

Ericsson's submission in response to the Independent Communications Authority of South Africa's (ICASA) draft amended End-User and Subscriber Service Charter



1 Introduction

1.1 Ericsson submission

The Independent Communications Authority of South Africa (the Authority) has invited written comments by 14 March 2014 on the draft amended End-User and subscriber Service Charter, Government Gazette No. 37251 of 22 January 2014, hereinafter referred to as the “draft QoS regulation.”

1.2 About Ericsson

Ericsson is a world-leading provider of telecommunications equipment and services to mobile and fixed network operators. Over 1,000 networks in more than 180 countries use our network equipment, and more than 40 percent of the world's mobile traffic passes through Ericsson networks.

We are one of the few companies worldwide that can offer end-to-end solutions for all major mobile communication standards. Our networks, telecom services and multimedia solutions make it easier for people, across the world, to communicate.

And as communication changes the way we live and work, Ericsson is playing a key role in this evolution. Using innovation to empower people, business and society, we are working towards the Networked Society, in which everything that can benefit from a connection will have one.

Our vision is to be the prime driver in an all-communicating world.

1.3 The draft QoS regulation

Ericsson has studied the draft regulation and takes this opportunity to respond to it publicly as part of the notice and comment process. Ericsson welcomes the opportunity to engage further with the Authority and requests to make an oral presentation should public hearings be held on the draft QoS regulation.



2 Executive Summary

Like any other regulatory instrument, the *End-User and Subscriber Service Charter* or the QoS regulation must pass the regulatory clarity “litmus test.” Lack of clarity in any of the parameters and key performance indicators (KPI) would open the regulation to challenges and regulatory uncertainty.

In the beginning, mobile networks were built to deliver access to voice services across a defined coverage area. The main indicators for determining quality of service included measurements of network availability, speech quality and dropped-call rates. Generally speaking, that is still the case today for 2G-based, voice-centric networks.

In essence, the processes used by operators to manage network quality for voice can be employed for mobile data – with a major difference. Voice services involve well-known and static KPIs. Delivering data services for use with many apps requires decisions about service levels that must be continually revisited as the apps evolve and present new requirements.

Improving and maintaining the quality of user experience is a continuous process. Operators need to adapt continually as mobile devices, apps and network capabilities all develop in parallel. An effective way to improve app coverage involves optimizing the radio network infrastructure, and then to move progressively from macro to micro sites using efficiency measures.



3 Specific comments

3.1 Definitions:

3.1.1 **Broadband**

South Africa's Broadband Policy as published by the Minister of Communications, Hon. Yunus Carrim in Notice No. 953 of 2013, Government Gazette No. 37119 of 06 December 2013 (the Broadband Policy) defines broadband in terms of functionality and capability it provides.

Furthermore, the Broadband Policy sets targets that are increased incrementally and progressively to the year 2030 for the general population, schools, health facilities and other government facilities.

Ericsson submits that it is important for all broadband related policies and regulations to be set in the context of the Broadband Policy as an all-embracing framework. Any attempt to define or redefine "broadband" may be counter-productive and might in effect obstruct the country's vision of a connected information society as set out in the National Development Plan (NDP) and other policy documents.

We further humbly submit that the broadband definition in the draft QoS regulation should be removed and read: "as defined in the South Africa's Broadband Policy, as amended."

3.1.2 **Busy hour**

Ericsson submits that "busy hour" should be included in the definition section of the draft QoS regulation. The busy hour concept is used when dimensioning and optimizing networks for the highest traffic time.

This time is usually a continuous one hour period lying wholly in the time interval concerned (usually 24 hours) for which the traffic or number of call attempts is greatest.



3.2 Schedule 1

In order to avoid any ambiguities or discrepancies with the proposed methodologies and related reports, Ericsson submits the parameters used and the explanation thereof should be accompanied by the relevant formulae.

These formulae must be explicitly indicated in the regulation as this should help the industry to derive a common understanding for the parameters and methodologies.

3.2.1 Parameters with formulae

The following parameters are some of those that we believe should have their formulae explicitly indicated:

- Call Set Up Success Ratio
- Call Setup Time
- Drop Call Rate
- Blocked Call Rate
- Handover Success Rate

3.2.2 Call Set Up Success Ratio

The proposed number of samples, of 120, for Call Set Up Success Ratio is too low for a target of 98% to have a good confidence interval. So statistically, the result can vary between 95% and 100%, and thus not reliable. Ericsson humbly submits that the number of samples should be increased to at least 200 (or more) to have more reliable statistics.

