short intervals.
- **Further, seeking the cell level parameters rather than the BTS levels will not only result in scrutinising at a significantly granular level, but will also fail to provide any useful insight below the BTS level.** Rather, this approach of cell level granularity can make network QoS look worse, again leading to the heightened likelihood of unnecessary interventions.
- **This shift in reporting frequency raises concerns about its compatibility with the principles of the Ease of Doing Business (EODB), a key focus of the Government.** A switch from quarterly reporting to monthly will significantly increase the reporting and cost burden for TSPs. The substantial surge in compliance instances seems contradictory to the government's goal of simplifying processes and reducing bureaucratic obstacles.

Considering the above facts, the proposal for monthly reporting should be dropped, as it does not align with the intended goals of promoting EoDB through simplified regulatory processes.

E. Statistically, monthly averaging is insufficient to make fair & logical sense of data point:

Telecom services are subject to various external factors and operational challenges that can lead to short-term fluctuations. Monthly averaging will inadvertently magnify these transient fluctuations, offering a distorted view of QoS. Hence, we do not believe that monthly averaging will serve any meaningful purpose for QoS measurement and analysis.

Instead, the present quarterly evaluation period for computing the average QoS parameters in the telecom sector is logically justified based on statistical principles. It should be persisted with. Here are some of the reasons why:

- Quarterly evaluations ensure sample size stability, providing a consistent and reliable basis for assessing service quality.
- They reduce the impact of short-term fluctuations, contributing to more robust and meaningful averages.
- Quarterly assessments help mitigate the influence of variability in monthly data, offering a more accurate representation of overall service performance. Seasonal patterns in demand or network usage are naturally accounted for in quarterly evaluations, providing a comprehensive understanding of service quality under different operational conditions.
- Quarterly assessments strike a balance between timely evaluations and resource efficiency, avoiding the unnecessary costs associated with more frequent evaluations.
- Quarterly averages support long-term trend analysis, facilitating strategic planning and decision-making in the telecommunications sector.

Overall, the quarterly averaging approach offers significant advantages to overcome inherent deficiencies of the monthly approach. The Quarterly averaging approach also aligns with statistical logic and principles, ensuring stability, accuracy, and efficiency in evaluating and improving service quality over time. Therefore, the present approach of averaging over a quarter should continue.

[4] Grade of service can be referred to as categories of quality levels of a service e.g., Good, Average, Below average.

F. TRAI's perception on service degradation by TSPs is misconceived:

- Airtel disagrees with TRAI's belief in the degradation of TSPs' services. In fact, it is only in the last year, which witnessed one of world's fastest 5G rollout, that some issues re QoS were felt.
- It is naturally expected that in such a fast paced and intense rollout, some challenges will be felt by network and consumer alike.

Therefore, in Airtel's view, there is no justification for either stricter QoS benchmarks for TSPs nor the application of any tech-specific interventions (e.g., 4G or 5G specific benchmarks).

G. Globally there are no prescriptive QoS regulations.

- Internationally, regulators in many markets have either moved to light-touch regulation or deregulated the QoS, e.g., in the USA.
- In many jurisdictions, the trend has been to monitor QoS by using third party tests, e.g., France.
- The TRAI also has not cited any examples of countries where QoS parameters are monitored on a short periodicity (e.g., monthly) as a matter of compliance.

S. N.	Country	QoS approach: Prescriptive Or light touch Or deregulated	QoS measured by:
1.	USA	No specific regulation on QoS	3rd party/mobile apps/study
2.	UK	No specific regulation on QoS	3rd party/ apps/market study
3.	France	No specific regulation on QoS however ARCEP has suggested a set of best practices for QoS measurement along-with required methodology	3rd party /annual study/ crowdsourcing (app)
4.	Australia	No specific regulation on QoS	study / comms. alliance
5.	Italy	No specific regulation on QoS	3rd party / market study
Source: TRAI consultation on QoS (2023) [5] *and Bharti Airtel regulatory analysis*			

- As can be noted from the above table, even in the advanced markets, the regulators do not define any prescriptive regulations for QoS and, instead, themselves measure the performance of the network service via third party apps and annual studies, which are then published for the general public's information.

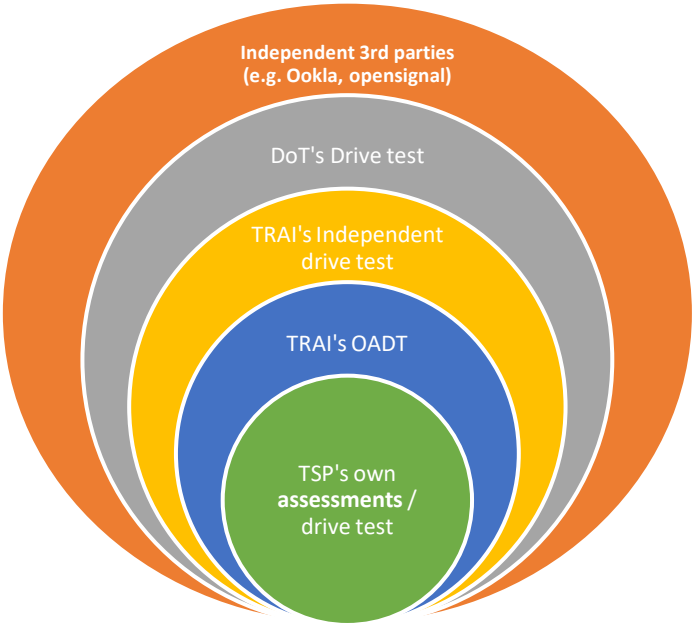
Therefore, Airtel recommends that:

- **In the short term, the Authority may consider moving towards a light touch regulatory framework for QoS, i.e., only limited parameters to be measured and reported quarterly.**
- **In the long-term, the Authority should deregulate the QoS parameters while maintaining the oversight through drive tests and/or (a mix of) drive tests and third-party surveys by independent agency.**

H. TRAI and DoT already undertake multiple drive tests to assess the QoS (network performance).

- The TSPs, the Authority and the licensor already perform multiple tests to measure network performance. Over and above these, there are independent surveys/ tests conducted by independent organisations as well (see *figure below*).

[5] Refer Annexure-II, Pg-122-141, extant CP of TRAI.



- The above-mentioned drive tests (by TRAI, DoT) cover the high, low and medium dense areas including highways, commercial complexes and residential areas, especially those where consumers have raised network complaints. Based on these drive tests, TRAI/DoT assess the performance of TSPs against the key network KPIs related to coverage and quality such as DCR, blocked call Rate, CSSR (call set-up success rate), HOSR (handover success rate), UL/DL throughput, Latency, etc. to identify the problematic areas.

I. <u>The QoS by design approach is already in place – absolutely no need for any specific mandate</u>:

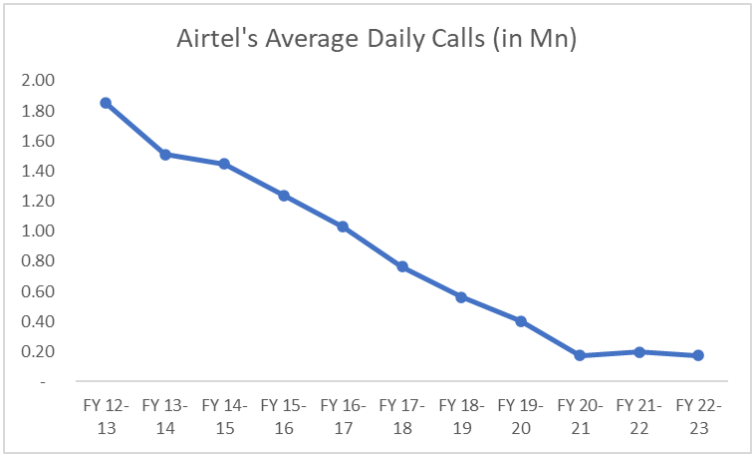
- The Indian TSPs have deployed the best globally standardised and harmonised equipment similar to that employed by global Telcos and more than capable of competing with them. **Not only that, but it is also an integral part of their network planning and execution (from planning a site to deploying it to starting to deliver the service to the end-user) – driven from a design mindset to best subserve the customer**.

In Airtel's view, the approach of quality by design is already being followed by the Indian TSPs, and hence there is no need to prescribe any specific framework in this regard.

J. <u>TSPs have implemented substantial automation modes to address customer care issues – the QoS parameters on traditional call-centres should be removed or eased out.</u>

- To support customers, the TSPs have leveraged technological advancement and digitalisation with new and effective ways for the customer to reach out to the TSPs which include self-care channels viz. mobile Apps, chat-bots, WhatsApp, etc.
- Airtel has built an AI-based solution, which will improve the overall customer experience for all in-bound calls to its contact centre. Airtel has been investing in the digitisation of its operations using automation and machine learning practices in an effort to improve customer experience through faster resolution of complaints and queries along with bringing in efficiency in the network. Airtel's state-of-art in-house tool '*Airtel Self Optimisation Network (A-SON)*' has helped to predict degradation and proactively make changes in the network to enhance customer experience greatly.

