



**Consultation on “Instruction on the Setting of QoS parameters
and the methodology for the assessment of coverage” –**

Responses Submitted to ictQATAR

Communications Regulatory Authority

6 March 2014

On 22 July 2013, the Regulatory Authority of the Ministry of Information and Communication Technology launched a public consultation on the draft “Instruction on the Setting of QoS parameters and the methodology for the assessment of coverage” and requested written comments from interested parties.

Three responses were submitted by the following parties (listed in alphabetical order):

1. Ooredoo
2. Qbn
3. Vodafone Qatar

As part of the consultation process and in the interest of transparency and public accountability, the Communications Regulatory Authority is herein publishing all the responses submitted.



**OOREDOO RESPONSE TO QUALITY OF SERVICE CONSULTATION
DOCUMENT DATED 12TH SEPTEMBER 2013**

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1. Introduction and Summary

- 1.1 Ooredoo is submitting this document as its response to the Consultation Document entitled “Instruction on the setting of QoS parameters and the methodology for the assessment of coverage” (“the consultation”) issued by the Ministry of Information & Communication Technology and dated 22nd July 2013. Ooredoo is grateful for the opportunity to provide input on this important topic.
- 1.2 As we believe that the implications of the proposals in the consultation are significant and of broad consequence, we have elected to present a comprehensive response that covers the principles and general approach to quality of service, rather than a direct response to the questions posed in the consultation. We believe that this makes our comments on the detail of the consultation clearer. For clarity, we also have provided a summary that relates our comments back to the individual questions posed.
- 1.3 At the highest level, Ooredoo does not see clear logic in the proposals contained in the consultation. Regulatory best practice and, ultimately, legal obligations on the regulator require action to be evidence based. This means that:
 - sufficient market research should be conducted to justify the proposed regulatory measures,
 - the proposed measures should be proportionate to remedying a specific situation or problem and
 - the impact of the proposed measures on the market and market players should be weighed
- 1.4 It is Ooredoo’s contention that the consultation is deficient against each of these criteria.

Firstly, the consultation presents no substantive evidence to suggest that there is a problem that requires a change to the regulatory regime. In particular, there is no proof of customer demand that more stringent quality of service targets need to be achieved.

Secondly, the proposed remedy is not proportionate. The range and level of the quality of service parameters to be applied does not accord with international best practice.

Finally, the cost and effort required to meet the proposed regulation would damage existing operator’s ability to deliver service as well as deterring new operators from entering the market, thereby undermining the Ministries’ strategic objective of promoting competition in Qatar.

- 1.5 Notwithstanding the regulatory aims with respect to quality of service, Ooredoo would challenge the efficacy of the measures proposed. The primary reason for setting performance targets is to provide consumers with reference information on the service they receive. But the sheer number of proposed measures would only

serve to confuse rather than inform. Furthermore the adoption of a measurement regime that is much broader than is in place in other countries would undermine any benchmark comparison.

- 1.6 With regard to the detail of the consultation, there are many aspects of the proposed measurement and reporting regime that are impractical or infeasible. Ooredoo already report against a wide range performance measures and are keen to achieve the most stringent of standards. However, there are measures proposed in the consultation that are simply beyond the capability of any operator, others that are not adequately defined and some that are not under the control of a particular operator, so cannot be reasonably be associated with a binding performance target on that operator.
- 1.7 Beyond the stated QoS measures, the proposals also significantly change the rollout obligations for mobile services, applying targets that do not accord with industry norms and ignoring the well communicated difficulties faced by operators in deploying new radio sites.

2. Basis for consultation

- 2.1 The need for a revised quality of service regime in Qatar, as explained in the introduction to the consultation, is predicated on a number of general statements. Ooredoo believe that several of these statements need to be more clearly defined and substantiated before they are used to justify a significant change to the way in which the telecom market in Qatar works.

The requirement for evidence based regulation is in keeping with one of the basic principles of best practice. Ofcom, frequently rated as one of the leading telecom regulators¹, adhere to the principle of evidence based regulation: one of their seven principles for regulation² is that “Ofcom will strive to ensure its interventions will be evidence-based, proportionate, consistent, accountable and transparent in both deliberation and outcome”.

- 2.2 The opening text of the consultation seems to imply that the Qatar telecom market is moribund and that Ooredoo profits are excessive.

With respect to the first point, we note that the MoICT website features the fact that Qatar is one of the leading networked countries in the world based on the survey results published by the World Economic Forum. It is also cited as being a leader in the region in terms of its ICT development index, in close regional competition with Bahrain and the UAE and is rated in the Global Information Technology Report 2013 as number one among Arabic countries for network readiness. These facts do not suggest that the provision of telecom services in Qatar are in any way inadequate.

The citation of the level of Ooredoo’s profits in from the figure presented in the introduction to the consultation seems spurious. It is evident that these have remained constant since 2008, despite strong growth in both market size, decline in the retail prices and the range of telecom services, a statistic that suggest significant efficiency improvement.

- 2.3 It is stated in the consultation that: *“Further to low competition pressure, these increasing revenues and stable profit margins, supported by one of the highest average revenue per user (ARPU) in the region, imply also comparatively low investments in network roll out and quality of service.”* MoICT has provided no data to support this statement. Moreover, the stated link between high average revenue per user and low network investment and quality of service appears arbitrary with no logical reasoning or data to support the assertions. Ooredoo believe that the lack of logical analysis and supporting data makes the basis of consultation questionable.

The reality is that capex decisions are not driven by ARPU levels, but by the need for coverage and growth prospects. In a prospectively competitive market, higher ARPUs would imply higher network traffic which would require greater capex investment. In other words, causality would actually be opposite to the statements

¹ See: An Assessment of Telecommunications Regulation Performance in the European Union, Afonso, A and Scaglioni, C (available at <https://www.repository.utl.pt/handle/10400.5/2619>)

² See: <http://www.ictregulationtoolkit.org/en/toolkit/notes/PracticeNote/1938>

made in the consultation. A more detailed explanation of this assertion is presented in Annex 1.

- 2.4 The assertion that “full compliance with the QoS parameters mandated in their respective licenses is not achieved” is misleading as Ooredoo’s service quality has steadily improved over time and, of the twenty eight QoS indicators only two are not routinely achieved, even then by a small margin.
- 2.5 Whilst it is true that no communications network is ever perfect and customers invariably have some cause for complaint, there is as much, if not more, evidence to suggest that Qatar is leading the way in both of these instances as there is to the contrary.

The independent survey cited in the consultation have revealed some issues, as would be the case with any audit, but data from the independent reviewer (Directique³) indicates that Qatar compares very well to both regional competitors and international leaders, as shown for example in their call rate set-up and held for 2 minutes analysis:

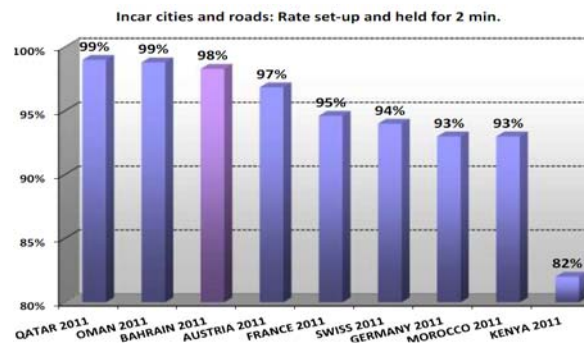


Figure 1 Mobile performance benchmark

Furthermore, independent research (performed by Nielsen, a respected global market research agency) reveals that customer satisfaction with the mobile service of both Ooredoo and Vodafone in Qatar is well above the average across the global markets; the same is true for consumer satisfaction with Ooredoo fixed line services⁴.

- 2.6 The statement that the prevailing quality of service measures applied in Qatar are not in line with the best international standards is not supported with any evidence. In terms of the number of key performance indicators, the current QoS regime is comparable to that of other administrations; Oman, Saudi Arabia and the UAE have similar QoS measures and targets to those mandated in Qatar. Furthermore, many leading countries have a less stringent approach to service quality. In the UAE, for instance, which is comparable to Qatar in terms of market development and is rated as leading technology country in the region, the regulator has defined a straightforward set of measures but sets no targets.

³ Report on Quality of Mobile Services (www.tra.org.bh/en/pdf/QualityofMobileServices2012.pdf)

⁴ See: Ooredoo Response to Regulatory Strategy Consultation, attachment 2, 2013

- 2.7 In studying the QoS regimes from other countries, the current proposals for Qatar does not pass a basic reality check in that the consultation fails to clearly identify the problem it aims to solve.

The mandate for quality of service measures in Bahrain⁵ is based on a set of principles (such as a requirement for comparability) and the addition of specific quality measures (such as one covering throughput at points of interconnect). In India it followed the identification and examination of a specific network problem by the regulator⁶.

As a general rule *“regulators have to know what quality levels could be reached, in what times and at what costs”*.⁷ Furthermore, in following best practice, any measures introduced should be the *“least intrusive regulatory mechanisms to achieve its policy objectives”* and the regulator should *“assess the impact of regulatory action before imposing regulation upon a market”*⁸

- 2.8 Lastly, the observation that license conditions are discriminatory between service providers is valid and Ooredoo would agree that this does not accord with best practice. This is predicated on the belief, discussed in a subsequent section, that quality of service measures should be consumer centric and allow the user to make their choices based on comparable data.

⁵ See: Article 3 of Quality of service regulation, issued by the Bahrain TRA
http://www.tra.org.bh/EN/pdf/Quality_of_Service_Regulation_English_Final.pdf

⁶ See: Report on QoS Parameters related to Congestion on Point of Interconnection
<http://www.trai.gov.in/trai/upload/Reports/2/report17jan06.pdf>

⁷ ITU Background Paper ICT Quality of Service Regulation: Practices and Proposals September 2006

⁸ See: <http://www.ictregulationtoolkit.org/en/toolkit/notes/PracticeNote/1938>

3. Promotion of competition

3.1 In addition to the drivers for change presented in the previous section, a low level of competitive pressure is also referenced as a reason for imposing a more stringent quality of service regime.

3.2 According to MoICT's (previously ictQATAR) Regulatory Strategy: 2013-2016 Consultation Document published on 7 April 2013, one of the Key Strategic Priorities is enhancing the competitive environment as detailed by the following extract:

"Establishing an effective and sustainable competitive environment in Qatar's ICT market is a key priority. As set out in the 2015 National ICT Plan, RA is committed to ensuring that Qatar fosters a legal and regulatory environment that encourages growth and investment. The ICT regulatory framework will be designed to stimulate investment and lower market barriers.

A summary of the proposed actions under this strategic priority is summarised below.

Enhancing the competitive environment

An enhanced competitive environment is a means to improved efficiency and innovation in the market.

RA will address this with the following actions:

- *Introduction of a robust wholesale interconnection and access framework*
- *Introducing new service providers in the telecom market*
- *Reducing the barriers that customers face in switching operators*
- *Reducing barriers to the building of networks"*

3.3 Ooredoo does not believe that the proposals set out in the consultation would promote further competition in Qatar and see the proposed Quality of Service regime as directly contradicting stated policy objectives in several ways:

- Firstly, the proposed use of performance bonds as a penalty regime is appropriate only where the regulator is acting as a proxy for competition. The publication of comparable performance parameters represents the best practice methodology in a competitive environment which MoICT states it is seeking to adopt;
- Secondly, the application of extensive, and in a number of cases excessive, targets for quality of service and rollout parameters increases the barriers to the building of networks, in direct conflict with policy aims stated above.
- Further, the setting of targets that are more stringent than those in most other countries will only serve to stifle innovation in the market. This is because operators would be forced to concentrate on meeting the targets

for the services defined⁹ rather than investing in new products and services.

- 3.4 It is generally accepted that a competitive telecommunications market is better served by ex post, as opposed to ex ante, regulation. The strategic aim of developing the Qatar market through competition will only be inhibited, not enhanced, by the heavy handed proposals for quality of service measurement and reporting.