3.2.3 Drop Call Rate

The Drop Call Rate result of 96% from 120 samples may also benefit, with more reliable stats, from more samples as proposed above in Call Set Up Success Ratio. Ericsson humbly submits that the number of samples should be increased to at least 200 (or more) to have more reliable statistics.



Ericsson submits that the accompanying methodology for drop call rate should ideally contain a busy hour just to put it in context. Where busy hour is not contained in the methodology or definition, it might be interpreted as meaning anytime outside the busy hour and any measurements done during a busy hour might be contested.

The measurement for drop call rate is defined extensively in the draft regulation. On careful reading this definition lends itself to call success rate not drop call rate, amounting to uncertainty.

One way to minimize this uncertainty is by including a formula used to determine this parameter.

3.2.4 Blocked Call Rate

Blocked Call Rate measurement seems to be covered adequately with 200+ samples. Ericsson thus submits that as an alternative, the standard samples for all KPI's should be 220 as suggested by the Authority in the case of Blocked Call Rate.

3.2.5 Coverage Rate

Coverage cannot be measured accurately during a call (in active mode) due to power control. RxLev measurements should be taken in idle mode in a slow drive for accuracy. RxQual is not a good measure for speech quality in a frequency-hopping network.

Ericsson submits that the RxLev and RxQual parameters are 2G specific parameters and do not speak to 3G. What equivalent Received Signal Strength Indication (RSSI) and quality parameters for would be used for 3G networks, if any.

3.3 Schedule 2

Albeit the reporting period for coverage rate is said to be monthly, Ericsson would like the said schedule to convey with reasonable clarity whether the drive test would be performed randomly or at specific periods.



Networks tend to be under increased amount of stress in time and space where operators are running promotions. If and when a drive test is performed and one of the networks happens to be under these conditions for some reason, the test results may not be a fair comparison or comparing “apples with apples.”

3.3.1 Average SMS message transmission success ratio

The target defined for this parameter in this draft QoS regulation is highly ambiguous. What the text and the mathematical sign denote are two opposite things and yet the two are used in the same sentence to reinforce each other.

3.3.2 Handover Success Rate

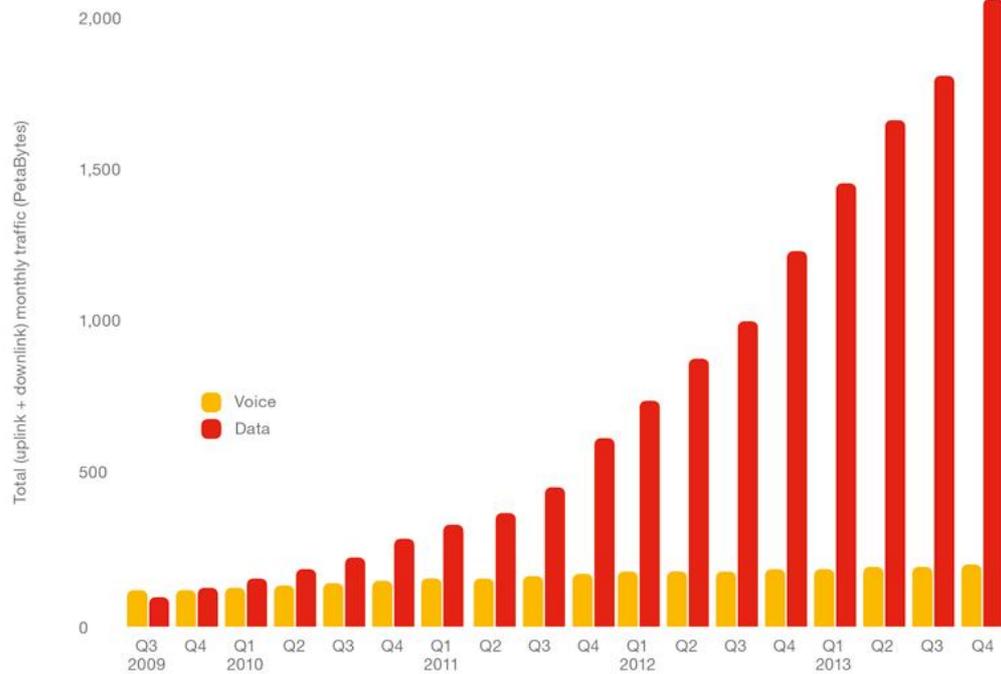
The proposed target of less than 20 seconds for the mean is confusing as this KPI is normally expressed as a percentage and not as a function of time. Ericsson requests clarification on this parameter and target. Inclusion of a formula would further simplify and possibly remove any misunderstandings.