- In this backdrop, it is important to highlight that the volume of calls to the traditional call-centres have been dropping significantly over the last decade, as can be seen from the chart that follows.



- These newer modes, implemented over a period of time, are far more effective and time saving in terms of raising issues/queries/complaints with the TSP. Hence, these modes should be encouraged, and less time and effort should be wasted on maintaining compliance with the accessibility of traditional methods like call centres.

In view of the above, all such legacy parameters should be removed from the QoS regulation.

Conclusion:

The Indian telecom sector has witnessed significant maturity, a fact that the TRAI itself has acknowledged, marking a milestone where tariff and IUC functions are already under forbearance/ market driven. This strategic approach aligns with international best practices, reflecting a market-driven approach. Given the sector's maturity and its evolving dynamics, it becomes pertinent for TRAI to consider adopting a similar approach to the Quality of Service regulation. **Deregulating the quality-of-service parameters could empower market forces and drive efficiency, innovation, investment and service standards to further improvements**. This shift would align with the sector's evolution, emphasising a balanced regulatory framework that fosters competition while ensuring customer satisfaction.

Airtel would like to state here that deregulation does not translate to no regulatory oversight. Rather, the Regulator has at its disposal (alternate) tools like market surveys, drive tests to constantly monitor the network performances of the TSPs and seek annual reporting on specific key parameters relevant for assessing the QoS. The drive tests / reports/ market surveys can be made an annual feature (e.g., in France, the regulator ARCEP does the annual study of QoS).

In other words, it is Airtel's recommendation that Quality of Service (QoS) should be driven by market forces rather than by regulatory interventions. It is Airtel's hope that the Authority will consider the above observations while reviewing the QoS standards for Wireless, Wireline & Broadband.

Response to TRAI Consultation on *Review of Quality of Service (QoS) Standards for Access Services (Wireless and Wireline) and Broadband Services (Wireless and Wireline)*

In Summary:

- *The proposed QoS regulation should be consistent with and aligned to India's LSA based licensing regime and not mandate reporting at state, UT, city, district level.*
- *The reporting of QoS parameters should not be mandated on a monthly basis*
- *There are many external factors outside of TSPs' control that impact QoS. Therefore, the Authority should thoroughly assess those constraints and proactively initiate measures to address these impediments before adopting any new QoS parameters.*
- ***In the short term,** the Authority may consider moving towards a light touch regulatory framework for QoS, i.e., only limited parameters to be measured and reported on a quarterly basis.*
- ***In the long-term,** the Authority should deregulate the QoS parameters while maintaining the oversight through drive tests and/or (a mix of) drive tests and third-party surveys.*
- *There should be no application, use cases-based measurement and reporting of QoS and QoE especially in 4G and 5G networks. The QoS framework should be technology neutral.*
- *The uRLLC and mMTC use cases are still emerging so no new QoS parameters should be defined. These should be kept outside of the purview of the present QoS review exercise.*
- *Airtel does not believe that there will likely be an adverse impact on existing consumer voice (VoLTE/VoNR) and data services (eMBB) upon rollout of enterprise use cases of uRLLC or mMTC. The network infrastructure is deployed in a way to accommodate these different services and their unique requirements simultaneously, allowing for a seamless coexistence of services.*
- *The telecom network is created as a whole, and not in isolation (at access, core and transport levels) i.e., these elements are not designed in a mutually exclusive manner. There is no need to create any QoS parameters and corresponding benchmarks specifically for the NLD and ILD segments of the network.*
- *The QoS by Design approach is already in place and there is no need for any specific prescription in this regard.*
- *No specific (regulatory) measure is required to accelerate the adoption of AI for management of the QoE to reduce consumer complaints protectively and to enable near real time reporting of the QoS performance to consumers.*

A clause-wise response to the draft regulations under **Chapter-III** of the Consultation is provided in Annexure - **B**.

Airtel's detailed response to the questions posed in **Chapter-VI** of the Consultation are provided in the following sections.

Question 1: What are the possible reasons for increasing gaps between the QoS reported by the service providers and the QoS experienced by the consumers? How this gap can be bridged?

Airtel Response:

Please refer to the Preamble.

At the outset, Airtel would like to state that it is not in agreement with the notion that there are increasing gaps between the QoS experienced by customers and the network QoS reported by TSPs. The TRAI has not provided any detailed assessment (any correlation or causation) or regulatory impact analysis for this assertion, except for relying on the limited data on customer complaints.

TSPs provide last mile connectivity to the consumer. Having said that, the overall quality of service as perceived by the consumer is influenced by multiple factors, i.e., the type of device, connectivity within the TSP network, connectivity from the TSP network to the application provider location and application server. Because of this complexity and because of the multi-provider environment, interconnection points, cross-domain technologies with multiple ownership domains, interdependency and diverse stakeholders, TSPs cannot measure the individual subscriber level QoS and limited to aggregated QoS at site level.

As per ITU-T P.10, QoE influencing factors include the type and characteristics of the application or service, context of use, the user's expectations with respect to the application or service and their fulfilment, the user's cultural background, socioeconomic issues, psychological profiles, emotional state of the user, and other factors whose numbers will likely expand on further research.

QoS can be computed based on subjective metrics, such as customer satisfaction surveys and user feedback. Realizing the complexity involved in measuring the end-to-end experience of any service, many countries are measuring the experience through third party reports which are generated based on data feeds coming from popular crowd source applications and represent a better insight of the application experience.

Having said that, in India, experience can be different for different users, particularly due to multi domain delivery and ownership since TSPs control only a part of the service delivery chain. Airtel recommends making use of third-party benchmarking reports that are based on crowd sourcing feeds from the device which can represent end to end quality perceived.

In the end, as detailed in the Preamble, Airtel re-submits that the proposed QoS regulation should be significantly deregulated, and reporting aligned to India's LSA based licensing regime. The averaging over a quarter must continue and avoid increasing compliance burden by shortening the reporting period to monthly. The regulation needs to factor in many external drivers (like RoW issues, handset quality, stringent EMF norms) outside of TSPs' control but which impact the network QoS and QoE. We urge the authority to address these impediments before prescribing any new QoS parameters. Further, all the parameters should be technology agnostic. TSPs have created multiple online modes to handle consumer complaints so there is no need to continue intervention any further.

Apropos, we recommend that in the short term, the Authority should consider moving towards a light touch regulatory framework for QoS and deregulate the QoS parameters in long term, while keeping the oversight through annual / periodic drive tests and/or (a mix of) drive tests and third-party surveys.

Question 2: To support emerging applications and use cases please suggest a transparent framework for measurement and reporting of QoS and QoE especially in 4G and 5G networks considering relevant standards and global best practices.

Airtel Response:

At the outset, Airtel would like to assert that it believes that any approach to QoS should be technology neutral.

Secondly, use-cases and applications are emerging areas that change extremely fast and impact the consumer experience, something which is also driven by the consumer's own usage behaviour. Further, the QoE felt by the consumer in question about an application or use-case is determined by several factors, most of which are outside the TSP's control – as elaborated in the Preamble and response to Q1.

Emerging Applications (e.g., use cases of e-MBB applications) are still at an early stage of development. If they are defined in 3GPP to be scheduled in a separate QoS class, the OEMs would follow that as part of their equipment manufacturing process and TSPs would use those in their network deployment.

Therefore, there should be no prescription on these aspects (application, use cases) for measurement and reporting of QoS and QoE, especially as far as the 4G and 5G networks are concerned.

Further, use cases for different sectors like healthcare, IoT, Autonomous vehicles are sector specific and many of them are being trialed and deployed in a small captive environment. Being independent sectoral use cases, no specific QoS parameters for TSPs should be prescribed in such cases either.

Apropos its detailed Preamble, Airtel submits that the draft QoS regulation be significantly deregulated, its reporting be aligned to India's LSA based licensing regime and reporting be continued on the quarterly average than changing to monthly basis. The proposed regulation must factor in multiple external factors like RoW issues, handset quality; stringent EMF norms that are all outside of TSPs' control but directly impact the network QoS and QoE. These challenges should be resolved before prescribing any new QoS parameters or making them stringent. Further, all the QoS parameters should be technology agnostic. Since 5G use cases are still emerging, it should be kept outside the purview of the present review. With advanced multiple online modes implemented by TSPs to handle consumer complaints, there is no need to continue intervention any further.