⁹ As indicated in Table 4 of "ITU BACKGROUND PAPER ICT Quality of Service Regulation: Practices and Proposals September 2006"

4. Principles of service quality measurement

- 4.1 Best practice in regulation is documented by ITU in the ICT regulation toolkit, which provides an authoritative reference to telecom policy and practice¹⁰. With respect to QoS, this states that the fundamental objective in establishing targets and reporting regimes is to ensure that the general public (i.e., the consumer) is well informed and, at the same time, that the operator is not impeded in carrying out their day-to-day operating routines as a result of excessive reporting requirements.
- 4.2 The regulatory goal should be to devise a QoS regime that drives the delivery of acceptable service for the telecommunications user and ensures that consumers are aware of the variations in performance so that they can make an educated choice regarding their service.
- 4.3 Acceptable levels of service are not specified by ITU but can be reasonably taken as the delivered performance in highly rated countries such as Singapore and, in the region, UAE. Ooredoo suggests that the prevailing measures and targets in these countries would set a suitably challenging benchmark for Qatar.
- 4.4 Furthermore, quality of service reporting must be customer centric to bring tangible and/or relevant benefits that are actually of certain value to the end user. If this is not the case, the incremental costs driven by fulfillment of inappropriate quality of service targets is simply a waste of scarce resources, which ultimately acts to the detriment of the end user.
- 4.5 With respect to the range of measures that should be included under appropriate QoS regulation, it is a best practice principle that effective measures are comparable¹¹ to enable them to make informed decisions. Hence there seems to be little point in Qatar having many more measures than any other country if the consumer cannot put them into context by judging them against results elsewhere.

In Singapore, fewer than 20 measures are reported, in the UAE, the number is just over 20 and Saudi Arabia there are fewer than 10 mandated key performance indicators for fixed, mobile and internet service. As a general rule, an operator will be required by their national regulator to measure and report on between 15 and 20 performance targets.

The current proposal, if implemented, would require over 50 operational and performance parameters to be measured and reported. Ooredoo suggest that this excessive: a recipe for consumer confusion.

Finally, irrespective of market conditions or the degree of competition, the reporting and the report analysis process should not be too onerous for either the operator or the regulator. More pointedly, the consumer should benefit from concise and meaningful market information, not be confused by an extensive list of figures that cannot readily be compared.

¹⁰ This reference is published at www.ictregulationtoolkit.org/en/index.html and provides a live resource for regulators, the telecom industry and consumers.

¹¹ See section 2.1 Quality of Service measurement and improvement, Bahrain TRA, http://www.tra.org.bh/en/pdf/quality_of_service_mou_cn_007_v1.1.pdf

5. Regulatory strategy

- 5.1 One of the aims stated in the recently published consultation on regulatory strategy¹² is to improve the clarity and predictability of the regulatory framework. To this end, Ooredoo would welcome the adoption by the Ministry of the bias against intervention applied by Ofcom, which is quoted on page 36 of the consultation document: *"interventions will be evidence-based, proportionate, consistent, accountable and transparent in both deliberation and outcome"* and *"always seek the least intrusive regulatory mechanisms to achieve its policy objectives"*
- 5.2 Ooredoo is unequivocal in its support for measures that safeguard consumers and would support initiatives that would require the Ministry to monitor QoS and publish material for the use of consumers. It would be essential, however, that parameters for measurement are clearly and closely defined and of practical use to consumers. The latter may be determined by regular surveys of consumers to determine perceptions of service quality.
- 5.3 Furthermore, it is the end user requirements not regulator's ones that have to be satisfied in order to justify investment (i.e. investment must generate corresponding market value). Regulation in the sector should be concerned primarily with the efficient use of resources. Particularly those that are scarce.
- 5.4 In the short-term, Ooredoo is clear that to achieve any significant improvement in the QoS of existing services the most important factor would be to remove present impediments to the efficient deployment of infrastructure. Both Ooredoo and Vodafone Qatar suffer from difficulties in acquiring mobile sites and both have partially addressed this problem through the use of Cells on Wheel ("CoWs"). These have been deployed by both operators at a level far higher than any other market in the world. Continuing proliferation of CoWs and, more pointedly, the planning and permission problems that drive their proliferation does little encourage network development.

Across nine markets in which Ooredoo operates, the number of CoW's in its mobile network in Qatar is largest, despite the fact that Qatar is one of Ooredoo's smallest networks (in terms of numbers of cells). While on average CoW's represent less than 1% of mobile sites across all Ooredoo's networks, CoW's installed in Qatar represent more than 10% of total radio base stations.

While Ooredoo lacks specific information on Vodafone's Qatar's network, it is our understanding that it has an even greater number of CoWs in place in Qatar than Ooredoo.

- 5.5 In keeping with the regulatory strategy, Ooredoo urges the Ministry to operate within consumer-centric policies and to determine its actions with due regard to the views and satisfaction levels of consumers and prevailing circumstances in Qatar, rather than to seek to fill what it perceives to be 'regulatory gaps' arising only from a benchmarking initiative related to other jurisdictions, which can have only limited relevance for Qatari consumers.

¹² Ministry of ICT, Regulatory Strategy 2013-2016, issued 7th April 2013, reference ICTRA 2013/04/07



The high level of prescription within the current quality of service consultation is in keeping with ex-ante regulation rather than the ex post form of regulation that is adopted to encourage growth and competition in the national telecom market.

6. Impact of proposed regime

- 6.1 As already explained, Ooredoo would contend that the proposals in the consultation are not in keeping with accepted best practice in many areas.
- 6.2 A repeating theme published from authoritative references such as the ITU¹³ affirms that any quality of service measurements made should be important to customers, practical for operators and comparable between operators. In particular, they should concentrate on few, key aspects of service. There is no evidence in the consultation that the proposed regime would meet any of these goals.
- 6.3 One of the consequences of the proposed measurement and reporting regime, if implemented would be that it would confuse consumers. There is no evidence that the amount of information that would have to be provided would help consumers to make more informed choices nor that it would give a succinct picture of the performance of a particular operator.
- 6.4 The prospect of a draconian measurement and reporting regime would inevitably deter network investment in Qatar. Not only would investment have to be diverted from new products and services to meet QoS obligations but also, the prospect of having to take on such a wide array of measures would only deter new entrants to the market.
- 6.5 This is reinforced in the penultimate sentence of the introduction to the consultation which states "parameters may be extended to other Service Providers (e.g.: class licenses, satellites) and/or new QoS parameters may be defined, in future, as and when appropriate". The uncertainty implied here also presents a negative factor in the attraction of new entrants to the market.

¹³ For example, see ICT Quality of Service Regulation: Practices and Proposals, presented at ITU Global Seminar on Quality of Service and Consumer Protection, Geneva, Switzerland, 31 August-1 September 2006

7. Unrealistic targets

General observations

- 7.1 Ooredoo believe that the measures and performance targets proposed in the consultation are not well enough developed to be applied as they are currently defined.
- 7.2 In some cases, the targets for existing measures are made more stringent and in many others completely new measures and targets are introduced. It is Ooredoo's view that many of the proposed targets are too demanding when compared with those mandated in other administrations, as illustrated in the table below:

Target	Qatar (proposed)	KSA	Oman	Singapore	India	Malaysia
Broadband connection	100% in 9 days	90% in 10 days	90% in 10 days	For monitoring; OpenNet: 100% in 7 days	100% in 7 days	80% in 24 hr 90% in 48 hr 100% in 7 days
Fault repair time	90% in 24 hr	90% in 24 hr	90% in 24 hr	90% in 24 hr; 99.9% in 72 hr	90% in 24 hours	80% in 24 hr 90% in 48 hr
Successful call rate (mobile)	99%	98%	98.9%	2G: Monitor 3G: 99%	95%	Less 1% encounter busy
Call drop (mobile)	0.5%	2%	0.8%	For monitoring	2%	5%
MOS	4	3.5	-	-	3.4	-

Table 1 Quality of service targets in other countries

This does not mean that Ooredoo object to a tightening of performance indicators or to all of the measures and targets in the consultation. Indeed, in many cases the proposed targets are viable, if challenging, and Ooredoo welcomes that challenge to improve.

However, many of the quality of service requirements listed in Annex 2 of the consultation are beyond normal expectation: experience shows that the level of achievement in the best regional networks falls short of the proposed targets for Qatar, as illustrated in the table below.

Target	Qatar (proposed)	UAE actual	Bahrain actual	Oman actual
Successful call rate (mobile)	99%	Av. 97.46%	94-98%	95.7-98%
MOS	4	98.58% calls > 2.8	94.1% = 4	3.47

Table 2 Achieved quality of service in other countries

In these cases, it may be possible to meet the requirements set out in the consultation but the cost of doing so would be considerable. Without proven justification of the need for such stringent quality of service targets, the investment

required achieve them would be wasted: potential new products and services would not be developed because funds are diverted to the satisfaction of requirements for which no firm basis is established.

Specific observations

- 7.3 A full analysis of the practicality of each of the measures and targets proposed in the consultation document is given in Annex 2 of this response. This shows, for each measure, the current obligation (where appropriate), the proposed obligation and Ooredoo's comments on viability.
- 7.4 Some of the proposed requirements are simply not practically achievable. For instance the target of under 4 second for the set up of an international call (see Annex 2, section 1.2) is not achievable as SPs in Qatar have control over only part of the call: termination relies on a remote operator. Even with perfect routing across Qatar to the edge of the Ooredoo network an average call set up time of less than 5 second is not viable, according to guidance published by the authority on international transit, the ITU.¹⁴
- 7.5 Some of the proposed requirements fail to recognize the nature of the service that is being monitored. This is exemplified in the network quality target for mobile services (see Annex 2, section 2.1). In this instance, the definition of the target is predicated on each individual cell in the overall network exceeding the minimum acceptable performance level for either the dropped call rate or the call set up success rate.

With traffic unevenly distributed over any network (particularly a mobile network), there are some cells with little traffic that will fail to meet either the dropped call or the call set up success targets despite having few actual outages. Other, more heavily loaded cells will meet both targets though they experience more actual outages.

Hence it is possible to miss the network availability target whilst experiencing fewer actual problems. The way in which this measure is defined places focus on less critical, peripheral network elements rather than on the central network elements that carry more traffic and so support more consumers.

Ooredoo suggest that an effective measure of network availability should account for variation in traffic loading and not allow singular events to unduly influence results or incentivize resource allocation that is actually to the detriment of customer.

One further point on this particular measure is that the consultation proposes to abandon its restriction to measurement of the 2G network only. With 3G and later network services fundamentally different from those on 2G (which is predominantly a voice service), it is important that the measure is defined appropriately. For instance, it should take into account the fact that, in a 3G network, some channels are allocated for data and others for voice. Clearly, the definition of network quality needs to discriminate which service is subject to measurement..

¹⁴ See 'Benchmarked Key Performance Indicators', presented at the ITU-T Workshop on Delivering Good Quality Telecommunication Service, Nairobi, 2010.

- 7.6 Some of the proposed requirements are beyond the capabilities of existing technology. For instance, the requirement for all mobile calls to be set up in under 5 seconds (see Annex 2, section 2.2) is not achievable with current mobile network elements. A target of at least 6 seconds would be more practical for both 2G and 3G service and a less stringent target should be applied for 4G services. In both cases, the measure should apply only for calls that originate and terminate on the same operators network.

An additional observation on this proposed measure is that the definition does not exclude failed calls. Clearly these should be excluded from the measure as they are accounted for elsewhere. Furthermore, it is unrealistic to mandate the measure for 100% of calls.

- 7.7 Some of the proposed requirements seem to be contradictory. For example, the proposed target of 99% for call set up success rate (see Annex 2, section 2.2) implies that blocking has to be below 1%. It is not clear in the consultation that related targets are consistent.
- 7.8 Some of the proposed requirements are irrelevant. If targets are set for both blocking and availability in a broadband network, there seems little purpose in setting a target for bandwidth utilization (see Annex 2, section 1.4). As defined, the measure has no impact on users.
- 7.9 Ooredoo would suggest that the imposition of over fifty QoS measures, many of which are as stringent as, or in excess of, the most demanding of targets and are beyond the capability of well established operators to deliver, is unreasonable (see tables 1 and 2 above).
- 7.10 In particular, the newly introduced Mobile broadband target for data rate is set in excess of the fixed broadband requirement and fails to consider the nature of the mobile service where contention is not under the control of the operator, so cannot be assured. Furthermore, some of the other measures described in the consultation do not appear to be under the control of the service provider. For instance several of the measures related to internet service depend on other parties (internet exchanges, content providers etc), so it seem inappropriate to impose target in these cases.

A few of the proposed measures are simply impractical (i.e. those that require 100% conformance, which can only routinely trigger sanctions, or second guess targets already set in Service Level Agreements).

