Shri U K Srivastava,
Principal Advisor (NSL),
Telecom Regulatory Authority of India,
Mahanagar Doorsanchar Bhawan,
Jawahar Lal Nehru Marg,
New Delhi - 110002.

Subject: AUSPI's Response to the TRAI Consultation Paper on Review of network related Quality of Service standards for Cellular Mobile Telephone Service

Dear Sir,

We are pleased to enclose AUSPI's response to the TRAI Consultation Paper on Review of network related Quality of Service standards for Cellular Mobile Telephone Service.

Thanking you,

Yours sincerely,

Dilip Sahay
Advisor

Encl: As above

Copy to:

1. Shri R S Sharma, Chairman, TRAI
2. Shri Anil Kaushal, Member, TRAI
3. Shri Sudhir Gupta, Secretary, TRAI
AUSPI’s response to TRAI Consultation Paper on Review of network related
Quality of Service standards for Cellular Mobile Telephone Service

Preamble

We thank the Authority for giving us the opportunity to respond to the consultation paper which discusses various parameters and benchmarks for the Quality of Service and Quality of Experience of the consumer while using the telephony services.

We request the Authority that, before fixing any parameter or benchmark, it would be appropriate to first examine the present status of the Networks and its limitations, factors within and beyond the control of the Operators.

We would like to submit that telecom operators have made huge investments for the deployment and upgradation of the network as well as for acquiring spectrum from time to time. These investments have led to the growth of telecom services and enhancement of telecom infrastructure in the country. The quality of service parameters provided by the Authority is being adhered by the TSPs which would not have been possible without the huge investments made by them. There is a provision of financial disincentives by the TRAI in case of failure to meet the benchmarks.

In order to meet the QoS parameters, many steps have been taken by the TSPs like Deployment of additional BTSs, Optimization Efforts in line with the international standards, Upgradation of existing sites and network elements amongst others. However, due to the various challenges in the wireless technology, maintaining QoS at different areas are difficult and maintaining uniform QoS across LSAs is a huge challenge. The performance of a network can be judged only at a network level or at best at a LSA level as a License for operating a cellular mobile service is granted on a LSA level. We feel that in the absence of enabling and uniform policy, it will be arbitrary to fix QoS at the granular level below the LSA. Service providers are continuously taking steps for improving the QoS.

In view of the above, it is submitted that mandating QoS parameters below the LSA without taking into consideration of the issues being faced by the TSPs beyond their control is unreasonable. Presently, there is no case is made out for defining more stringent Network QoS parameters for Mobile Telephony services, rather than various policy initiatives need to be taken for the ease of deployment of telecom infrastructure for further improvement of QoS for the Mobile telephony services in the country.

Response to the issues raised in the consultation paper is as follows:
Issue wise response to the Consultation Paper

Q1. **In case QoS is mandated at a sub-service area level, which option (LDCA-wise or District Headquarter/ city/ town-wise or BTS-wise) you would recommend? Please comment with justifications.**

Q3. **How should the benchmark for the parameters be revised? Should it be licensed service area wise or district wise or BTS-wise or a combination? In such cases what should be the benchmarks? How should the benchmarks be measured? Please give your views on each parameter, with justification.**

**AUSPI’s Response**

TSPs wireless Networks operate under challenging and varying external conditions and therefore, QoS can be maintained depending on two important factors viz. Technological Limitation and Policy issue.

Technologically, wireless medium is impacted by various external factors like presence of natural barriers, presence of man-made barriers and interaction with other objects like vehicles. We, therefore, believe that maintaining same QoS is practically impossible in the wireless networks.

The other aspect relates to Policy related issues. Telecom infrastructure is the backbone for any telecommunication technology. It is imperative to have enabling policies to facilitate unhindered, fast and cost effectiveness for the installation, operation and maintenance of telecom infrastructure.

The unfounded fear about EMF radiation is being spread by some elements in our country, which has resulted in sealing of sites. TSPs are facing huge challenge in acquiring sites to deploy towers in critical areas and in obtaining RoW for laying fiber cables etc.

**Maintaining uniform quality of services in all the parts of LSA due various factors are beyond the control of operators and we believe, that taking average of all these parameters at LSA level is the only way to measure the QoS offered by a network. Any other method will give a distorted picture; will be arbitrary and not founded on ground realities.**
Q2. How should the call drop rate calculated - either at the Licensed service area level calculated during TCBH, or calculated during the Cell Bouncing Busy Hour (CBBH) at BTS level should be the benchmark? Please give your views on each parameter, with justification.

AUSPI's Response

1. Please refer our response to Question No.1 above. Further, we would like to state that QoS of a network can be averaged at a network level only or at best of LSA level and the QoS of a network should be measured at that time of the day when the demand for the network resources is maximum which remains consistent over the days.

2. Cell Bouncing Busy Hour may vary drastically with various factors like sudden movement of subscribers, any outage in the neighboring sites, traffic jam, other high footfall events, etc.