Considering this, we recommend that in the short term, the Authority should move towards a light touch regulatory framework for QoS and deregulate the QoS parameters in long term, while keeping the oversight through annual / periodic drive tests and/or (a mix of) drive tests and third-party surveys.

Question 3: What should be the QoS parameters and corresponding benchmarks for ultra-reliable low latency communication (uRLLC), and massive machine type communications (mMTC)?

Airtel Response:

The uRLLC & mMTC services are yet to be introduced globally due to limited support in the device and infra ecosystem. While 3GPP has defined a separate QoS class for these services, it is expected that QoS parameters (such as drop rate, session set up success and packet error rate) are still under development

or commercial deployment. Once duly incorporated in the wider telecom ecosystem, these parameters may be available for QoS monitoring of these services.

Airtel believes that that situation is still quite some distance away and, therefore, no such new QoS parameters should be defined at present and that they should be kept outside of the purview of the present QoS review exercise.

Airtel re-iterates that 5G use cases are still emerging, it should not be formed part of the current review. Further, all the QoS parameters should be technology agnostic.

Airtel also recommends that the proposed QoS regulation should be significantly deregulated, its reporting be aligned to India's LSA based licensing regime. Further, to avoid compliance burden on TSPs, the reporting of QoS parameters should continue on quarterly average basis instead of proposed monthly average. Airtel also highlights there are many external drivers (like RoW issues, handset quality, stringent EMF norms) outside of TSPs' control but which have direct bearing on network QoS and QoE. These impediments should be considered and addressed before prescribing any new QoS parameters. The Indian TSPs already follow a QoS by Design approach in a very integrated manner across access, core, and transport levels. TSPs provide multiple advanced online modes to handle consumer complaints hence there is no need to continue intervention any further.

It is therefore recommended that in the short term, the Authority should consider moving towards a light touch regulatory framework for QoS, and, in long term deregulate the QoS parameters while keeping oversight via annual / periodic drive tests and/or (a mix of) drive tests and third-party surveys.

Question 4: Will there be any likely adverse impact on existing consumer voice (VoLTE/VoNR) and data services (eMBB) upon rollout of enterprise use cases of uRLLC or mMTC?

&

Question 5: If answer to Question-4 is 'No' then please explain how and if the answer is 'Yes' please suggest measures to ensure minimum guaranteed QoS for voice and data service for consumers.

Airtel Response:

Please refer to the response to Q3. These are the emerging use cases and they are at an early stage of development and deployment.

The rollout of URLLC or mMTC services are intended to expand the capabilities of the 5G network to support diverse use cases without disrupting existing eMBB and voice services. The network infrastructure is deployed in a way that it can accommodate these different services and their unique requirements simultaneously, allowing for a seamless coexistence of services.

3GPP standards specify the QoS mechanisms required in the network to support different service requirements. There are many inbuilt techniques in 5G technology which will play a pivotal role in ensuring that uRLLC and eMBB services can harmoniously coexist within the framework of 5G networks. This network provides the requisite quality of service for each service type while maintaining a balanced performance that accommodates a diverse range of applications and use cases.

In view of the above and given that TSPs have a limited view of these services till they are rolled-out on a large scale, they could be kept out of the purview of the regulatory QoS framework.

Airtel re-submits in line with its Preamble, that the Authority considers moving towards deregulation. The parameters of QoS regulations should be technology neutral. Since 5G use cases are still emerging, it should be kept outside the purview of the present QoS review. The proposed regulation needs to factor in many external drivers (like RoW issues, handset quality, stringent EMF norms) which are outside of TSPs' control but impact the network QoS and QoE directly. These impediments should be addressed before prescribing any new QoS parameters or making them stringent. The QoS parameters under the proposed regulations should continue to be reported on a quarterly average basis and not on a monthly basis. The regulations must align to India's LSA based licensing regime. The Indian TSPs already follow a QoS by Design approach in a very integrated manner across access, core and transport levels.

TSPs have created multiple online modes of to handle consumer complaints hence there is no need to continue intervention on these parameters any further.

Airtel recommends that the Authority should consider moving towards a light touch regulatory framework for QoS in the short-term and deregulate the QoS parameters in long term. It may retain oversight through annual/periodic drive tests and/or (a mix of) drive tests & third-party surveys.

Question 6: To achieve QoS and QoE end-to-end, it is essential that all network segments deliver the minimum level of QoS required by respective service, application or use case. In this context, please suggest QoS parameters and corresponding benchmarks for National Long Distance (NLD) and International Long Distance (ILD) segments of the network with supporting global benchmarks.

Airtel Response:

Firstly, the QoS (and QoE) is already a reflection of last mile delivery, and Telecom networks are designed to cater to end-to-end services. Thus, from a consumer service level, the network is created as a whole, and not in isolation at access, core and transport levels, i.e., these elements are not designed in a mutually exclusive manner. It is natural that a challenge that at any end within the network impacts consumer experience will be reflected in the overall consumer QoS.

Secondly, there does not seem to be any global precedent for the Quality of Service (QoS) regulation in carrier services (NLD and ILD). The Carrier services operate under agreed-upon Service Level Agreements (SLAs). The competitive nature of the carrier services market ensures adherence to these SLAs, eliminating the necessity for additional regulations on the NLD/ILD segments.

In view of the above, Airtel does not see the need to create any QoS parameters and corresponding benchmarks specifically for the NLD and ILD segments of the network.

In the end, and in line with the Preamble, Airtel re-emphasies that the proposed QoS regulation needs to be significantly deregulated, its reporting aligned to India's LSA based licensing regime. The Indian TSPs already follow a QoS by Design approach in a very integrated manner across access, core and transport levels of networks hence no need to create any siloed approach here. Further, the averaging over a quarter must continue and avoid increasing compliance burden by shortening the reporting period to monthly level. The regulation should factor in external drivers like RoW issues, handset quality, stringent EMF norms which are outside of TSPs' control but impact the network QoS and QoE directly.

These impediments should be addressed before prescribing any new QoS parameters or making them stringent. Since 5G use cases are still emerging, it should be kept outside the purview of the present QoS review. Accordingly, in the short term, the Authority should consider moving towards a light touch regulatory framework for QoS and deregulate the QoS parameters in long term, while keeping the oversight through annual / periodic drive tests and/or (a mix of) drive tests and third-party surveys.

Question 7: What should be the approach for adoption of 'QoS by Design' framework by the service providers to ensure that new generation wireless networks are planned, implemented and maintained to deliver required level of measurable QoS and QoE?

Airtel Response:

Please refer to the Preamble.

Airtel is of the view that the QoS by Design approach is already in place and there is no need for any specific prescription in this regard. The Indian TSPs have deployed the best globally standardised and harmonised equipment that can compete with global Telcos. Hence, the approach of quality by design is already being followed by Indian TSPs. It is an integral part of network planning and execution (from planning a site to deploying it to starting to deliver the service to end-user) – driven from a design mindset to best subserve the customer.

Hence, there is no need to prescribe any specific regulatory approach towards QoS by design.

In the end, Airtel again submits that proposed QoS regulation should be significantly deregulated, its reporting aligned to India's LSA based licensing regime, the averaging be continued over a quarter. The Indian TSPs already follow a QoS by Design approach in a very integrated manner across access, core and transport levels of networks hence no such intervention is needed. The regulation should first account for factors outside of TSPs' control (like RoW issues, handset quality, stringent EMF norms) that directly impact the network QoS and QoE. The compliance burden should not be increased by shortening the reporting period to monthly level. Since 5G use cases are still emerging, it should be kept outside the purview of the present QoS review. TSPs already deploy multiple online modes to handle consumer complaints hence there is no need to continue intervention any further.

Apropos, we recommend that in the short term, the Authority should consider moving towards a light touch regulatory framework for QoS and deregulate the QoS parameters in long term, while keeping the oversight through annual / periodic drive tests and/or (a mix of) drive tests and third-party surveys.

Question 8: What measures are required to accelerate the adoption of AI for management of QoE to reduce consumer complaints protectively and to enable near real time reporting of QoS performance to consumers?

Airtel Response:

While Artificial intelligence (AI) is emerging as a useful tool across various sectors of economies, including Telecommunications, its deployment in various facets of services should be left to market forces. This flexibility is also required given that AI's applicability in various use cases will be driven **by how the wider IT and computing capabilities of organisations develop, and in which use cases they can be prioritized to be applied.**

Any specific regulatory intervention/ mandate / regulation around its deployment in telecom networks or services will constrain not only its development but its adoption as well.

Airtel has designed and developed an AI-ML-driven, closed-loop, self-healing platform called Airtel SON (A-SON) to detect, analyse and correct network anomalies/degradations with high sensitivity. The system also does pre-post analysis and restores network settings to normal values. With future ready architecture, the platform is currently live across PAN India and is being used on critical business use-cases.