Related observations

- 7.11 Before trying to implement wholesale change, Ooredoo would support an initiative by MoICT to improve service quality and assist consumers in making more informed choices by taking the following actions:
- Revising and correcting the definitions of the QoS measures and targets in the relevant licenses to make them more directly comparable with other markets.

- Commencing an effort to regularly survey customers in Qatar, in order to develop a better understanding of the perceptions of service quality and the areas in which improvement would be appreciated.
- Making quality of service information available to the public, as it is in other leading countries such as Singapore.

Ooredoo suggest that the current quality of service regime is as challenging as any and could, with well considered modification, be adapted to meet Qatar's strategic vision.

- 7.12 In all cases, it is important to establish a firm and clear basis for measurement before setting targets. It is not reasonable to import performance targets from other countries and then apply a measurement definition which, in some cases, completely changes the practicality of that target. Nor is it necessary to set targets against all defined measures (and particularly not for those over which an SP has no end to end control).

8. Motivation to improve

- 8.1 The proposals set out in the consultation extend the use of Performance Bonds as guarantees for QoS parameters. Previously, these had only been applied to “Secured Obligations” that take the form of milestones in relation to rollout obligations, rather than on-going commitments.

MoICT have previously indicated that performance bonds would only be used for certain specific spectrum evacuation and coverage obligations relevant during license issuance. In the proposed form, Ooredoo would be subject to Performance Bonds of many millions of QAR on an annual basis. We are not currently aware of any other regime where such an approach has been applied.

- 8.2 Ooredoo is particularly concerned that the approach set out in the consultation does not allow for graduation of penalties, as would be the case for an effective sanction regime. The recently issued Regulatory Strategy accords with the Ooredoo view with its inclusion of “plans to introduce powers for the Regulatory Authority to impose graduated sanctions”
- 8.3 The sanctions regime set out in the consultation introduces the potential for unintended consequence into service provision.

Virtually all telecom operators deliver a number of different services to the consumer. Some of these would be critical while others would be more peripheral. If a heavy penalty is applied when any service falls below a defined threshold (i.e. a mandated quality of service target is missed) the rational reaction of the supplier is to concentrate on the supply of those services that can still be delivered to meet their performance targets. In this instance, the sanctions regime promotes focus on one (possibly peripheral) service leaving another (possibly a critical network service) to be overlooked, at least during the reporting period.

A sanctions regime that leads to this unintended consequence is generally referred to as a ‘wall of death’ and is patently ineffective¹⁵.

- 8.4 Ultimately, it should be the consumer who reaps the benefits from the enforcement of quality of service regulations. In certain instances an operator may opt to run the risk of incurring a penalty instead of investing to improve service quality. The imposition of monetary fines on the operator for failing a performance target set by the regulator does not result in any direct benefit to consumers. However, the consumer may benefit directly if the penalty for violating quality standards is, for example, to provide consumers with services free of charge, to give the consumer retroactive rebates as compensation for the poor service or to move them up to the top of a waiting list for the provision of services.
- 8.5 In summary, the sanctions regime proposed in the consultation is inappropriate, does not motivate quality improvement and is not consumer centric.

¹⁵ The Problem with Service Level Agreements, Journal of the Institute of Telecom Professionals, 4, 3, 2010.

9. Escalation of Coverage Obligation

- 9.1 The element of the consultation titled “*methodology for the assessment of coverage*” implies that the proposals simply seek to modify the way in which coverage is measured. In actuality, the proposals significantly increase the coverage obligation imposed on operators beyond the limits that were set at licence award. Clearly this has extremely significant cost implications and so should be subject to the most rigorous of scrutiny and justification before it is contemplated further.
- 9.2 The proposed increase from:
- “The minimum signal strength required to qualify for achieving coverage is -51dB μ V/m (or -85 dBm) at \geq 95% of locations within any outdoor area of 100m x 100m at a height of 1.5m above ground level.
- to:
- Coverage shall be assessed: Within any outdoor area of 30m x 30m; Minimum Signal Strength Cities, Towns and villages (A) -85dBm indoor & -75dBm outdoor; All other Zones (B) -85dBm outdoor.
- 9.3 No reasoned or evidence based justification is given in the consultation for the proposed change in required signal levels, which are considerably more stringent than those set in other, leading countries. In Singapore, for example, a 3G signal level of -100dBm is the prescribed target for 99% of outdoor locations.
- 9.4 In addition to the significant increase in the required signal strength in the Cities Towns and Villages, the implied requirement for coverage of 100% of locations is unrealistic to achieve. Again, as indicated above, normal expectation is that the required signal strength will be met across most, but not all, of the national geography. It is accepted practice that different coverage requirements are set for roads, towns/cities etc.
- 9.5 In addition, the reduction of coverage area is unrealistic and beyond current best practice: It is possible to assess coverage over an area of 30m x 30m from a planning tool but not with drive tests.
- 9.6 It is clear MoICT intends to increase the rollout obligation through this measure, but this approach fails to consider the difficulties licensed operators have in obtaining new radio sites required to meet them. These issues have been repeatedly raised with MoICT, including in the consultation response to the recent Strategy consultation and Radio Spectrum Fees consultation.
- 9.7 The requirements for mobile service set out in Annex 2 of the consultation document would require the Ooredoo network to achieve a minimum outdoor signal strength of -75dBm in cities, towns and villages as well as a minimum indoor signal strength of -85dBm across the country. Achievement of this requirement would imply significant upgrade of the network, at substantial cost, for an uncertain and unquantified benefit and again ignoring the well communicated issues operators are experiencing with securing radio sites. Critically, it fails to account for the variation in wide variation in penetration losses that determine the level of indoor signal strength.

- 9.8 Ooredoo suggest that a more tractable approach to ensuring good radio coverage is to make a reasonable allowance for penetration loss and set a figure for outdoor signal strength that is in keeping. Hence it would be more reasonable to set a target outdoor signal strength of -75dBm which, with a typical 10dB penetration loss, would meet the Ministry's aim of providing indoor signal strength of -85dBm. The achievement of a uniform indoor signal strength target is not practical and there is no clear justification for its imposition
- 9.9 The Ooredoo position on the above issues is:
- that more evidence should be produced to justify an extremely costly and possibly disruptive change to national telecom networks
 - that it is unreasonable to guarantee indoor signal strength: established practice is to provide adequate outdoor signal strength to ensure indoor cover in most circumstances.
 - that an escalation of coverage requirements would be unreasonable if one of the basic facilities for its provision (i.e. rooftop antennae) was to be no longer permitted.
 - as already communicated to the Ministry¹⁶, Ooredoo regards the grant of building permission as a central enabler of mobile network improvement and impediments in this regard is a key inhibitor of development.
- 9.10 Ooredoo is keen to ensure that subscribers across the whole of Qatar can access their mobile services but see little justification in the consultation for the proposed revision of network coverage.

¹⁶ See the Ooredoo response to Questions 10 and 11 of the ictQatar consultation on Regulatory Strategy 2013-2016 (April 2013), which addresses a range of issues including Acquisition of rights to government land, Permit Approval, Access to private developments and In-building infrastructure

10. Ooredoo responses to specific questions listed in the consultation document

Ooredoo note that questions 2 and 5 from the consultation are identical and that the reference to section 2.7 in questions 2, 3 and 5 is invalid. Hence we have provided responses to four of the five questions listed and have assumed that the QoS parameters for comment (referenced as section 2.7) are actually those in Annex 1 of the consultation.

Question 1: Do you support Ministry of Information and Communication Technology's initiative of extending the scope of the existing QoS requirements, which are set out in the various licenses, to reflect recent advancements in telecommunications technologies and services and to improve the quality of the telecom services offered to customers in Qatar?

Ooredoo would support any initiative from the regulator that improves the consumer experience of telecommunications services in Qatar and would expect any proposals pursuant to that aim to be based on sound evidence and reasoned argument. The proposals in this consultation fall short of this: as there is no indication of consumer demand for specific quality improvement and no sound rationale for the particular measures proposed.

It is certainly the case that technology moves on to allow new services to be offered but the consumer invariably has a few, key concerns: how quickly they receive service, how reliable that service is, how quickly problems are dealt with. The current quality of service regime covers these issues and, with minor amendment could be adapted to address the latest technology. It is suggested that the known issues in achieving existing performance targets are dealt with before embarking on a more expansive scheme.

Question 2: In addition to the QoS parameters set out in the above tables in Section 2.7, are there any other parameters that should also be included in the QoS requirements? Please support your proposals with justification

Far from suggesting more parameters, Ooredoo would strongly counsel that fewer are measured. Most developed countries require telecom operators to report on a few, critical aspects of service rather than produce an extensive array of figures. There is no precedent for the number of service quality parameters proposed in the consultation and Ooredoo believe that such an extensive measurement and reporting regime would only serve to confuse, not inform.

Question 3: Are there any specific comments about the descriptions, measurement methods, and the minimum acceptable performance levels of the QoS parameters as set out in Section 2.7 above? Please support your comments with justification

Annex 2 of this document provides specific comment against each of the proposed parameters and targets in the consultation. As a general comment, Ooredoo feel that the specification of many measures is too vague, making it difficult to comment on the proposed level of the associated targets. Furthermore, several of the proposed measure seem to be out of line with accepted best practice and, in some cases, with practical achievability.

Question 4: Comments are invited on the proposed timeframes for compliance with the QoS requirements

The implications of some of the proposals in the consultation are far reaching. In particular, the revision of coverage requirement is, in effect, a national network redesign. Clearly such an undertaking cannot readily be assessed without extensive study. At a more detailed level, some of the proposed measures in the consultation would require new network or monitoring equipment to be installed, commissioned and integrated. This too would require detailed study against firm and clear requirements.

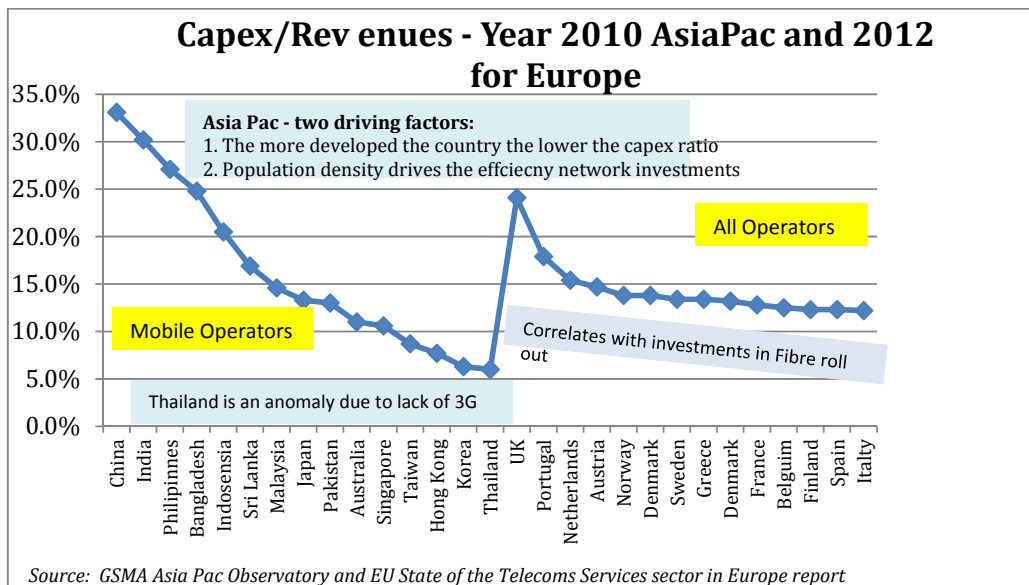
11. Annex 1: Capex and ARPU

The capital investment by any telecom operator will change over time. This investment will be driven by a range of factors and will include amongst others:

1. Technology refresh decisions
2. Fibre roll-out options
3. The expectation of growth in demand of services from customers
4. The degree to which efficiencies can be realised within the operations
5. Advances in technology
6. More efficient use of established technology

In practice, capital investment will be discrete rather than smooth – what this means is that where investment may be made in one year for increased capacity, its utilisation will be relevant for a number of years and no further investment may be required for a few years until that investment has been fully utilised (i.e. investment is not directly correlated with demand).

The figure below shows some typical capital investment profiles:



Generally we see mature markets have a lower capex / revenue ratio than developing markets, which is mainly driven by higher GDP per capita and hence higher ARPUs.

Qatar is one of the wealthiest countries in terms of GDP per capita. This reflects in the higher ARPUs that are seen in the country, which has the effect of reducing the capex to revenue ratio.