4 General comments

4.1 Quality of experience and App coverage

The explosive growth of smartphones and app usage brings new challenges to mobile operators worldwide. These smartphones transformed the mobile user experience and sparked a surge in the volumes of mobile data generated around the world. In 2009, the volumes of mobile-data traffic surpassed voice traffic for the first time. Now data traffic is 10 times greater than voice.

As new apps that utilize the capabilities of these smartphones emerge and are adopted by users, they will fuel further demand for better app coverage.



Source: Ericsson (February 2014)

Figure 1: Global total monthly traffic in mobile networks Q3:2009 - Q4:2013

Today, operators are faced with user expectations for instantaneous, reliable access to their apps, wherever they are. To provide for this, operators need new ways of assessing both performance and the quality of the user experience. These things are not only meaningful to the typical user, but also enable operators to build and manage their networks in the most efficient, targeted and profitable way.

While all categories of mobile data are predicted to show significant growth over the coming years, the highest growth is expected from video traffic. Around half of all mobile-data traffic will be video by the end of 2018, according to Ericsson's market analysis.

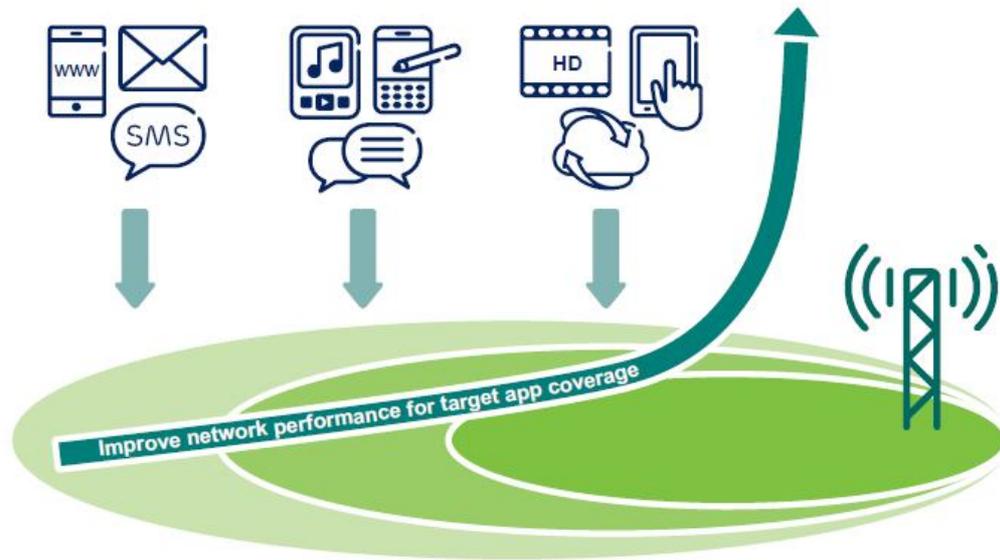


Figure 2: A conceptual view of potential app coverage

Mapping app coverage and the corresponding user experience within the coverage area can be complex. Many factors need to be considered, including the app's distance from either the base station or small cell, along with other factors including the local terrain, the size and composition of buildings, and the interference from other cells or external sources.

The app performance experienced by any given user is also influenced by the number of other active users in the cell and the demands their apps place on the network at any given time.



5 Conclusion

Effective regulation can result in greater economic growth, increased investment, better quality of service and more rapid technological innovation in the sector. Clearer parameters and key performance indicators for the End-User and Subscriber Service Charter, with standardized methods, will go a long way towards increasing regulatory clarity.

High performing mobile networks not only ensure satisfied, loyal customers, but also translate to socio-economic benefits for the citizens. Industry is evolving to the latest advanced technologies such as HSPA+ and LTE that offer more spectral efficiency.

At the same time, operators are “densifying” their radio networks, building more sites, embedding small cells along with integrated WiFi and indoor solutions to boost capacity and coverage. Regulators need to step up to the plate by licensing more frequency spectrum for mobile use.

6 References

- South Africa Connect: South Africa's Broadband Policy (Government Gazette No. 37251 of 22 January 2014)
- Ericsson Whitepaper – App Coverage, Rethinking Network Performance for Smartphones