Therefore, no specific (regulatory) measure is required to accelerate the adoption of AI for the management of QoE to reduce consumer complaints protectively and to enable near real time reporting of QoS performance to consumers.

In line with its submission in the Preamble, Airtel re-submits that the proposed QoS regulation needs to be significantly deregulated and reporting be aligned to India's LSA based licensing regime. The averaging over a quarter must continue and the compliance burden should not be increased by shortening the reporting period to monthly. The regulation should factor in external drivers like RoW issues, handset quality, stringent EMF norms - outside of TSPs' control but impact the network QoS and QoE directly. These should be addressed before prescribing any new QoS parameters or making them stringent. Further, all the parameters should be technology agnostic. Since 5G use cases are still emerging, it should be kept outside the purview of the present QoS review. The Indian TSPs already follow a QoS by Design approach in a very integrated manner across access, core and transport levels. TSPs have created multiple online modes of to handle consumer complaints hence there is no need to continue intervention any further.

Apropos, we recommend that in the short term, the Authority should consider moving towards a light touch regulatory framework for QoS and deregulate the QoS parameters in long term, while keeping the oversight through annual / periodic drive tests and/or (a mix of) drive tests and third-party surveys.

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Annexure-A

TRAI Technical Paper and SC Call Drops Judgment extract

The Authority in its Technical Paper on call drops in Cellular networks dated 10.11.2015, had itself acknowledged the existence of several extraneous challenges, some of which are reproduced below:

"…3. The EMF radiation norms for BTS in India, are 10 times more stringent than many developed countries like USA, Canada, Japan and Australia. This necessitates lowering of power levels of BTS which may result in shrinkage of the coverage, most importantly indoor coverage.

3.1. Due to the increase in users' demand for wireless cellular connectivity, and to accommodate more number of users, the cell size in mobile wireless cellular networks is getting reduced specially in urban areas.

3.2. … when a mobile user enters an area without adequate signal strength, or the signal has been interrupted, interfered with, or jammed.

3.5. …. At the receivers' end, calls may be dropped if a mobile phone loses battery power and abruptly stops transmitting.

3.8. Propagation factors on signal behavior such as reflections and multipath, diffraction and shadowing, building and vehicle penetration, propagation of signal over water, propagation of signal over vegetation (foliage loss), fading of the signal, interference could also lead to call failures.

3.9. Call could also drop due to irregular user behavior (mobile equipment failure, phones switched off after ringing, subscriber charging capacity exceeded during the call). Other causes can be due to abnormal network response (e.g., radio and signaling protocol error).

3.15. In some of the major towns, there are objections raised by resident welfare associations for installed mobile towers, because of mounting fears about radiation, transmitting from the towers and the perceived health hazards associated with the same. The protests in residential areas have resulted in towers being pulled down or in stalling installation of new towers affecting mobile service quality. Every tower pulled down also exerts additional loads in the neighbouring adjacent cells resulting in poor call quality. In fact less number of towers in an area will actually increase the power levels of the handsets, since the mobile handset has to 'shout' so that its signal reaches the BTS.

3.16. Also the users, due to weak signal strength in their building or premise, tend to install signal boosters to boost their received mobile signal strength. More often these users tend to purchase boosters that are not band specific to their service provider and boosts the complete GSM band (including all TSPs), resulting in interference of the signals…."

The SC Judgment excerpts:

The Honorable Supreme Court has made the following observations in its judgment dated 11.05.2016 on the Call Drop Regulation, which would be relevant for reviewing QoS parameters as well:

> *"…A Regulation framed by TRAI should be 'Reasonable,' i.e., framed with intelligent care and deliberation i.e., choice of a course which reason dictates and that the Regulation must be the result of that reason.* (Page 50 para 29)
>
> *That while public interest is important, it is not enough that the Regulation is in the interest of general public alone.* (Page 51-52 para 31) *That a balance must be achieved for orderly growth of telecom sector between protecting the interest of consumers as also of Service Providers.* (Page 46 para 24) *…".*

airtel

Annexure B

CHAPTER 3					
SECTION II - Quality of Service (QoS) Parameters for Access Service (WIRELINE)					
Regulation 3					
Sl. No.	**Chapter No.**	**Regulation No /Clause No.**	**Proposed provision in consultation paper**	**Suggested modification**	**Justification/ Global references with supporting data points if any**
1	3	3.1 (i)	**Provision of a service within 7 days of payment of demand note by the applicant** **Benchmark: 100%**	This parameter should be removed from monitoring as well as reporting as the same has been now redundant.	At present, both wireline and wireless services are provisioned only on demand basis and subject to technical feasibility. Therefore, there is no need to monitor or report this redundant parameter. This parameter should be removed from monitoring and reporting.
2	3	3.1(ii)	**Fault incidences (No. of faults per 100 subscribers per month)** **Benchmark: <5**	Benchmark for this parameter should be changed to ≤ 7 and reporting should be done on Quarterly basis and on Quarterly average basis only, not on Monthly basis as proposed by TRAI.	Considering the various challenges which are beyond the control of service providers, it is suggested that the benchmark for this parameter should be aligned with the current broadband service benchmarks, which is set at <7. TRAI should consider the following reasons and revised the benchmark for this parameter at <7. a. Difficult geographical characteristics of some regions preventing infrastructure deployment/rectification. b. Delay in permissions and approvals, can impact the timely restoration of services. c. Re-establishing connectivity to the last mile, especially in remote or underserved areas, can be technically challenging. d. Interruptions in electrical supply can disrupt wireline services and affect fault resolution. e. Physical damage to fiber-optic cables, such as cuts, can lead to service interruptions and require time-consuming repairs.

	3	3.1(iii)	**Fault repair by next working day in Urban areas** **Benchmark: ≥ 85%** **Average Over a period: One month**	This parameter should continue to be averaged on a quarterly basis and not on monthly as proposed by TRAI.	We do not agree with the monthly submission and suggest that the existing parameters and benchmarks should continue as is on quarterly basis.
3	3	3.1(iv)	**Fault repair within five days in Urban areas** **Benchmark: 100%**	This benchmark for this parameter should be relaxed and revised to "Fault repair within seven working days in Urban areas" with a relaxed benchmark of 95%. This parameter should continue to be average on a quarterly basis and not on monthly as proposed by TRAI.	There are many issues that prevent 100% compliance, such as delay in getting permissions and approvals, Re-establishing connectivity to the last mile, Interruptions in electrical supply, Physical damage to fiber-optic cables, customer unavailability etc. can lead to service interruptions and require time-consuming repairs. All these issues may kindly be considered, as the proposed 100% benchmark for fault repair in 5 days is over stringent. Further, we suggest that every Fault repair related timeline should be defined in working days.
	3	3.1(v)	**Fault repair by next working day in rural and hilly areas** **Benchmark : 75%**	This parameter should continue to be average on a quarterly basis.	We disagree with TRAI's proposal for monthly submission and it suggested that that reporting of this parameter should continue as is on quarterly basis.
4	3	3.1 (vi)	**Fault repair within seven days in rural and hilly areas** **Benchmark: 100%**	The benchmark for this parameter should be relaxed and revised to "Fault repair within seven working days in rural and hilly areas" with a relaxed benchmark of 95%.	We suggest to maintain the benchmark for this parameter at a 95% service restoration rate within 7 working days, considering the practical constraints beyond the control of TSPs that may prevent achieving 100% compliance within specified time limits.

				This parameter should be averaged on a quarterly basis and not monthly as proposed by TRAI.	Further, we suggest that every Fault repair related timeline should be defined in working days.
	3	3.1 (vii)	**Mean Time to Repair (MTTR)** **Benchmark : <= 10 Hours**	We suggest that that reporting of this parameter should continue as is on quarterly basis, instead of monthly basis as proposed by TRAI.	We disagree with TRAI's proposal for monthly submission and it suggested that that reporting of this parameter should continue as is on quarterly basis.
	3	3.1(Viii)	**Metering & Billing accuracy - postpaid Benchmark : =< 0.1%)**	These parameter should be removed from Monitoring & Reporting under the QoS Regulations.	Since, TRAI has already issued a separate regulation for Audit on Metering and Billing accuracy, covering all the metering & billing accuracy related scenarios including complaints for both prepaid/postpaid. Therefore, it is suggested that this parameter should be removed from monitoring & reporting under the QoS Regulations. Further, in case TRAI continues with this parameter, it is suggested that reporting of these parameter should continue to be based on Quarterly average and not on monthly basis.
	3	3.1(iX)	**Metering & Billing accuracy - prepaid Benchmark : =< 0.1%)**		
	3	3.1(x)	**Resolution of billing/charging complaints within Six weeks** **Benchmark: 100%**	These parameter should be removed from Monitoring & Reporting under the QoS Regulations.	Since, TRAI has already issued a separate regulation for Audit on Metering and Billing accuracy, covering all the metering & billing accuracy related scenarios including complaints for both prepaid/postpaid. Therefore, it is suggested that this parameter should be removed from monitoring & reporting under the QoS Regulations. Further, in case TRAI continues with this parameter, it is suggested that reporting of these parameter should continue to be based on Quarterly average and not on monthly basis.