12. Annex 2: Comments on Individual QoS requirements

1 Fixed Services

1.1 Fixed services- General requirements

QoS parameters	Description	Minimum acceptable performance level		Current Obligation	Comment
Supply time for initial telephone line and/or Broadband connection	<p>Supply time is the duration from the instant of a valid service order being received by the service providers to the instant a working service is made available for use.</p> <p>A service order shall be considered to be a valid order when the service provider accepts it and confirms this to the applicant.</p> <p>Installation shall be considered completed when service provider’s engineers report that the working service has been provisioned.</p>	within 5 calendar days	99%	95%	<p>The proposed targets are challenging and are in excess of established benchmarks.</p> <p>In particular, the requirement for 100% achievement is virtually impossible as there will always be a proportion of installations that are exceptional and so fall outside the target time.</p> <p>The definition of target in terms of calendar days is also problematic as installation staff cannot (under Labor Law) be expected to work on Friday or public holiday</p> <p>The current obligation is already more stringent than regional targets (e.g. in Saudi Arabia, Oman)</p>
		within 9 calendar days	100%	99%	
Daily faults rate	<p>Daily Fault rate is the percentage of fault reports within a day reported per access line on a monthly basis.</p> <p>A fault report is a report of disrupted or degraded service that is made by a customer and is attributable to the network of the service provider or any interconnected public</p>	< 0.5%		<0.5%	This target is already in keeping with the most stringent targets applied in other countries.

	network, and that is not found to be invalid. Faults in any equipment on the customer side of the network termination point are excluded.				
Availability of Access Network	<p>This measures the availability of the distribution circuits from the exchange to the distribution point, including the fibre, copper, access multiplexers and any other access equipment where applicable.</p> <p>Measurement method: {Sum [Per distribution circuit in-service minutes in a month] / (per distribution circuit in-service minutes in a month + per distribution circuit out-service minutes in a month)} x 100%</p>	99.85%	99.8%		<p>The target set against this measure is at the most demanding level when compared to other countries, though the definition of the measure could be clearer.</p> <p>Ooredoo note that the availability of access network is either monitored without target or not measured at all in most other countries.</p>
Fault repair time	<p>Time to repair a service from the time the service providers receives a valid notification from the customer Fault repair time is the duration from the instant a fault has been notified by the customer to the published point of contact of the service provider to the instant when the service element or service has been restored to normal working order.</p> <p>Cases where:</p> <ul style="list-style-type: none"> - repair depends upon access to the customer premises and this access is not possible at the desired time; or - the customer requests a 	Within 24 hours	90%	90%	<p>These targets are in line with the most demanding international standards but are effectively more challenging due to the way in which the targets are defined because the specification of calendar days overlooks the fact that field engineers cannot (under Labor Law) be expected to work on Friday or public holiday</p>
		Within 72 hours	99.9%	99%	

	delay, may be excluded from the statistics. When calculating the repair time, service providers who choose to include these cases may subtract from the measured time the delay introduced by the customer. All calendar days (including Fridays and public holidays) must be included in the calculation.				
	Due to the specific nature of Emergency Services, Time to repair from the time the service providers receives a valid notification from the customer.	1 hour	98%	New requirement	The definition of this measure is not clear enough to comment on.
	Services to Enterprises/SME: when a SLA is provided by the SP	Within the time frame specified in the SLA	99.5%	New requirement	Most SLA set a target for % achievement with a specified time. This measure appears to set another percentage over the SLA percentage, making the reason for the measure difficult to understand and its meaning obscure.

1.2 Fixed Services - Voice

Successful call ratio	Ratio of successful calls to the total number of call attempts in a specified time period.	national	99%	99%	This target is already in keep with best international practice
	Calls that are successful are defined as “either busy tone, ringing tone, answer and feedback signals within 30s”	international	95%	95%	This target is already in keep with best international practice
Call setup time	The call set-up time (measured as mean value in seconds) is the period starting when the address information required for setting up a call is received by the network and finishing when the called party busy tone	national	< 3s	Monitor only	Ooredoo are confident that they can achieve the stated target but would question the need to measure all calls. It is suggested that a more reasonable

	or ringing tone or answer signal is received by the calling party.				definition of this measure would be to use test calls with a pre-defined sample.
		international	< 4s		The proposed target is not statistically achievable as SPs in Qatar have control over only part of the call: termination relies on a remote operator. Even with perfect routing across Qatar to the edge of the Ooredoo network an average call set up time of less than 5 second is not viable, according to ITU guidance. In addition the same comments on call sampling, as above, apply
Availability of telephone exchange equipment	The telephone exchange equipment is unavailable when there are exchange faults such as those related to switching or transmission. Availability calculation is based on inputs obtained from all switches (PSTN and International). Outage time includes software and hardware faults. Measurement method: {Sum [(Per switch in-service minutes in a month) / (per switch in-service minutes in a month + per switch out-service minutes in a month)]} x 100%	99.99%		99.99%	No specific comments
Call drop rate	Percentage of calls dropped measured over a period of one month	0.5%		New requirement	The proposed target is extremely aggressive when compared with requirements across the region (e.g. call drop rate is set at 2% in

				Saudi Arabia). Ooredoo believe that this target is not achievable.
Voice quality (MOS)	Mean Opinion Score.	4	New requirement	The target for this measure is challenging. It is assumed that the MOS would be assessed from subjective rating of test calls.

1.3 Fixed Services – Broadband

End to End network availability	<p>The measure of the degree to which the end-to-end broadband network is operable and not in a state of failure or outage at any point of time. It measures the total downtime of the network (including the access, DSLAM and switches, multiplexers, routers, and connection to the Internet backbone over a month.</p> <p>Network Availability = (Total operational minutes – Total minutes of service downtime) x 100% Total operational minutes.</p> <p>Note: All scheduled downtime for the purposes of maintenance and upgrading of the network system will be excluded from the calculation. However, all broadband providers must keep their users informed of such maintenance times. Please note that reported downtime should include any downtime caused by upstream service providers.</p>	99.85%	99.8%	This is a challenging target but one that Ooredoo agree as key in the delivery of high quality broadband service.
Network Latency	Round-trip delay (in ms) in the relevant segment of the broadband network (measured	80ms	85ms	The revised target of 80ms to reach international gateway is

	<p>by PINGs):</p> <ul style="list-style-type: none"> • From the broadband user to the international gateway. • From the ISP to the nearest international NAP port (Terrestrial); • From the ISP to the nearest international NAP port (Terrestrial); <p>The target, in “x msec”, represents the maximum network latency (for round-trip) experienced by end-users for 95% of the time during peak hours.</p> <p>Note: PING packets are ICMP echo requests, which are 32 bytes in size for MS DOS and 56 data bytes for UNIX/MAC. PING will be performed between two pre-determined points in the network.</p>	<p>≤300ms</p>	To be monitored	<p>reasonable.</p> <p>The new target for terrestrial access to international NAP port is does not apply in Qatar as all access is via submarine cable</p> <p>The final definition is assumed to refer to the farthest (not nearest) international NAP port? If this is the case, the location of the farthest port will vary over time, so the setting of a target seems inappropriate.</p>
		<p>≤800ms</p>	To be monitored	
Bandwidth utilization	<p>Highest Bandwidth Utilization = (peak utilization level in each segment) / (total bandwidth available for that segment).</p> <p>Bandwidth utilization from the service provider Point of Presence (PoP) to the internet gateway of the “upstream service provider”</p> <p>Broadband providers are required to run “Monthly” MRTG Graphs to obtain average bandwidth utilization for each month for every segment.</p>	<p>Maximum 85% for more than 2 consecutive months</p>	New requirement	<p>The definition of this measure does not appear to be logical – surely the 85% target should be associated with a 3 month duration and the 90% target with a 2 month duration.</p>
		<p>Maximum 90% for more than 3 consecutive months</p>	Maximum 90% for more than 3 consecutive months	<p>In both cases, it surely does not make sense to measure individual links but rather to aggregate utilization of all network links.</p>
Speed / data	<p>This measures the actual speeds that are advertised or offered in</p>	<p>90% of the advertised speed</p>	New	<p>The definition of this proposed</p>

rate	terms of an approved tariff and advertised or offered by the service provider. This measurement should be the speed received even at peak time and everywhere (inside or outside). The measurement shall include traffic to and from both Local and International servers.	and according to the tariff filing, all the time and everywhere		requirement	<p>measure is not clear.</p> <p>It would not be feasible to measure the data rate of all consumers so it is suggested that the definition be revised to specify a sample measure that adequately reflects service quality as perceived by the end user.</p> <p>There are two further caveats on this measure. First, it is only possible for an SP to measure the elements under their control. Second, results will inevitably vary with net usage by the end user as this determines the required data rate.</p>
Minimum speed offered	<p>Access to at least 100Mbit/s effective download and 50Mbit/s effective upload speeds</p> <p>Businesses, schools, hospitals and government institutions to have access to at least 1Gbit/s effective symmetrical speeds</p> <p>Note: to be adapted according to Qatar National Broadband Plan</p>	<p>95% of households by 2015</p> <p>98% by 2015</p>		256kbps	<p>It is assumed that this measure applies only to fibre connections.</p> <p>Ooredoo also question whether an obligation on Q.NBN should necessarily be applied to operators</p>
Web browsing successful connection	Time elapsed from the instant of requesting a connection to a website until the content of the website starts downloading.	within 10 sec.	98%	New requirement	It would not be feasible to monitor all web sessions. It is suggested that a reasonable sample
		within	99.99%		

		20 sec.			<p>size is included in the definition.</p> <p>Also, SP does not have end to end control over this service so cannot guarantee a prescribed service level. It is more realistic to require this service to be monitored only</p>
Successful data transfer (uplink and downlink)	Actual data transfer at the offered speed or in terms of the approved tariff.	99.8%		New requirement	<p>It would not be feasible to monitor all links. It is suggested that a reasonable sample size is included in the definition.</p> <p>Also, data transfer speed varies with consumer activity and the SP does not have end to end control over this service so cannot guarantee a prescribed service level. It is more realistic to require this service to be monitored only</p>
Successful downloaded pages at the advertised speed	Percentage of successful downloads with data rates equal to or greater than 80% of the speeds mentioned in the tariff filing.	99.8%		New requirement	<p>It would not be feasible to monitor all downloads. It is suggested that a reasonable sample size is included in the definition.</p> <p>Also, data transfer speed varies with consumer activity and the SP does not have end to end control over</p>

				this service so cannot guarantee a prescribed service level. It is more realistic to require this service to be monitored only
Video Streaming (End to End Quality rate)	Percentage of successful access to a 10 mn video	99.8%	New requirement	The same comments apply as per the two measures above. In addition, there is a degree of subjectivity in this proposed measure.
	Percentage of successful streaming (non-dropped sequences) of a 10 mn video without interruption	99.95%	New requirement	
	Percentage of good quality streaming of a 10 mn video without buffering/pixels/freezing and /or any distorted images.	99.9%	New requirement	