3. Whereas, TCBH is the true representative of the network’s performance as during the TCBH, the network is loaded with the maximum traffic for the day. It is during the TCBH that all the resources of the network (not just a few cells) are under the load which is more than any other time of the day. Thus, TCBH accounts for the network performance as a whole not just for a particular cell. Therefore, we believe that QoS parameters should be measured at TCBH only.

Q4. How could the network parameters be technology agnostic? What are the parameters and benchmarks that are required to be defined? Please give your views with justifications.

AUSPI's Response

The voice services provided under various technologies like 2G, 3G etc provide similar features and hence there should technology agnostic measurement for measuring quality of voice services provided under these technologies.

In this regard, the measurement results viz Network Availability, Accessibility (Call Set-up Access Rate), retainability (Call Drop Rate) should be calculated for all technologies providing the voice services in the country.
### Network Service Quality Parameters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Measurement Criteria</th>
<th>Average over a Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTS/NodeB/eNode-B downtime</td>
<td>&lt;=2%</td>
<td>One Month</td>
</tr>
<tr>
<td>Worst affected BTS/NodeB/eNode-B</td>
<td>&lt;=2%</td>
<td>One Month</td>
</tr>
</tbody>
</table>

#### Accessibility

- Call Set Up success rate (2G, 3G, 4G) >=95% during TCBH
- Signaling Channel Congestion (SDCCH - 2G, RRC-3G, RRC-4G) <=1% during TCBH
- TCH or RAB or Bearer Congestion

#### Retainability

- Call Drop Rate (2G, 3G or 4G) <=2% during TCBH
- Worst affected cells having more than 3% TCH Drop Rate <=3% during CBBH
- Connections with good voice quality (2G, 3G, 4G) >=95% during TCBH

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**Q5.** *Do you think it is essential to mandate the TSPs to set the RLT parameter? If so what should be the criteria to set the value and the value that needs to be set. Please comment with justifications.*

**AUSPI’s Response**

1. The GSM technology has been developed in such a way that there are various configurable parameters that decide how a network should be tuned or optimized as per the available resources in various situations and therefore, these standards have allowed for tuning of parameters as per the prevailing conditions like fast fading, shaded zone, radio propagation characteristics etc.

2. RLT is just one of the parameters for optimizing customer experience which decides for how long the call should be sustained if signal loss quality drops momentarily (say due to multipath fading at any particular instance of time). The call disconnection due to a momentary loss of signal is considered as undesirable due to the inconvenience caused to the customer on account going through the process of redialing the number.
3. Thus, tuning of RLT & other similar parameters is done to enhance customer experience. This is done on a case-to-case basis for every cell. Such parameter configuration takes place in all networks. The 3GPP/GSM standards are governing rules adhered by every handset manufacturer and network operator around the world. 3GPP/GSM standard governing bodies have designed parameters such as RLT (and other similar parameters) as variable, within a range, or facilitating the optimization of networks for the purpose of improving the customer experience as wireless planning is a complex process.

4. We submit that RLT is just a configuration parameter amongst thousands of other configuration parameters to counter various dynamic adverse conditions and thus in the best interest of the TSPs being able to optimize their networks for delivering good quality services, it should be kept out of the ambit of Regulatory framework.

Q6. Do you think it will be appropriate to calculate call drop rate through CDR meta data analysis? If so, what should be the benchmarks for such call drop rates calculated. Please comment with justifications.

AUSPI’s Response

1. The purpose of Call Detail Records (CDR) is for billing purposes only and have different levels/granularity of information available depending on vendors.

2. Call duration conclusively cannot be taken as directly related to instance of poor voice quality as the Call duration and vary from a few seconds to those in hours.

3. There are no separate Cause Codes available in CDRs for all type of drops. In addition, Call Drop calculation through CDRs may not give figures of actual scenario since cause codes generated through abnormal termination may have cases of intentional/unintentional call disconnect like mobile handset got switched off battery drained, customer moving to an underground Metro Station/Building etc.

Therefore, Call Drop rate cannot be calculated from CDR meta-data as the same has been not been devised for this purpose.
Q7. **Do you think calculation of customer satisfaction index will help in QoE of the consumer? If so elaborate the methodology of the calculation of such indexes. What are the latent variable that need to be defined and how are they to be calculated? Please comment with justifications.**

**AUSPI's Response**

The Quality of Experience is subjective and varies with the expectation of the consumers and affected by various factors such as awareness, experience, media, perception etc.

QoS parameters are quantitative in nature which are calculated from the actual data and thus represent a true picture of a network’s performance.

We believe that the parameters and indices suggested by the Authority in the Consultation Paper should not be used to decisively conclude upon QoS offered by the TSPs.

Q8. **What are your views on introducing a graded financial disincentives based on performance and what should be such quantum of financial disincentives for various parameters? Please comment with justifications.**

**AUSPI’s Response**

Market share loss for any TSP on account of not so good QoS would be a far bigger loss; in a market which is highly competitive and provides most affordable services in the world. The case for financial disincentive for any TSPs for rendering not so good QoS already exists in form of market forces as there are abundant choices for the customer. Therefore, there should not be any financial disincentive for the TSPs in case the QoS benchmarks are breached.
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