	3	3.1(xi)	**Application of credit/waiver/adjustment to customer's account within one week from the date of resolution of complaints** **Benchmark : 100%**		Since, TRAI has already issued a separate regulation for Audit on Metering and Billing accuracy, covering all the metering & billing accuracy related scenarios including complaints for both prepaid/postpaid. Therefore, it is suggested that this parameter should be removed from monitoring & reporting under the QoS Regulations. Further, in case TRAI continues with this parameter, it is suggested that reporting of these parameter should continue to be based on Quarterly average and not on monthly basis.
5	3	3(xii) (a) & (b)	**Response Time to the customer for assistance** **Accessibility of call center/customer care Benchmark: >95%** **and** **Percentage of calls answered by the operators (voice to voice) within ninety seconds Benchmark: >95%**	These parameters should be removed from monitoring & Reporting, considering the changing scenarios.	We suggest that this parameter should be removed from monitoring and reporting considering the current scenarios and following reasons: 1) The rapid advancement of technology, including AI-driven automation, have reduced the need for traditional voice-based interactions, enhanced the efficiency, providing 24/7 availability, scalability, and ensuring customer reliability, which complement human operator services. 2) No comparable precedence in India: This parameter is neither monitored nor enforced by any other regulator across various industries within the India or globally. 3) Lack of International Standards: There are no standard international practices or established industry or country norms for monitoring such parameters.
		3(Xiii)	**Termination/closure of service within seven days Benchmark: 100%**	This parameter should continue to be averaged on a quarterly basis and reporting of this parameter should continue as is on quarterly basis, instead of	No Need to change reporting from Quarterly to Monthly.

				monthly basis as proposed by TRAI. Further, Timeline for this parameter should be defined in working days.	
6	3	3(xiv)	**Refund of deposits within 45 days of closures**	Refund of deposits should be allowed within 60 working days of closures. This parameter should continue to be averaged on a quarterly basis and reporting should be continue as is on quarterly basis, instead of monthly as proposed by TRAI.	We suggest to retain the existing parameter and benchmarks of refund of deposits within 60 days, however 60 days timeline should now be defined as 60 working days. Reducing the number of days could negatively impact customer satisfaction, as it has been observed that customers often take some time to respond. Therefore, maintaining a 60 working day resolution period allows TSPs to ensure the best possible customer experience.

Regulation 4					
Sl. No.	**Chapter No.**	**Regulation No /Clause No.**	**Proposed provision in consultation paper**	**Suggested modification**	**Justification/ Global references with supporting data points if any**
7	3	4(1) (i)	**Registration of demand for new wireline connection irrespective of technical feasibility Benchmark: 100%**	This parameter should not be considered as part of QoS parameters to be monitored & reported.	This requirement will only increase compliance burden without significantly benefiting the consumers as considering the high competition, TSPs are already actively expanding their wireline networks, contingent upon technical feasibility and commercial viability and accumulating such details will pose significant challenges for service providers, particularly in areas where network expansion is not planned in the immediate_future. Further, The license does not mandate 100% roll-out, thus the requirements of mandating TSPs to register demand even in absence of technical feasibility is unnecessary and will not serve any purpose.
8	3	4(1) (ii)	**Requests for Shift of Telephone Connection to be attended within three days** **Benchmark: 95%**	The parameter should not be considered as part of the QoS parameter to be monitored & reported.	Shifting wireline connections within an extremely short timeframe, such as the stipulated 3 days, poses several challenges and complexities, as mentioned before. We suggest that the Authority should recognize the limitations and challenges in providing wireline services and should include this parameter in QoS regulations.
9	3	4(1) (iii)	**(a) Junctions between local Exchanges. Benchmark: 0.002**	The parameter should not be considered as part of the QoS parameters to be monitored & reported.	The telecommunications industry has witnessed remarkable advancements, characterized by the widespread adoption of all IP-based networks and the deployment of highly advanced infrastructure. These technological strides have substantially enhanced the flexibility and capabilities of telecom networks.
			(b) Outgoing junctions from Trunk Automatic Exchange (TAX) to local		The relevance of these parameters may now vary significantly based on the network architecture in use. In contemporary IP-based networks, the traditional notion

			exchange. Benchmark: 0.005 **(c) Incoming junctions from local exchange to TAX. Benchmark: 0.005** **(d) Incoming or outgoing junctions between TAXs. Benchmark: 0.005**		of "local exchanges" may no longer hold the same weight. The advent of IP-based networks and digital technology has supplanted many of the older analog and circuit-switched systems, resulting in a more adaptable and efficient infrastructure. Moreover, it's worth noting that TSPs are already actively monitoring and reporting Points of Interconnection (PoI) congestion. Consequently, the necessity of adhering to the conventional parameters has become increasingly obsolete.
	3	4(iv)	**Point of Interconnection (POI) Congestion (on Individual POI) at LSA Level** **Benchmark: <0.5%**	This should be only for monitoring purpose	No Need to include this parameter on Reporting as TSPS are actively monitoring and reporting Points of Interconnection (PoI) congestion.

CHAPTER 3					
SECTION III- Quality of Service (QoS) Parameters for Access Service (WIRELESS)					
Regulation 6					
Sl. No.	**Chapter No.**	**Regulation No /Clause No.**	**Proposed provision in consultation paper**	**Suggested modification**	**Justification/ Global references with supporting data points if any**
10	3	6A(i)(a)	**(a) % of commissioned cells for which geospatial service coverage map is available on service provider's website** **Benchmark: 100%**	This parameter should not be mandated and should be left at the discretion of service provider.	This parameter is not possible to comply with due to following reasons: a) Ensuring the 100% accuracy of the coverage map to consistently reflect network coverage can be a complex task. Discrepancies may result in customer frustration, dissatisfaction, and an increase in complaints. b) The potential for incorrect interpretation of coverage information, such as distinguishing between indoor and outdoor coverage or assessing signal strength, poses a challenge. Coverage maps often provide a high-level overview, which may not capture variations in signal strength, network congestion, or indoor coverage accurately. c) Large coverage maps with extensive data can lead to slow loading times, particularly on mobile devices, affecting the user experience. d) Instances may arise where a site or cell is technically live in the system but has been forcibly shut down due to local issues or disputes, leading to discrepancies between the map and the actual network status observed by customer. Instead of mandating that TSPs to display geospatial service coverage maps on their websites as part of Quality of Service (QoS) mandates, we recommend leaving this decision to the discretion of the TSPs.

11	3	6A(i)(b)	**(b) Accumulated downtime (Cells not available for service)** **Benchmark: ≤1%**	TRAI should not mandate this parameter at cell level. Reporting of this parameter should be continued on Quarterly Average at LSA level with existing benchmark of ≤ 2% instead of monthly average at cell level as proposed by TRAI	We submit that measuring cell-level downtime may not accurately represent network availability and service providers service quality, as cell outages may not have a direct impact on services. **In scenarios where one cell within a Base Transceiver Station (BTS) experiences downtime, the remaining cells within the same BTS can continue to serve the affected area.** Therefore, it clearly indicates that cell outage does not translate to network coverage outage. We further submit that while proposing to make the benchmarks more stringent, the Authority has assumed that advancements in technology, the expansion of LTE and 5G networks, the introduction of advanced Operations and Maintenance (O&M) tools, improved power availability, and streamlined Right of Way (RoW) processes have substantially reduced the challenges associated with monitoring and maintaining networks. However, we believe that ground realities in many aspects continue to exhibit significant variation. There are certain issues like frequent fiber cuts, non-availability of power and thefts, etc. are beyond the control of the TSPs which makes it more cumbersome for the TSPs to achieve the already existing benchmarks. This is 100% increase and in all probabilities would not be achievable by the TSPs leading to non-compliance of the benchmarks by the entire industry. It is therefore suggested that this parameter should be based on BTS level at the existing benchmark. It is also crucial to take into account the challenges and
12	3	6A(i)(c)	**(c) Worst affected Cells due to downtime (Cells not available for service for more than cumulative 24 hrs. in a month) Benchmark: ≤1%**	TRAI should not mandate this parameter at cell level. Reporting of this parameter should be continued on Quarterly basis, based on Quarterly Average at LSA level instead of monthly average at cell level as proposed by TRAI	

					issues that service providers confront in ensuring network uptime, especially in remote service areas such as North East, Assam, Himachal Pradesh, Ladakh, etc.. The Authority is itself aware of these issues and has referred to the same in its recommendations on Improving Telecom Infrastructure in Northeastern States of India dated 22nd September 2023
13	3	6A(i)(d)	**(d) Reporting of significant network outage to the Authority within 24 hrs of start of the outage (Services not available in a district or State for more than 4 hours) Note: For significant network outages of > 24 hrs: Proportional rent rebate as per plan charges for affected number of days shall be credited in next bill for post-paid consumers registered in the district. For the pre-paid consumers registered in the district, the validity of their pre-paid accounts as on outages start date shall be increased by equal number of days.**	This parameter should not be mandated and should be removed from the draft regulations.	TRAI has initially sought this information on need basis which is now being proposed to be part of the Regulation and monitored by TRAI on monthly basis. There are certain factors beyond the control of TSPs such as frequent power cuts, thefts of generators and petrol, Indian geography issues, fiber cuts etc. some of these can take more time to address and as such may result in continued disruption of service for more than 4 hours. We believe that such granular level reporting already encompasses the monitoring of significant network outages. TSPs are already obligated to comply with the Authority's directive dated 28th March 2023. Therefore, introducing an additional parameter as part of QoS reporting is unnecessary, especially if it does not have a substantial impact on the quality of service provided to customers in general.