1.4 Fixed Services – Leased lines

QoS parameters	Description	Minimum acceptable performance level		Current Obligation	Comment
Supply time	Percentage of leased circuits provided within the timeline agreed with the client. Applies to local, national and international leased lines. Measurement method: ([Total no. of leased circuits provided within date agreed with customers] / [Total no. of leased circuits required]) x 100%	within 5 calendar days	95%	≥95% for local and national To be monitored for International	It should be noted that supply time can be affected by things outside of SP control (such as site not ready, power, termination and other customer or supplier related issues). The target definition should recognise this. Also, any target of 100% will inevitably be failed at some point.
		within 20 calendar days	100%		
		Civil work needed: 60 calendar days	95%		
Daily Faults	Daily Fault rate is the percentage of fault	< 0.5%		New	No specific

rate	<p>reports within a day reported per access line on a monthly basis.</p> <p>A fault report is a report of disrupted or degraded service that is made by a customer and is attributable to the network of the service provider or any interconnected public network, and that is not found to be invalid. Faults in any equipment on the customer side of the network termination point are excluded.</p>			requirement	comments
Fault repair time	<p>This is the time to repair and shall be calculated from the time the fault is reported by the customer to the service provider.</p> <p>Measurement method: Total number of hours taken to repair faults for all leased circuits] / [Total number of leased circuit faults reported]</p>	24 hours	99%	≤4 hrs for local and national	<p>No specific comment, though the target for international fault repair is not necessarily under the control of Ooredoo so the definition should be revised to reflect this.</p>
		72 hours	99.9%	To be monitored for International	
Service availability	<p>Percentage of all hours (or portion thereof) of a month for which a specific leased line is available.</p> <p>$SA = \{(A - B) / A\} * 100$</p> <p>Where</p> <p>A= Total number of hours of the month</p> <p>B=Total hours of outage in a month for a specific</p>	99.9%		<p>99.7% for local and national</p> <p>To be monitored for International</p>	<p>The revised target seems reasonable and is in line with international best practice.</p>

	leased line.			
Availability of Access Network	<p>This measures the availability of the distribution circuits from the exchange to the distribution point, including the fibre, copper, access multiplexers and any other access equipment where applicable.</p> <p>Measurement method: $\{ \text{Sum [Per distribution circuit inservice minutes in a month]} / (\text{per distribution circuit inservice minutes in a month} + \text{per distribution circuit outservice minutes in a month}) \} \times 100\%$</p>	99.95%	New requirement	<p>It is not clear why this measure is required as it does not appear to add value not already achieved through the measure of service availability.</p> <p>Access network availability is not measured or reported in comparable administrations such as Singapore or EU.</p>
Agreed bandwidth	Percentage of the committed speed according to the filing all the time and everywhere.	95%	New requirement	<p>This validity of this measure is questionable as the bandwidth used by the consumer is set by their applications and does not relate to committed speed. Furthermore, this target it implies intrusive monitoring of customer</p>

1.5 Fixed services – Specific passive services

QoS parameters	Description	Minimum acceptable performance level	Current Obligation	Comment
Service Supply	Percentage of end to end connections (which excludes	90%	New	No specific

Time (SST)	the in-building connection at a customer's premise for PON) achieved within 10 working days of receipt of a valid order or by the date agreed with the customer for point to point connections.		requirement	comment
Mean Time to Restore (MTTR)	<p>Average time to restore service for all affected connections in all fault incidents, within a specific service measured from the time each fault is reported till all the service restored.</p> <p>The MTTR is calculated as follows: $\Sigma X / Y$</p> <p>Where:</p> <p>X = time taken to restore fault incidents for each connection of a specific service during a quarter</p> <p>Y= total number of affected connections in the same period.</p> <p>This excludes fault incidents where the Service Provider is prevented or restricted from restoring the service owing to matters that are not within the Service Provider's control.</p>	24 hours	New requirement	It is not clear what this measure adds as it is a constituent part of availability - longer repair times correlate directly with lower availability).
Service Availability (SA)	Percentage of total time in a month for which the passive network is available. This excludes fault incidents where the Service Provider is prevented or restricted from restoring the service owing to matters that are not within the Service Provider's responsibilities	<p>Alternative:</p> <p>$\geq 99.8\%$</p> <p>OR</p> <p>Remove the SA parameter for passive fixed services QoS requirements</p>	New requirement	No specific comment

	$SA = \{(A - B) / A\} * 100$ <p>Where:</p> <p>A= total hours of the month * the total number of connections in the network</p> <p>B= total service outage time for the all affected connections in the same month (in hours).</p>			
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2 Mobile Services

2.1 Mobile services - General requirements

QoS parameters	Description	Minimum acceptable performance level	Current Obligation	Comment
Network Quality	This measures the proportion of the network over which performance is deemed to be adequate during busy periods. It is defined as the “number of cells with 0.5% (current 1.5%) or lower dropped call rate and a call set up success rate of 99% (current 95%) or higher divided by the total number of operational cells”. Currently 2G only.	≥98.5%	≥95.0%	<p>Ooredoo question the basis for this measure, which applies at a cell level rather the more meaningful network level.</p> <p>The proposed target is not achievable when associated with the given definition. Even when associated with a network level definition (which takes into account the variance in call rates across a mobile network), the target is at the upper limit of best practice and beyond normal achievement</p> <p>As defined, performance is measured through CSSR and DCR indicators and this indicator has limitation: (1) a list of cells that should be included in the evaluation, according to operator layering strategy between</p>

				<p>carriers as some cells will be prioritized for voice traffic and other for data services. The inclusion of all cells will make measurement invalid. Same for some cells that are covering open areas where operators are targeting max coverage as these cells have low traffic profile.(2) If Call drop rate target at network level is 0.5 % then cell level it cannot be same for 99% of cells .Similarly Call setup success rate at network level and cell level cannot be same.</p> <p>A more realistic target for network quality would be based on a Call setup success rate of 98 % and Call drop rate of 1.5 % including 2G & 3G and target 95 % cells (cells with at least 200 calls during busy hours)</p>
Network Availability	<p>This provides a measure of the proportion of time that the network is available to its subscribers. It is defined as the proportion of time during which at least 85% of the installed radio capacity at each base station is operational, meaning that the network can perform its required functions.</p> <p>For each base station site, the number of hours during which at least 85% of the installed capacity is operational during the</p>	≥99.95%	≥99.95%	<p>Ooredoo question the value of this target given that dropped and blocked call rates are also measured.</p> <p>This measure has no direct impact on customer experiences as there may well be enough capacity to meet demand even if capacity drops. Hence it seems to be a measure without purpose.</p> <p>If the target is to be mandated we suggest to put base station availability without any capacity with 98 % target which is global</p>

	<p>month is determined, and divided by the total number of hours in the month. Network availability is the average of the availability of each base station site.</p>			<p>benchmark</p>
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2.2 Mobile services – Voice

<p>Call Setup Success Rate (CSSR)</p>	<p>Call Setup Success Rate is defined as the ratio of established calls to call attempts. Established calls may be classified as those calls which have been attempted, traffic channel has been allocated and the call has been routed to the outward path of the relevant interface (switch). Existing definition is clear.</p>	<p>≥99.0%</p>	<p>≥98.0%</p>	<p>This measure effectively sets a design parameter of 1% blocking rather than the accepted international norm of 2%. The target is more stringent than virtually any other country and is practically unachievable.</p>
<p>Dropped Call Rate(DCR)</p>	<p>This measures the dropped call rate over the busiest part of the network on a specific location and at a given time.</p> <p>The network dropped call rate is defined as the proportion of calls successfully set up which terminate for any reason other than termination by either the calling or called parties.</p>	<p>≤0.5%</p>	<p>≤1.5%</p>	<p>The proposed target of 0.5% is more stringent than that applied in any advanced country (1% in Singapore, 2% in Saudi Arabia and many others) so would not be achievable in practice.</p> <p>As it stands, the definition of the measure is too vague in terms of time, location and scope.</p> <p>In addition, the measure fails to differentiate between alternative</p>

				technologies despite the fact that 2G is likely to perform better with respect to dropped calls than either 3G or 4G.
Blocked Call Rate (BCR)	<p>Blocked call means a call that is not connected because there is no free channel in radio access network to serve a call attempt.</p> <p>Numbers of blocked calls are those times where there is no free channel to serve a call attempt. A blocked call can occur due to signaling congestion (SDCCH in 2G, RRC in 3G or traffic channel congestion.(TCH in 2G RAB in 3G)</p> <p>A. Total number of cells at active in the network at the end of the respective period.</p> <p>B. BCR % of the most congested cell during busy hour in the network.</p> <p>C. % of cells with >1% traffic or 0.5% signaling channel blocking during busy hour.</p>	<p>A & B: To be Monitored</p> <p>C: < 3%</p>	New requirement	<p>This measure does not appear to be consistent with the Network Quality measure defined above. Is it the case that 3% of cells can exceed the 98.5% Network Quality target?</p> <p>Also, for B, it does not seem logical to measure most congested cell only. It would be preferable to either measure blocking at network level or over a percentage (e.g. the top 20 %) of high traffic cells.</p> <p>Blocking rate is effectively covered under Call setup success rate so there is no logic in having it as a separate measure</p>
Voice Quality Parameter	The Voice Quality Parameter is the percentage of calls with MOS (Mean Opinion Score) value ≥ 4 .	100%	New requirement	The target for this measure is challenging: a target of 3.5 is best practice. Also, the definition unclear: It is assumed that the MOS would be assessed from subjective rating of

				test calls (annual) and the caveats would have to be applied that the test would be carried out on-net as performance cannot be guaranteed if customer is in other network.
Call set-up time	Percentage of calls with call setup time under than 5 seconds.	100%	New requirement	<p>The target set against this measure seems to be inconsistent with the target of 98% call success rate.</p> <p>In addition, there are a number of considerations that should be made with respect to call set up time: it should be measured on-net as an SP cannot guarantee performance outside its control and it is not feasible to measure all calls so annual drive testing should be used to verify results.</p> <p>Furthermore, technology limits call set up time to at least 6sec for 2G and 3G calls, at least 8 sec for 4G calls.</p>

2.3 Mobile services – Broadband

Speed / data rate	This measure the actual speeds that a customer receives according to the tariff filing offered and/or advertised to customers.	95%		New parameters	<p>The definition of this measure is problematic as Ooredoo do not offer a speed guarantee with their mobile broadband service and data rate varies with the applications being used by the customer.</p> <p>Even then, a target of 95% is not realistic in a mobile network where the level of contention is out of the operators control</p> <p>Finally, it does not seem logical to set a data rate target for mobile that is 5% higher than that for fixed.</p> <p>Ooredoo suggest that average throughput per session as a better indicator of customer experience.</p>
Web browsing successful connection	Rate of successful radio connection	within 10 sec.	96%	New requirement	It is not clear how this would be measured, so premature to comment on the target.
		within 20 sec.	99.5%	New requirement	As above
Successful data transfer (uplink and downlink)	Actual data transfer at the offered speed or in terms of the approved tariff.	99.6%		New requirement	It is not clear how this measure differs from the speed/data rate measure.
Successful downloaded	Percentage of successful downloads with data rates equal	99.6%		New	As above. Also, Ooredoo does not

pages at the advertised speed	to or greater than 80% of the speeds mentioned in the tariff filing.		requirement	have a tariff based on speed.
Video Streaming (End to End Quality rate)	Percentage of successful access to a 3 mn video	98%	New requirement	It would not be feasible to monitor all streaming sessions. It is suggested that a reasonable sample size is included in the definition. Also, SP does not have end to end control over this service so cannot guarantee a prescribed service level. It is more realistic to require this service to be monitored only
	Percentage of successful streaming (non-dropped sequences) of a 10 mn video without interruption	99.9%	New requirement	Comment as above
	Percentage of good quality streaming of a 10 mn video without buffering/pixels/freezing and /or any distorted images.	99.8%	New requirement	Comment as above

2.4 Mobile services – Number portability

MNP – Successful port completion	Deactivation of ported numbers from the Donor network and activation on the Recipient network	90% within 24 hours from a valid request 95% with 48 hours 99.8% within 72 hours	New requirement	As defined in the Number Portability Policy document, a successful port should be completed within 24hrs across business days (Sunday to Thursday), from the time at which the porting request had been
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				registered (time stamp generated by the NPAS. The requested KPI's are measurable and achievable.
	Porting on specific business day requests and multiple number porting requests (businesses customers) Note: The specified day shall be set within 30 calendar days from the date of the porting request	99.85% within 24 hours of the specified porting day	New requirement	Not applicable. This specific service request for business customers is disabled as NPAS & VFQ are not ready for it.
MNP – Access and/or use of Critical Services	<ul style="list-style-type: none"> • Mobile origination: voice call and SMS • Mobile termination: voice call and SMS • Data connectivity • Incomplete or failed Port 	<ul style="list-style-type: none"> • 90% within 1 hour • 95% within 4 hours • 99.9% within 24 hours 	New requirement	This applies only in cases where successful port should be completed within 24hrs across business days (Sunday to Thursday). Need clarification on definition time should start after declaration of successful port.
MNP – Access and or use of Services	All other issues, e.g.: <ul style="list-style-type: none"> • Service profile, • charging, billing or account balance • value added services • mobile money services • MMS – mobile origination • MMS – mobile termination • video calls – mobile origination • video calls – mobile termination 	30 Calendar Days	New requirement	It is suggested that these measures are not applicable and should be discarded since all services are available for ported IN exactly the same was as for Ooredoo subscribers.