		6A(ii) (a)	**Call Setup success rate for circuit switched Voice or session Establishment Success Rate for Volte or DRB Accessibility Success rate for VoNR as applicable(within Licensee's own network)** **Benchmark >98%**	There is no need to make this parameter more stringent. Reporting of this parameter should be continued on Quarterly basis, based on Quarterly Average at LSA level instead of monthly average at cell level as proposed by TRAI	The proposed benchmark has decreased the TSP flexibility by 60%. (from 5% to 2%) All TSPs are meeting the existing benchmarks of the parameter. Improved performance cannot be the reason for an increase in CSSR benchmarks. Hence, the existing benchmark should prevail and no changes should be made to the benchmarks.
		6A(ii) (b)	**SDCCH Congestion/Paging Channel Congestion/RRC Congestion** **Benchmark: <1%**	Reporting of this parameter should be continued on Quarterly Average at LSA level instead of monthly average at cell level as proposed by TRAI	This parameter should be averaged on a quarterly basis and not on a monthly basis as proposed by TRAI.
		6A(ii) (c)	**Traffic channel congestion i.e TCH, RAB, E-RAB, EN-DC(E-UTRAN New Radio Bearer for SA) Congestion** **Benchmark <2%**	Reporting of this parameter should be continued on Quarterly Average at LSA level instead of monthly average at cell level as proposed by TRAI	This parameter should be averaged on a quarterly basis and not on a monthly basis as proposed by TRAI.
14	3	6A(iii)(a)	**(a) Network QoS DCR Spatial Distribution Measure for** **II. Packet Switched (4G/5G and beyond) network [PS_QSD(96, 96)]** **Benchmark: <2%**	Reporting of this parameter should be continued on Quarterly Average at LSA level based on the existing methodology at LSA level cumulative for all technologies, instead of monthly average at State/UT level for each tech. as proposed by TRAI	The Authority has already established one of the most rigorous benchmarks along with a percentile-based calculation methodology for Network QoS Drop Call Rate (Spatial & Temporal Distribution Measures) parameters in 2017. Any further reduction in the percentage of days and cells in the calculation methodology, will make it exceptionally challenging and unachievable for TSPs to meet such stringent benchmarks, considering the operational challenges they face in running and maintaining vast networks. These parameters and benchmarks are more theoretical

					and not practical in a real-time technology-agnostic network. TSPs are already overburdened in extracting the data for the existing parameter and to meet it benchmark which are already very harsh. Further, it would not be possible for the TSPs to segregate the data technology-wise (2G/3G/4G/5G). The earlier parameter was Network QoS DCR Spatial Distribution Measure [Network_QSD(90,90)] Same benchmark for current reporting Ø For PS DCR new benchmark is revised with 60% stringent while ongoing issues are not considered, the issue include Interference issues where Airtel continue to face network issues on account of jammers and illegal radio repeaters, etc. At present, the interference testing is done only on the basis of complaints and the interference is not getting monitored on a proactive basis. Ø Atmospheric ducting impacting most of circles (Sep to Apr- Severe Impact while May to Aug- Moderate impact) Accessibility, Retainability and High Packet drops majorly degraded on impacted sites, several actions are taken to mitigate atmospheric interference but It's still impacting user experience during its high intensity Ø highway/Railway route/Outskirt/Fringe serving cells have majority Low Call Volume cells which are not addressable and have high impact in drops The mandate for QoS reporting and applicability of benchmarks at the State/UT level on a monthly basis

					makes it exceedingly difficult for TSPs to achieve the 96th percentile criteria, as they have a concession of only 1 day out of 30 days for network maintenance and restoration of such humongous networks. Hence, it is suggested that the existing parameter and its existing benchmarks should continue and should not be revised making it more stringent.
15	3	6A(iii)(b)	**(b) Network QoS DCR Temporal Distribution Measure for** **II. Packet Switched (4G/5G and beyond) network [PS_QTD(97,96)]** **Benchmark: <3%**	Reporting of this parameter should be continued on Quarterly basis with Current Benchmark QTD(97,90), based on the existing methodology at LSA level cumulative for all technologies, instead of monthly average at State/UT level for each tech. as proposed by TRAI	There is no precedence in any country where this parameter is captured to derive at QoS standards. Further, These parameters and benchmarks are more theoretical and not practical in a real-time technology-agnostic network. It would not be possible for the TSPs to segregate the data technology-wise (2G/3G/4G/5G). This parameter cannot be used for actionable or network optimization. Hence, it is suggested that the existing parameter and its existing benchmarks (97,90) should continue . We reiterate that no regulatory body worldwide has imposed such stringent benchmarks and associated financial disincentives, particularly on commercial telecom service providers. The earlier parameter was Network QoS DCR Temporal Distribution Measure [Network_QTD(97,90)] Ø For PS DCR new benchmark is revised with 60% stringent while ongoing issues are not considered while

					we continue to face network issues on account of jammers and illegal radio repeaters, etc. At present, the interference testing is done only on the basis of complaints and the interference is not getting monitored on a proactive basis. Further, the proliferation of illegal repeater continues to be on the rise which is leading high drop rate in many pockets of metro cities. Ø Atmospheric ducting impacting most of circles (Sep to Apr- Severe Impact while May to Aug- Moderate impact) Accessibility, Retainability and High Packet drops majorly degraded on impacted sites, several actions are taken to mitigate atmospheric interference but It's still impacting user experience during its high intensity Ø highway/Railway route/Outskirt/Fringe serving cells have majority Low Call Volume cells which are not addressable and have high impact in drops
		6A(iii)(c)	**Connection with good Voice quality (Circuit Switched or VOICE over LTE (VoLTE) or VoNRas applicable)** **Benchmark : >95%**	Reporting of this parameter should be continued on Quarterly basis, based on the existing methodology at LSA level cumulative for all technologies, instead of monthly average at State/UT level for each tech. as proposed by TRAI	The existing process has been well established and all TSPs have been scrupulously following the same. The systems have been designed to capture the data based on the parameters established by TRAI. Any revision in the same would require modifications in the existing systems, its testing and auditing to ensure compliance to the TRAI Regulations. Further, TSPs have been striving hard to adhere to the stringent norms as laid down by TRAI. Improved performance of the TSPs should not be leveraged to make the benchmarks more stringent. This parameter should be averaged on a quarterly basis and not on a monthly basis as proposed by TRAI.

16	3	6A(iii)(d)	**(d) DL Packet Drop Rate for Packet Switched Network (4G/5G and beyond) [DLPDR_QSD(96, 96)] Benchmark: <2%**	There should not be any revision in the existing parameter and benchmark. Reporting of this parameter should be continued on Quarterly basis, based on the existing methodology at LSA level cumulative for all technologies, instead of monthly average at State/UT level for each technology as proposed by TRAI	While TSPs have been striving hard to adhere to the already stringent norms as laid down by TRAI, improved performance of the TSPs should not be leveraged to make the benchmarks more stringent. Instead of solely focusing on **problems related to call muting and muffling being caused by** network reliability and maintainability, the Authority should also consider that these also depend on factors such as customers' location, distance from the network site, the number of connected users, the type of handset used, and usage patterns, whether it's steady or on-the-go. Further, external interference such as atmospheric ducting in the TDD band, particularly concerning UL-PDR is another major reason that makes it impossible for TSPs to achieve such benchmarks based on the revised calculation methodology. Hence, the existing parameters and benchmark should continue.
17	3	6A(iii)(e)	**(e) UL Packet Drop Rate for Packet Switched Network (4G/5G and beyond) [DLPDR_QSD(96, 96)]** **Benchmark: <2%**	There should not any revision in the existing parameters and benchmark. Reporting of this parameter should be continued on Quarterly basis, based on the existing methodology at LSA level cumulative for all technologies, instead of monthly average at State/UT level for each tech. as proposed by TRAI	While TSPs are striving hard to adhere to the stringent norms as laid down by TRAI, improved performance of the TSPs should not be leveraged to make the benchmarks more stringent.

18	3	6A(iv)	**Messaging: Successful SMS delivery within service provider's network in less than 20 seconds** **Benchmark: >95%**	This parameter should not be mandated.	There are various factors that impact the delivery of SMS such as no coverage area, customer handset issue, technical glitches, power outage, etc., which are beyond TSPs control. Ensuring delivery of SMS within 20 seconds is not feasible due to below reason:- a. Handset Memory Full b. User is not available in the network (Switch-Off Scenario) d. Target user belongs to other Operator (Uncertain Network Conditions) In view of the above challenges which are beyond the control of the TSP, it is suggested that this parameter should be removed from the draft Regulations.
6 (B) Customer Service Quality Parameters					
		6B(v)	**Metering & Billing accuracy - postpaid Benchmark : =< 0.1%)**	These parameters should be removed from Monitoring & Reporting under the QoS Regulations.	Since, TRAI has already issued a separate regulation for Audit on Metering and Billing accuracy, covering all the metering & billing accuracy related scenarios including complaints for both prepaid/postpaid. Therefore, it is suggested that this parameter should be removed from monitoring & reporting under the QoS Regulations. Further, in case TRAI continues with this parameter, it is suggested that reporting of these parameters should continue to be based on Quarterly average and not on monthly basis.
		6B(vi)	**Metering & Billing accuracy - prepaid Benchmark : =< 0.1%)**		
19	3	6B(vii)	**Resolution of billing/charging complaints within four weeks** **Benchmark: 100% within 4 weeks**	.	

		6B(viii)(b)	**Application of credit/waiver/adjustment to customer's account within one week from the date of resolution of complaints** **Benchmark : 100%**		
20	3	6B(ix)(b)	**Response Time to the customer for assistance** **(a) Accessibility to the call centre/customer care benchmark >95%** **Percentage of calls answered by the operators (voice to voice) within ninety seconds** **Benchmark: ≥95%**	These parameters should be removed from monitoring & Reporting considering the current technological advancements and other scenarios.	We suggest that these parameter should be removed from monitoring and reporting, due to following reasons: 1) The rapid advancement of technology, including AI-driven automation, have reduced the need for traditional voice-based interactions, enhanced the efficiency, providing 24/7 availability, scalability, and ensuring customer reliability, which complement human operator services. 2) No comparable precedence in India: This parameter is neither monitored nor enforced by any other regulator across various industries within the India or globally. 3) Lack of International Standards: There are no standard international practices or established industry or country norms for monitoring such parameters.
		6B(xi)	**Termination/closure of service within seven days Benchmark: 100%**	This parameter should continue to be averaged on a quarterly basis and reporting of this parameter should continue as is on quarterly basis, instead of monthly basis as proposed by TRAI. Further, timeline for this	No Need to change reporting from Quarterly to Monthly.

				parameter should be defined in working days.	
21	3	B(xi)	**Refund of deposits within 45 days of closures**	Refund of deposits should be allowed within 60 working days of closures. This parameter should continue to be averaged on a quarterly basis and reporting of this parameter should continue as is on quarterly basis, instead of monthly basis as proposed by TRAI.	It is recommended to retain the existing parameter and benchmarks of refund of deposits within 60 days, however the 60 days timeline should now be defined as 60 working days, as service providers' intention is to maximize their efforts to reach out to the customer for successful processing of refund. Reducing the number of days could negatively impact customer satisfaction, as we've observed that customers often take some time to respond. Therefore, maintaining a 60 **working** day resolution period allows us to ensure the best possible customer experience.
	SECTION III- Quality of Service (QoS) Parameters for Access Service (WIRELESS)				
	Regulation 7				
	Sl. No.	**Chapter No.**	**Regulation No /Clause No.**	**Proposed provision in consultation paper**	**Suggested modification**
22	7	1	**Registration of demand for wireless services in case services cannot be provided due to non-availability of wireless service**	This parameter should not be considered as part of QoS parameters to be monitored & reported.	There is no provision to capture such registration in any area which is not serviced by a TSP. The network expansion is carried out by the TSPs based on the techno-commercial feasibility and priority.
23	7	2	**Service Coverage** **(i) Signal strength at street level shall be as specified in TSTP for rollout obligation issued by the**	This parameter should be not be considered as part of QoS parameters to be monitored & reported	This parameter should not be considered as part of QoS monitoring and reporting for the following reasons. a) TSPs are already complying to the TEC standards related to service coverage and signal strength at

			Central Government for respective technology **(ii) Signal strength in-vehicle shall be up to 10dBm below the street level signal strength for respective technology** **(iii) Signal strength for indoor as per applicable standard or as per rollout obligation for respective technology**		different levels (outdoor/indoor/in-vehicle) and same are duly verified by the LSA Units of DoT at the time of verifying and certifying compliance of roll-out obligations by TSPs in adherence to license conditions and NIA for spectrum auction. b) Further, measuring in-vehicle and indoor signal strength accurately can be technically complex. Indoor signal strength can vary widely depending on the building's size, construction, and location or below ground level. It may not be practical to set uniform benchmarks for all indoor environments. c) Customers have the option to choose from available solutions such as In-Building Solutions (IBS), Wi-Fi calling, Offloading data through Cellular Enhancement Products (ODCEP), Fixed Wireless Access (FWA), and more to improve their indoor coverage. 2. In a competitive telecom market, service providers have an incentive to improve indoor coverage to attract and retain customers. Market forces might be sufficient to drive investments in this area without the need for regulatory mandates. Rather, regulatory authorities may encourage the adoption of such technologies to enhance overall network quality and customer satisfaction. 3. Further, for operator-assisted drive tests, a Signal-to-Noise plus Interference Ratio (SNIR) value greater than -6 should be considered, compared to the current practice, where many good samples with SINR values greater than 0 are left out and cannot be measured for LTE and advanced networks. We recommend that the

					above submissions should be taken into consideration while finalizing the new QoS regulations.
24	7	4	**Point of Interconnection (POI)performance for interconnection between packet switched networks(4G/5G) at LSA level** **(i) Latency<30ms** **(ii) Jitter<20ms** **(iii) Packet loss<1%**	This parameter should not be considered as part of QoS parameters to be monitored & reported	These parameters can only be measured within the individual service provider networks and not between different service providers. Thus, end to end measurement of these parameters across operators, irrespective of the type of POI (IP or TDM), is not technically feasible. Thus, end to end measurement of these parameters across operators, irrespective of the type of POI (IP or TDM), is not technically feasible. **Also, the POIs for voice calls are technology neutral and do not cater specifically to 2G/3G traffic or 4G/5G traffic.** Any bifurcation of parameter based on technologies should be removed from the draft regulation. Hence this parameter should be removed from QoS reporting and Benchmark.

CHAPTER 3					
SECTION IV- Quality of Service (QoS) Parameters for Access Service (WIRELESS)					
Regulation 9					
Sl. No.	**Chapter No.**	**Regulation No /Clause No.**	**Proposed provision in consultation paper**	**Suggested modification**	**Justification/ Global references with supporting data points if any**
25	9	1	**Latency** **Benchmark: <100 ms (in 4G and 5G network)** **&** **<50 ms in wireline network**	The benchmark of latency for Wireless services should be <250 ms and for Wireline Services should be <120 ms. Further, reporting of this parameter should be averaged on a quarterly basis and NOT monthly as proposed by TRAI.	TRAI has referred to international examples where individual telecom service providers have achieved ultra-low latency. However, it's essential to note that such stringent benchmarks have not been widely prescribed by regulators worldwide. Moreover, we believe that the achievement of such benchmarks should primarily be driven by market forces to attract and retain customers. While prescribing these stringent benchmarks for wireless and wireline, TRAI should also consider various operational challenges and factors:
					a) **Backhaul Network Challenges:** Achieving higher benchmarks, regardless of deploying advanced packet core networks with LTE, LTE-Advanced, or 5G technology, depends on the quality and capacity of the backhaul network. Challenges such as challenging terrain, Right of Way (RoW) issues, the cost of fiberizing base transceiver stations (BTS), local issues, and more can impact network performance.
					b) **Routing Variations:** Depending on route occupancy and network conditions, traffic may take different paths, such as the shortest or longest route. This variation in routing can lead to latency differences.
					c) **Submarine Cable Damage:** In the event of damage to submarine cables or major fiber cuts, traffic may be rerouted through alternative paths, resulting in higher observed latency.