3 Customer relation (all services)

QoS parameters	Description	Minimum acceptable performance level		Current Obligation	Comment
Customer complaints	Number of customer complaints (valid complaints, not enquiries) received per 100 subscriptions.	< 0.5%		< 1% for Broadband only	
Response time by customer support center – telephonic call	This measures the call actually answered by a call center agent who lodges the complaint. It does not measure the call pick-up by an answering service.	60 sec. for 80% of the calls	90 sec. for 95% of the calls	New requirement	
Response time by customer support center – emails and electronic complaints	This measures the actual response time from the time that the electronic message is sent by the customer to the service provider.	24 hours for 95% of the emails and electronic complaints.	48 hours for 99% of the emails and electronic complaints.	New requirement	
Bill accuracy complaints	The number of complaints received by the service provider on bill accuracy per 100 customers.	< 0.3%		< 1%	
Billing complaints (BC)	Number of billing complaints received (each instance of a complaint being counted) divided by the corresponding number of total bills issued. A billing complaint should not be confused with a billing query (a request for information) or with a fault report.	<= 3% of invoices issued		New requirement	
Time to resolve billing complaints	Time to resolve a billing complaint from the time a complaint is received by the	5 calendar days	98%	95% within 20 business days 99% within 30	Any 100% target is unlikely to be

	Service provider until the customer is notified that the issue has been solved and, in case of a valid complaint, when the customer has been reimbursed and/or compensated.	30 calendar days	100%	business days	achievable.
Refunds and compensation	Delay for refunds/compensation to be received by customers	12 calendar days for 98% of complaints.		New requirement	
Complaints related to Lack of Transparency, unclear, inconsistent or misleading T&C /offer	Number of complaints received from subscribers about lack of transparency, unclear or inconsistent Terms and Conditions (T&C) or misleading complaints.	< 3% of the total amount of complaints		New requirement	
Number Portability Related complaints	Number of days to solve Number Portability complaints	5 days.	99.5%	New requirement	
Reconnection and activation of Service after bill settlement	Time to reconnect and re-activate a service after the bill settlement in cases of disconnections whether authorized, unauthorized or for non-payment reasons (once bill is settled)	4 hours	98%	New requirement	
		24 hours	100%		
Advance Notice prior to planned services disruptions/outages	<p>This measures the service provider's provision of advance time out notifications to customers.</p> <p>Measurement method: the percentage of all planned outages and service interruptions that are conveyed or communicated to customers in advance prior to such service interruptions or outages.</p> <p>Note: Notifications should be published e.g. on the service provider's website</p>	99.5%		New requirement	The definition of outages needs to be more clearly defined before informed comment can be made on the proposed target.

	<p>and the local English and Arabic newspapers as well as on social media.</p> <p>Prior written notice must be given to Ministry of Information and Communication Technology at least 5 days in advance.</p>			
<p>Unplanned Notifications of service disruptions or outages</p>	<p>Time to notify to customers about service disruptions or outages from the moment the service provider is aware of such service disruption/outage.</p> <p>Note: Notifications should be e.g. broadcast over social networking sites such as twitter and Facebook and over the SP website and where possible customers should be notified by SMSs.</p> <p>Written Notice must be given to Ministry of Information and Communication Technology as soon as the event is known.</p> <p>Ministry of Information and Communication Technology shall be kept informed on a regular basis until the situation is corrected/ the service is back to normal.</p>	<p>Within 1 hour in 98% of cases</p>	<p>New requirement</p>	<p>The definition of this measure needs to be more explicit in the definition of outages: whether these are major works with customer impact only or more all outages, even those with negligible impact. It would be premature to comment on the proposed target until this clarification is available. In meantime it should be noted that the requirement for extensive media dissemination adds time and complexity into this measure which is likely to make the stated target impractical.</p>



Annex II Criteria for the determination of Network Coverage and Availability

1 Requirements for Mobile Services

Service Providers are required to fulfill the Network Rollout and Coverage obligations as set out in Annexure G of their License.

Coverage shall be assessed:

- Within any outdoor area of 30m x 30m.
- User Equipment receive a minimum signal strength as set in Table 1.
- Each category of service (e.g.: voice, SMS, MMS, data, etc.) can be initiated and completed (Radio Network Availability)

The requirement for 30m x 30m coverage assessment is only possible through the use of a planning tool, not through drive testing.

Table 1

Zone	Minimum signal strength (Outdoor)	Minimum signal strength (Indoor)
Cities, Towns and villages (A)	-75dBm	-85dBm
All other Zones (B)	-85dBm	

The target for indoor signal strength is impractical due to the significant variances in penetration loss between buildings. Accepted practice would be to define an outdoor signal strength that, with an assumed penetration loss, matches the target indoor signal strength.

Achievement against any network coverage targets would require practical installation issues such as building permits and approval speed to be resolved

2 Requirements for Fixed Services

- Coverage of fixed services is a Percentage of dwellings connected to the network of the service provider. It includes any infrastructure needed to deliver the service in the premises of the customer.
- For passive services, the coverage is a percentage of dwellings passed by the network within a radius of 50m.

This does not appear to define a coverage obligation

3 Evolution of the population of Qatar

Any new developments shall be covered by all the service providers within 6 months upon completion of 80% of each of the new development building phases.

This requirement has the potential to strand network assets in the event that new developments do not complete.

13. Annex 3: Measurements & targets from ETSI, ITU standards

ETSI has been responsible for standardising the quality of service measurements required by the European Commission. It has therefore had definitions of measurements for fixed and mobile telephony services for many years and definitions of measurements for internet services for rather fewer years¹⁷. The proposals for measurements of internet services follow user surveys to ascertain the aspects of services that customers were most concerned about¹⁸. These definitions leave open many choices. Though many of them are suitable as inputs to national definitions, few of them can provide comparability without further work.

ETSI has also been devising quality of service measurements for mobile services with 3GPP. Besides voice telephony and messaging the services include video telephony, video streaming, file transfer, web browsing and email¹⁹. Measurements are defined both including and excluding application interfaces (thereby taking into account more or less of the user experience). The measurement methods are accompanied by information on test procedures, profiles and calculations leading towards comparability. Targets are not considered, though some experimental investigations of targets have been done²⁰.

Many ITU-T recommendations consider quality of service. They are useful in several areas (though they do not provide consistent sets of measurement methods covering all aspects of services). Those most immediately relevant to fixed and mobile telephony are E.721 and E.771, which include targets based on typical reference connections for various calls (local, national, international, fixed and mobile)²¹.

Some targets in ITU-T recommendations relate to network performance, rather than quality of service, as they are calculated “bottom up”, from network equipment, not “top down”, from user experience. However, there are exceptions, such as the upper bounds on end-to-end delays that prevent conversations from deteriorating and that are recommended in G.114²². Also targets for voice, video and data applications suggested by some empirical work are summarised in G.1010²³.

Some such voice, video and data applications are put in the context of IP network performance by Y.1541²⁴. However, several targets for IP networks are still rather tentative, as some applications

¹⁷ ETSI EG 202 057-1 V1.2.1, *Speech Processing, Transmission and Quality Aspects (STQ); User related quality of service parameter definitions and measurement* at <http://pda.etsi.org/pda/queryform.asp>.

¹⁸ ETSI TR 102 276 V1.1.1, *User Group; Users' Quality of Service Criteria for Internet Access in Europe* at <http://pda.etsi.org/pda/queryform.asp>

¹⁹ ETSI TS 102 250-1 V1.1.1, *Speech Processing, Transmission and Quality Aspects (STQ); quality of service aspects for popular services in GSM and 3G networks* at <http://pda.etsi.org/pda/queryform.asp>

²⁰ ETSI TR 102 274 V1.1.2, *Human Factors (HF): Guidelines for real-time person-to-person communication services* at <http://pda.etsi.org/pda/queryform.asp>

²¹ ITU-T Recommendation E.721, *Network grade of service parameters and target values for circuit-switched services in the evolving ISDN* at <http://www.itu.int/rec/T-REC-E.721>.

ITU-T Recommendation E.771, *Network grade of service parameters and target values for circuit-switched public land mobile services* at <http://www.itu.int/rec/T-REC-E.771>

²² ITU-T Recommendation G.114, *One-way transmission time* at <http://www.itu.int/rec/T-RECG.114>

²³ ITU-T Recommendation G.1010, *End-user multimedia quality of service categories* at <http://www.itu.int/rec/T-REC-G.1010>

²⁴ ITU-T Recommendation Y.1541, *Network performance objectives for IP-based services* at <http://www.itu.int/rec/T-REC-Y.1541>

have not been assessed widely by users and other applications may never actually be implemented on IP networks. (In particular some of the packet loss targets in Y.1541, but not those in G.1010, are unnecessarily demanding for most applications that are expected to use IP networks: they are intended to deal with the transport of tightly synchronized bit streams over IP and do not take account of the packet loss concealment that is implemented with many voice encodings or the reliable delivery that is used in file transfers and similar applications.

14. Abbreviations

3GPP	Third Generation Partnership Project
ARPU	Average Revenue Per User
Capex	Capital Expenditure
ETSI	European Telecommunications Standards Institute
EU	European Union
FCC	Federal Communications Commission
GSM	Global System for Mobile communications
ICT	Information and Communication Technology
ITU	International Telecommunication Union
MOS	Mean Opinion Score
OECD	Organisation for Economic Co-operation and Development
SMS	Short Messaging Service
TRA	Telecom Regulatory Authority



September 15, 2013

Mr. Graeme Gordon
Assistant Secretary General
Ministry of Information and Communication Technology
P.O. Box 23264, Al Nassr Tower
Doha, Qatar

Dear Graeme,

Subject: Consultation Document: Instruction on QoS Parameters and Methodology for the Assessment of Coverage

Qnbn welcomes this opportunity to comment on the draft Instruction on QoS Parameters and Methodology for the Assessment of Coverage (Instruction on QoS). Qnbn is supportive of the Ministry of Information and Communications Technology's (MoICT) initiative of extending the scope of the existing QoS parameters. Qnbn understands that there will be an additional and more comprehensive MoICT initiative to address the framework, implementation, processes and necessary templates associated with this Instruction QoS. Qnbn looks forward to working with MoICT on all aspect of the QoS matter given its significant importance to the telecommunications marketplace.

In order to assist MoICT in properly framing its Instruction on QoS we provide a red-lined version of the Consultation Document which, in Qnbn's view, better frames the QoS parameters.

As MoICT is aware, Qnbn has long taken the position that the QoS requirements in its License are more suited to an active redundant service provider of telecommunications services. We have taken the position that real technological differences exist between a provider of active service and one simply providing services at a passive level and that the QoS metrics must and should be adjusted to reflect such technological realities. On this basis Qnbn has sought an amendment to its QoS Annexure to its License and has made a number of Submissions in support of such amendment. Qnbn incorporates by reference its earlier Submissions on the issue of QoS License amendment.

Qnbn notes with favor that Annex 1 (section 1.5) goes some way in recognizing that passive services must have separate metrics which necessarily differ from those of active services. In fact, MoICT proposes an alternative to the Service Availability metric whereby it is removed altogether. Qnbn supports deleting this parameter for the following reasons:

1. A passive operator has no 'work around' or other such solution when a passive fiber cable is damaged or cut. An active service provider with a redundant network can re-route traffic in nanoseconds utilizing active equipment and diverse paths.
2. Third parties damaging Qnbn fiber, such a back-hoe operators, are not within the control of Qnbn which no means of preventing digging throughout the State of Qatar;
3. Many restorations cannot be expediently addressed and require time consuming measures;
4. Many jurisdictions', such as Canada, consider damages to fiber cables as force majeure events.

If MoICT is not minded to remove the Service Availability metric (which would be most unfortunate) Qnbn recommends that cable damages and infrastructure damages caused by third parties be removed from this



particular QoS parameter.

Qnbn proposes that MoICT reconsider its approach to planned service outages by reclassifying this activity into two separate categories. One would be “Normally Scheduled Maintenance” which can be planned and carried out with appropriate notifications; the other would be “Emergency Planned Maintenance” which addresses the activity required to prevent unplanned outages such as damage to the outer sheath of a fiber cable or damage to duct infrastructure exposing the cable. The distinction is that in the former Qnbn would notify Customers and MoICT five (5) days in advance whereas in the latter Qnbn would provide same day notification to Customers and MoICT and would undertake repairs at the earliest reasonable timeframe.

As for Performance Bonds Qnbn notes that the underlying metric is on a monthly basis; whereas, QoS metrics are quarterly. Qnbn respectfully submits that the underlying metric must be changes to a quarterly basis.

On a last note, the Instruction on Open Access to Building Owners, Developers and Service Providers stipulates that building owners shall be responsible for deploying in-building cabling in accordance with the IBC Guidelines. Given the importance of this “last mile” cabling to the quality of service provided to subscribers it is imperative that QoS requirements extend to building owners. Otherwise, no matter the expense and effort expended by SP’s to ensure high quality services the quality of the service the subscriber receives is ‘only as good as the weakest link’ which in this case may well be the building owner. If MoICT is serious about improving QoS parameters it cannot ignore an important aspect of the underling network upon which SP services are transmitted to subscribers.

QUESTIONS

Question 1: Do you support the MoICT’s initiative of extending the scope of QoS requirements, which are set out in the various Licenses, to reflect technological advancements and improve the quality of telecom services to customers in Qatar.

Qnbn supports the initiative undertaken by MoICT. Qnbn is unequivocally committed to the principle of providing high quality services to its Customers. Qnbn notes that there have been no technological advances in the passive sector since issuance of its License but would propose incorporating such advances in the event such took place and were both requested by Customers and economically viable.

Question 2: In addition to the QoS parameters set out in the tables in section 2.7, are there any other parameters² which should be included in the QoS requirements? Please provide justification.

The QoS parameters reference a numerous filings which should take place on a periodic basis by Service Providers as well as certain information and provisions to be included in the Performance Bond to be obtained from a financial institution. Qnbn respectfully submits that ictQatar should issue templates to ensure consistency and equal treatment of SP’s.

As noted above, the Instruction on Open Access to Building Owners, Developers and Service Providers stipulates that building owners shall be responsible for deploying in-building cabling in accordance with the IBC Guidelines. Given the importance of this “last mile” cabling to the quality of service provided to subscribers it is imperative that QoS requirements extend to building owners. Otherwise, no matter the expense and effort expended by SP’s to ensure high quality services the quality of the service the subscriber receives is ‘only as good as the weakest link’ which in this case may well be the building owner.

Question 3: Are there any specific comments about the descriptions, measurement methods, and the minimum acceptable performance levels of the QoS parameters as set out in section 2.7? Please provide justification.



With respect to unplanned notifications of service outages it may be useful for MoICT to require being included in the electronic remedy systems of SP's so that it can readily access and ascertain the status of any trouble ticket. This will avoid the cumbersome and time consuming process of queries and responses between MoICT and the SP as well as provide undisputable real time clarity as to progress on resolving quality of service issues.

Question 4: Comments are invited on the proposed timeframes for compliance with the QoS requirements.

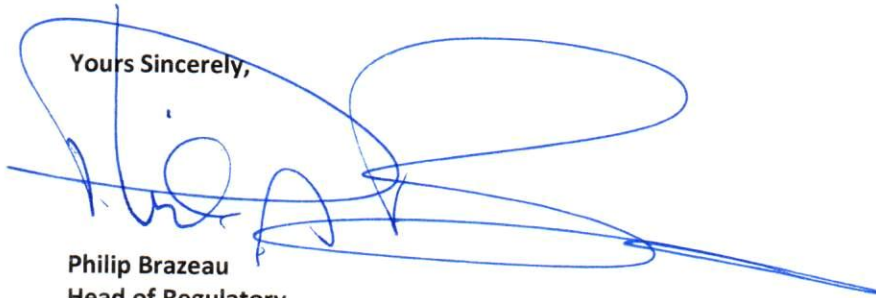
The implementation periods suggested at page 5 should be amended as follows:

- Fulfill 85% of the total number of QoS requirements ...within twelve (12) months following the issuance of these Instructions; and
- Fulfill 100% of the total number of QoS requirements...within two (2) years following the issuance of these Instructions.

Question 5: In addition to the QoS parameters set out in section 2.7, are there any other parameters that should be included in the QoS requirements. Please justify.

QnbN refers MoICT to its comments in response to Question 2 above concerning building owners and its response to Question 3 above.

Yours Sincerely,



Philip Brazeau
Head of Regulatory
QnbN





VODAFONE QATAR RESPONSE TO ictQATAR's QUALITY OF SERVICE INSTRUCTIONS DATED 22 JULY 2013

1. Executive Summary

- 1.1 Vodafone Qatar Q.S.C. (“**Vodafone**”) welcomes the opportunity to comment on ictQATAR’s Draft Quality of Service (“**QoS**”) Instruction dated 22 July 2013 (“**Draft Instruction**”) and wishes to offer its full support to achieving ictQATAR’s objective of ensuring that Qatar receives world class telecommunications services.¹
- 1.2 We note that the Draft Instruction includes material increases in signal strength for outdoor coverage to (-75 dBm) and a new requirement for indoor coverage (-85 dBm). In principle, Vodafone is happy to accept these higher QoS requirements but notes that to achieve these parameters, in addition to significant further capital investment for network deployment, Vodafone will require the support and leadership of ictQATAR to effectively manage the following:
- (a) **site permit approvals:** obtaining the necessary approvals for infrastructure deployment in a timely manner, in particular, permits for:
 - (i) deployment on government owned land;
 - (ii) deployment on land leased from the government;
 - (iii) construction of new infrastructure on existing sites to allow for site sharing.
 - (b) **site deployment and emission standards:** establishing consistent guidelines across government agencies and municipalities on site deployment and emission standards and managing the interests of relevant stakeholders in this regard as an industry issue;
 - (c) **enforcement:** enforcing instructions with regard to access and infrastructure deployment.
 - (d) **spectrum access:** access to additional spectrum in the 900 Mhz band to reduce the requirement for additional towers to meet the -75 dBm target;
 - (e) **regulatory strategy and market certainty:** full clarity on ictQATAR’s regulatory strategy and mobile and fixed market structures for the coming three years in order to assist Vodafone to gain the support of its Board and shareholders for additional capital expenditure (“**Capex**”).
- 1.3 Vodafone considers the Draft Instruction a strong basis for further work to adequately define appropriate, measurable and achievable QoS parameters.

¹ Vodafone notes that the Draft Instructions purport to be issued by the Ministry of Information & Communication Technology. Given that the currently applicable Law and Licenses refer to the Supreme Council for Information and Communications Technology (“**ictQATAR**”), and that Vodafone is not aware of any decree being issued to amend this, Vodafone refers to ictQATAR throughout the submission.

There are a number of issues with regard to the parameters as they are currently proposed. We outline these issues in **Appendix A** below. We note that ictQATAR has commenced a project to further refine the parameters, to ensure that they are customer focused, and ensuring that the measurement is consistent across Service Providers. Vodafone welcomes this approach and, therefore, understands that the comments below are considered as initial feedback which can be iterated through industry workshops and consultation.

- 1.4 The Draft Instruction proposes an annual bond of QAR 100,000 per parameter per month. This would mean placing a performance bond of up to QAR 66 million per annum. This is approximately equivalent to 23 per cent of Vodafone's 2013 EBITDA. Such proposal is not acceptable to Vodafone. Requiring the Service Providers to place such a significant sum kept aside in bank bonds and at risk with ictQATAR will serve only to make it more difficult to make a case to shareholders for the Capex required to meet the proposed standards. In Vodafone's view, ictQATAR's objective is better served by publishing the data so that consumers can make better informed choices. Vodafone agrees that the License conditions currently are discriminatory between Service Providers and encourages ictQATAR to standardise them for both Service Providers.
- 1.5 Vodafone notes that current Draft Instruction would have the effect of amending the Individual Licenses of the Service Providers. It is Vodafone's strong view that ictQATAR and the Service Providers have a shared interest in demonstrating to Qatar's consumers that QoS in Qatar is world class. QoS auditing is an important part of this. We strongly encourage ictQATAR to develop QoS requirements that are realistic and achievable so that license changes can be agreed by mutual consent. This indicates to shareholders that ictQATAR strongly supports the integrity of licensing regime and it provides for greater certainty, investor confidence and continued investor support of the industry.

2 General Comments

- 2.1 Vodafone supports ictQATAR's objective of improving QoS and demonstrating to Qatar's consumers and decision-makers that Qatar receives world class telecommunications services. However, Vodafone believes that ictQATAR's analysis makes some flawed assumptions and assertions. Vodafone addressed these issues in detail in its response to ictQATAR's Draft Regulatory Strategy dated 7 April 2013 noting that:
 - (i) The mobile market is subject to vigorous competition in a number of market segments and Vodafone's market share is growing steadily after a period of relative stability;
 - (ii) Considerably more work is to be done in the regulation of fixed and mobile markets to support further growth;
 - (iii) ictQATAR's assertion that there is a "lack of significant improvement in Quality of Service" is not supported by the evidence including customer survey data (for customers of both Vodafone and Ooredoo) and Vodafone Group internal benchmarking.
 - (iv) QoS could be improved if the Service Providers were better able to deploy infrastructure;

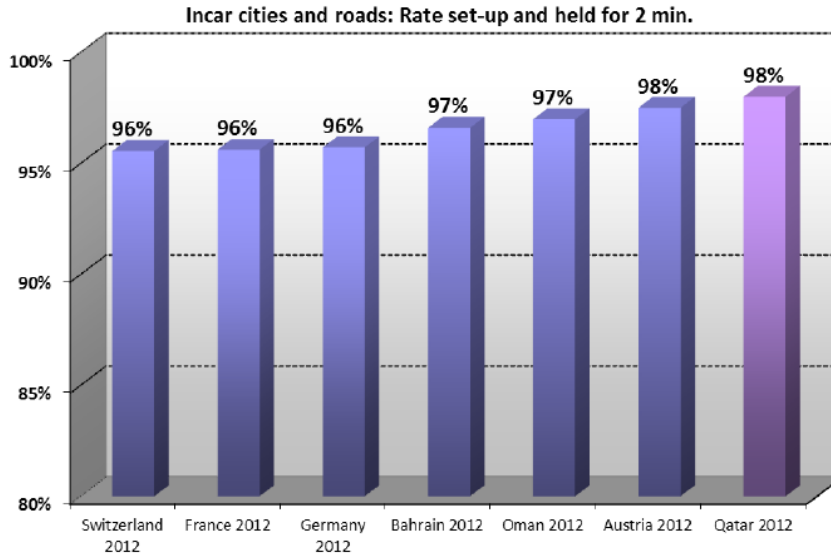
(v) The fixed line market is characterised by significant uncertainty with regard to market structure and the role of the Qatar National Broadband Network (“Q.NBN”) established by ictQATAR.²

2.2 In addition to repeating the assertions made in the Draft Regulatory Strategy ictQATAR makes some general statements where it has inferred a lack of investment based on ARPU and Ooredoo’s profitability. Vodafone notes that Qatar now has under construction two competing fibre to the home networks both of which are projected to cover the vast majority of households in Qatar. Vodafone is not aware of any other country in the world where there is such widespread competitive deployment of FTTH networks. In addition, Vodafone has deployed its own fibre backbone network and submarine cable landing station. Vodafone notes that both operators are in the process of deploying LTE networks. Vodafone contends that if there has been any lack of investment in network this is due to permitting processes, which do not allow the service providers to deploy the networks they would prefer. This was a strong common theme in the responses of Vodafone, Q.NBN and Ooredoo to the Draft Regulatory Strategy.

2.3 ictQATAR has the data required to measure the combined industry Capex and benchmark that against other jurisdictions on a population basis. Vodafone respectfully suggests that it does so, rather than make unsubstantiated claims.

2.4 ictQATAR refers to an independent survey undertaken on the Service Providers’ networks (“Directique Report”)³. While Vodafone does not contend that the networks are perfect on every measure, the Directique Report does not show the Service Providers to be significant outliers with regard to QoS. Figures 1, 2 and 3 below show some of the international benchmarking work from the Directique report. It is somewhat unusual that ictQATAR would not refer to its own data in this regard when attempting to define the problem it is seeking to solve via regulation.

Figure 1: International Benchmarks for rate of calls set-up and held for 2 minutes⁴



²

<http://www.ictqatar.qa/sites/default/files/documents/Combination%2520of%2520all%2520comments%2520received.pdf> pages 3 – 8.

³ ictQATAR, *Quality of Service Measurements-Mobile services Network Audit 2012 Vodafone Quality of Service Report*.