					d) **Network Congestion:** High numbers of connected users and a vast subscriber base, especially when compared to other nations, can lead to network congestion, resulting in higher observed latency.
					e) **Interference:** Wireless networks, in particular, can suffer from interference, leading to latency variations. Interference may arise from physical obstacles, competing wireless signals, or environmental factors.
					f) **Cloud-Based Services**: The use of cloud-based services can introduce additional latency, as data needs to travel to and from remote cloud servers. The geographical location of these servers can impact latency.
					g) **Decisions outside purview of TSP**- It is pertinent to mention here that in many cases the decisions taken by non-licensees like CDN providers also affect the latency. For instance, a content provider's decision to have or not have CDN in a TSPs network will impact the latency.
					h) **Security Measures**: Security measures like firewalls, intrusion detection systems, and encryption can introduce processing delays, affecting overall latency.
					Given that latency is measured from the user reference point at the Point of Presence (POP) or Internet Service Provider (ISP) gateway node to the international gateway (IGSP/NIXI), we recommend maintaining the same benchmarks as <250ms for wireless networks and <120ms for wireline networks.
26	9	2	**Jitter** **Benchmark: <50 ms (in 4G and 5G network) & <40 ms in wireline network**	This parameter should not be mandated in the proposed Draft Regulation.	Jitter is a measure for variance in latency and this micro level parameter is used for fault analysis only, whereas latency is a self-sufficient parameter which gives insight of QoE of the user. Generally, such micro-level data is used for dip-stick testing and not on a regular basis.

					Therefore, this parameter does not serve any purpose and should not be part of the Draft Regulation.
		9(1)(3)	**PDP context activation success rate for wireless data service.** **Benchmark (Wireless): ≥ 95%** **Benchmark (Wireline): -**	This parameter should not be mandated in the proposed Draft Regulation.	For capturing the data and measurement of the same, the ISP location is required and accessed. The same is not in the control of TSPs. Further, the measurement methodology prescribed in the Consultation Paper is not relevant to the TSPs rather the same falls under ISPs domain. In view of the above, it is suggested that this parameters should be removed from the draft Regulation.
		9(1)(4)	**Packet drop rate** **Benchmark (Wireless): < 2%** **Benchmark (Wireline): ≤ 1%**	This parameter should be reported on Quarterly basis, based on Quarterly Average instead of monthly average as proposed by TRAI	The proposed benchmark has changed from 5% to 2% making it stringent by 60% without considering ongoing issues of Interference, Atmospheric ducting, low coverage in rural pockets where inter-site distance is high nor geographical challenge is not considered for JK, NE, MP/CG, HP, UK. Hence, it is advised that existing benchmarks should continue.
27	9	5	**Minimum download and upload speed against the minimum subscribed speed in offered data plans.** **Benchmark: >80% of the minimum speed for wireless and 100% of the minimum speed for wireline.**	This parameter should be removed from the proposed Draft Regulation.	With reference to minimum download speed for wireless networks, it is submitted that neither TSPs prescribe any minimum download speed nor is it possible to guarantee any minimum speed in the case of wireless networks. The speed experienced by a user on a wireless network depends on multiple factors, including the customer's handset, location (indoor or outdoor), distance from the cell site, the number of connected users, the type of website or app being accessed, whether the website is on IPv6 or IPv4, topography, backhaul connectivity, various topographical issues and much more. These factors are not under the control of service providers. Moreover, it is pertinent to note such a parameter is not

					consumer oriented nor is consumer friendly as it does not serve any purpose since the minimum speeds cannot be guaranteed in a wireless network.
		9 (5)	**Every Service provider shall in all its internet service plans, indicate the minimum download and upload speed available to the customers**		Given the above-mentioned points and basis the industry's submission on the consultation paper for wireless data services, it is requested that this parameters should be removed from the QoS draft regulations. Further, for the benchmarks of 100% for the minimum download speed in the case of wireline networks, the calculation methodology appears to be erroneous. The authority is proposing 100% benchmarks based on the average of the lower 10% of all respective test calls. This approach seems incorrect if the benchmark is set at 100%. Nevertheless, considering the challenges highlighted for network latency and its applicability to wireline networks where the speed observed may exhibit some variation, we recommend that the authority retains the existing benchmarks of >80% in the case of wireline networks. The reporting of the same should continue to be on Quarterly basis instead of monthly basis as proposed by TRAI.

SECTION IV- Quality of Service (QoS) Parameters for Access Service (WIRELESS AND WIRELINE)					
Regulation 10					
Sl. No.	**Chapter No.**	**Regulation No /Clause No.**	**Proposed provision in consultation paper**	**Suggested modification**	**Justification/ Global references with supporting data points if any**
28	10	(i)	**Registration of demand for new wireline broadband connection irrespective of technical feasibility** **Benchmark: 100%**	This parameter should not be mandated in the proposed Draft Regulation.	This requirement will only increase compliance burden without significantly benefiting the consumers as considering the high competition,TSPs are already actively expanding their wireline networks, contingent upon technical feasibility and commercial viability and accumulating such details will pose significant challenges for service providers, particularly in areas where network expansion is not planned in the immediate future. The license does not mandate 100% roll-out, thus the requirements of mandating TSPs to register demand even in absence of technical feasibility is unnecessary and will not serve any purpose. In view of the above, this parameter should not be mandated and should not be part of the proposed Draft Regulations
		(ii)	**Successful packet data transmission download attempts** **Benchmark Wireline 95% and Wireless 80 %**	This parameter should not be mandated in the proposed Draft Regulation.	For collation of data for this parameter, home-to-home checking of the data transmission is required, which is practically not at all possible. For any such data transmission speed, there already exists TRAI Myspeed app which the customers can use to analyse the download and upload speed of their data. Hence, these parameter should not be mandated and should not be part of the Draft Regulations.
		iii	**Successful packet data transmission upload attempts** **Benchmark Wireline 90% and Wireless 75%**		

		Iv	**Maximum Bandwidth utilization of any Customer serving node to ISP Gateway Node (intra - Network) or Internet Exchange Point Links Benchmark *)% links /route bandwidth utilization during peak hours (TCBH)**	This parameter should not be mandated in the proposed Draft Regulation.	This Draft regulation does not provide enough clarification on reporting of this parameter. There are multiple links involved in service delivery and measurement of traffic on each of the links is not possible. Further, this is in the purview of network design and should not be part of the purview of QoS. Hence, these parameter should not be mandated and should not be part of the Draft Regulations.
SECTION VI- RECORD KEEPING, REPORTING AND PUBLICATION OF QUALITY OF SERVICE PERFORMANCE					
Regulation 13					
Sl. No.	**Chapter No.**	**Regulation No /Clause No.**	**Proposed provision in consultation paper**	**Suggested modification**	**Justification/ Global references with supporting data points if any**
	3	13 (1)	**Reporting : Every service provider shall create secure online system within 6 months of notification of these regulations for collection of primary data, its processing, generation and submission of online compliance reports to the Authority with online compliance reports to the Authority with online access of required supporting primary data in respect of each QoS parameters.**	This parameter should not be mandated in the proposed Draft Regulation as creation of the proposed online system is not feasible. The proposed regulation should only mandate providing the report (processed data) through online access. The requirement to provide primary/raw data should be removed.	QoS PMR reports primary data are automated but complete PMR automation is not possible due to technical issues. It must be noted that KPIs are made after the extraction/evaluation of lot off data Further, the process of generation of reports requires manual, semi-manual and automation work as well as requires data curation, which is a cumbersome task. Moreover the systems are not designed to give the reports as per the formats prescribed by TRAI Raw reports and coding needs to be verified and issues if any, needs to be rectified. Therefore, single touch reporting is not at all possible due to above reasons. Hence, this requirement should be removed from the Regulations.

	3	13(2)	**The benchmark of each QoS parameters specified in sub-regulation (1) shall be measured, reported, and complied at State or Union Territory (UT) and License Service Area level, as may be specified by order or direction issued by the Authority time to time:** **Provided that the Authority may notify list of districts and QoS parameters for measurement, reporting and compliance of QoS benchmarks based on identification of areas experiencing degraded QoS.**	The reporting of performance against parameters should continue at LSA level only.	Please refer to the submission made by Airtel under the Preamble. The systems and processes of the TSPs have been aligned based on LSA-wise reporting and as per the license issued by DoT. Any modifications in the reporting and extraction of data apart from the existing criteria would require alterations in the systems and process which is a humongous task. The proposed parameter is noteworthy for its divergence from the licensing framework, and it contradicts the network design established at LSA by the TSPs. There are certain cities/states which are covered under different LSA and States. For example, Noida & Gurgaon fall in Delhi LSA but in the States of U.P and Haryana respectively. It is therefore suggested that the prevailing reporting at LSA level should be continued.