⁴ ictQATAR, *Quality of Service Measurements-Mobile services Network Audit 2012 Vodafone Quality of Service Report*, p. 26

Figure 2: SMS Service successful transfer rate⁵

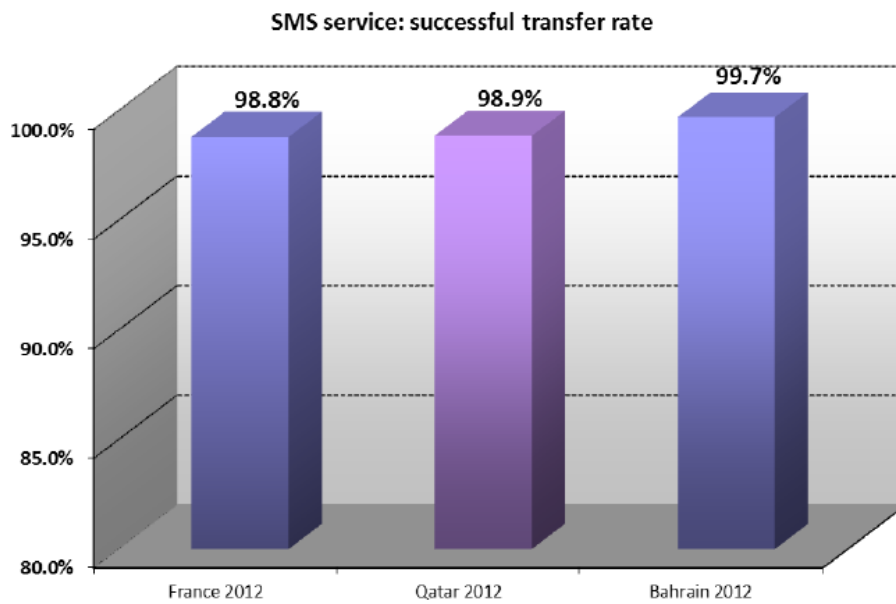
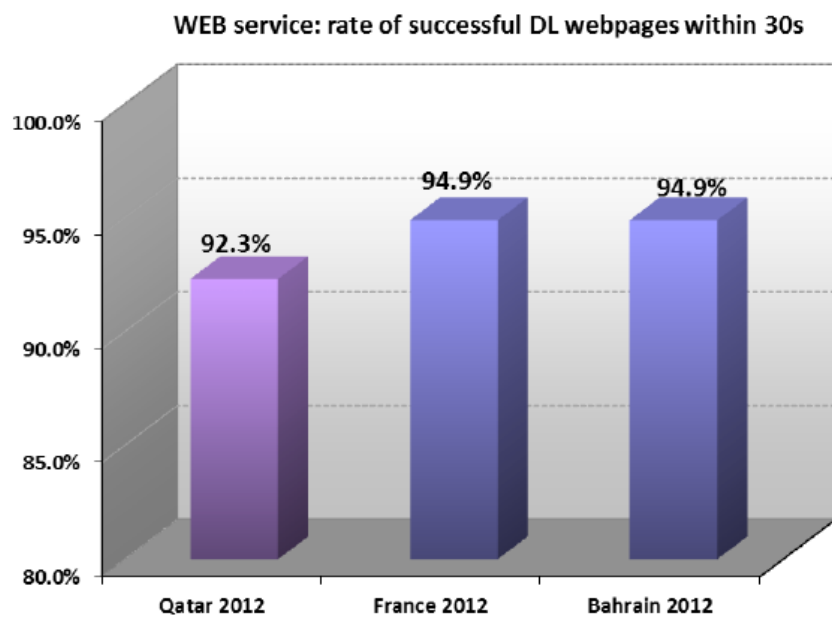


Figure 3: Rate of successful download of web pages within 30 seconds⁶



2.5 ictQATAR notes that the number of complaints from customers it receives has been steadily increasing. This does not imply any increased dissatisfaction with Service Providers. The ictQATAR consumer affairs unit is relatively new and it could equally mean that there is an increased awareness by consumers of their right to raise issues with ictQATAR if they do not have them resolved by the Service Providers. Vodafone has not seen an increased quantum of complaints

⁵ ictQATAR, *Quality of Service Measurements-Mobile services Network Audit 2012 Vodafone Quality of Service Report*, p 27.

⁶ ictQATAR, *Quality of Service Measurements-Mobile services Network Audit 2012 Vodafone Quality of Service Report*, p 30.

and the volume remains well below the level required in the current QoS obligations. Vodafone would like to inform ictQATAR that out of the 70 customer complaints received from January 2013 till 10 September 2013 only 5 were relating to QoS issues.

3 Vodafone requirements for achieving proposed coverage measures

3.1 Vodafone notes ictQATAR's proposed minimum signal strength for indoor and outdoor coverage of -85 dBm and -75 dBm (for cities town and villages) respectively. Leaving aside concerns with regard to the measurement of indoor signal strength Vodafone estimates the following additional sites and investment would be required:

Table 1: Mobile Sites and Capex required

2G	Band	900MHz	1800MHz
	Additional Needed Sites	130	180
3G	Band	900MHz	2100MHz
	Additional Needed Sites	130	240
	3G Cost (Mn QAR)	C.I.C []	C.I.C []

3.2 As noted above, Vodafone is willing to support the new requirement in principle but in order to achieve this target Vodafone requires a number of actions from ictQATAR. We outline these below.

- (i) Vodafone will need to be able to obtain the necessary approvals for infrastructure deployment. As noted above, the requirement is estimated to require up to an additional 240 sites. As ictQATAR is aware, there remain significant blockages to deployment and a significant lack of clarity on the ability of Service Providers to deploy sites. In particular improvements are needed on:
 - (a) deployment on government owned land – Vodafone has been unable to obtain permits for government owned land for several years;
 - (b) deployment on land leased from the government – the Ministry of Municipalities and Urban Planning (“**MMUP**”) has recently started rejecting site applications for land that is leased from the Government claiming that subject to the Government lease there can be no subletting of space to build mobile sites. This represents 20 percent of Vodafone's currently planned network;
 - (c) construction of new infrastructure on existing sites to allow for site sharing – due to the loading of existing towers in part due to Ooredoo's LTE deployment, in order to share towers a new structure is required. Currently this goes through the same process as an entirely new tower. Vodafone and Ooredoo have requested a fast-track process for obtaining building permits where an existing tower is being replaced by a new, sharable tower.
- (ii) As ictQATAR is aware questions remain around a shared set of emission standards and guidelines for deployment. As ictQATAR is aware there are competing proposals in relation to these issues. In order for the Service Providers to achieve the objectives of ictQATAR in relation to QoS ictQATAR must demonstrate leadership across the relevant government agencies and municipalities to ensure that the Service Providers can deploy network.
- (iii) ictQATAR has issued instructions for the Installation, Operation and Access to Physical Infrastructure in the State of Qatar dated 25 August 2013. It is critical now that that the Instructions are issued that there is clarity on their

application and enforcement where Service Providers face non-compliance. This provides greater certainty regarding the ability of Vodafone to access sites, colocation, fibre and electricity in support of network deployment.

- (iv) As indicated in Table 1 significantly fewer sites would be required to meet ictQATAR's proposed signal level if additional 900 Mhz spectrum is made available. Vodafone therefore strongly encourages ictQATAR to make available an additional allocation of 900 Mhz spectrum.
- (v) The current process provides an opportunity for ictQATAR to encourage the existing Service Providers to agree higher coverage and QoS measures in exchange for greater clarity on additional market entry if the new requirements are met. ictQATAR's current approach sends competing signals to investors. On one hand ictQATAR is attempting to improve QoS by purporting to impose higher obligations than those provided for in the individual licenses. On the other hand ictQATAR is indicating that QoS may be improved by further market entry stating that:

The lack of significant improvements in quality of service and the relatively static nature of market shares for the last 18 months suggests that a third service provider may be needed to enhance competition and deliver benefits to consumers.⁷

Vodafone sees the above approaches as contradictory and confusing for investors. To improve clarity and coherence Vodafone respectfully suggests that ictQATAR map out a clear roadmap for improving QoS that allows the Service Providers to invest with more certainty. This may include giving the existing Service Providers the opportunity to demonstrate that they can provide improved QoS before ictQATAR considers whether further market entry might improve outcomes.

In the face unclear signals on further market entry Service Providers face greater challenges making the case for additional Capex. In Vodafone's view, ictQATAR's objective will be better met by the current market participants being able to compete effectively and invest in the highest quality networks (subject to an ability to deploy) while meeting shareholders' expectations.

- (vi) The Draft Instruction seek to impose requirements beyond those already contained in the relevant Individual Licenses. The Licenses are a critical aspect of the Applicable Regulatory framework. Certainty in relation to the requirements of the license is important for investor confidence and any amendments should be undertaken in compliance with the Applicable Regulatory Framework. In Vodafone's view, it is preferable that any amendments are agreed between the parties rather than imposed by ictQATAR. With regard to the current proposals Vodafone strongly encourages ictQATAR to work closely with the Service Providers to establish measures which are achievable, demonstrate clear benefits for consumers and are affordable. Such an approach will improve the ability of the Service Providers to make the case for additional Capex.

4 Performance Bonds and compliance

- 4.1 In Vodafone's view ictQATAR's approach to compliance should be guided by improving information available to consumers to make informed choices. This assists market development and provides a strong incentive for Service Providers

⁷ ictQATAR, Regulatory Strategy 2013 – 2016, p. 9.

to comply with requirements. Thus, Vodafone recommends that rather than a punitive regime of fines the results are published and easily accessible on ictQATAR's website.

- 4.2 The current proposal for a bond of QAR100,000 per parameter per month is punitive and will reduce the ability of Vodafone to invest. The proposal means that Vodafone would have up to QAR 65 million per annum lodged with ictQATAR. This is equivalent to up approximately 23 percent of Vodafone's 2013 EBITDA. Having such a large sum at risk creates significant budgeting uncertainty for Vodafone and will not support ictQATAR's objective of increasing investment.
- 4.3 Vodafone agrees with the proposed approach to meet and give an opportunity to explain the non-compliance and the time to remedy. However, the timeline for remedy cannot be defined as 30 days as certain remedies may take longer than 30 days depending on the severity of the problem.

5. List of questions

Question 1 Do you support Ministry of Information and Communication Technology's initiative of extending the scope of the existing QoS requirements, which are set out in the various licenses, to reflect recent advancements in telecommunications technologies and services and to improve the quality of the telecom services offered to customers in Qatar?

Yes. Subject to the points raised in Section 3 above.

Question 2 In addition to the QoS parameters set out in the above tables in Section 2.7, are there any other parameters that should also be included in the QoS requirements? Please support your proposals with justification.

In Vodafone's view there should be fewer key parameters rather than more specific and detailed parameters as are being proposed in the Draft Instruction. Vodafone notes that ictQATAR is commencing a policy process which will include international benchmarking of QoS measures. Vodafone requests that the results of this benchmarking be shared so that ictQATAR and the Service Providers can consider whether the number of parameters is in line with international best practice.

Vodafone's concern is that too many parameters will create an unnecessary burden for all parties and that policing compliance against the parameters will become unwieldy. Vodafone's preference is for fewer, simpler measures that can be published and that have meaning for consumers.

Question 3 Are there any specific comments about the descriptions, measurement methods, and the minimum acceptable performance levels of the QoS parameters as set out in Section 2.7 above? Please support your comments with justification.

Please see Annexure A.

Question 4 Comments are invited on the proposed timeframes for compliance with the QoS requirements.

As noted above there is work required to allow Service Providers to deploy network. In Vodafone's view a plan should be developed to address the key issues and the timing of the QoS compliance should be driven by that plan. For some parameters work may be required to put systems in place for measurement. Vodafone proposes that once the parameters themselves are settled the Service

Providers produce implementation plans and propose an implementation timeframe based on the plans.

Question 5 In addition to the QoS parameters set out in the above tables in Section 2.7, are there any other parameters that should also be included in the QoS requirements?

This appears to be the same as Question 2 above.

Vodafone thanks ictQATAR for the opportunity to comment on the Draft Instruction and looks forward to working with ictQATAR on the implementation of robust and achievable QoS measures.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'Julian Kersey', written in a cursive style.

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Appendix A: Comments of Individual Parameters

Fixed General

QoS parameter	Minimum requirement	Vodafone Comment
Daily faults rate	< 0.5%	This KPI is not within Vodafone's control. For example, if the Google site is down and customers can't open it, this should not enable Customers to report this as a fault, for which Vodafone could be penalised. ictQATAR needs to clarify whether this is calculated as an aggregate of all our services, or on a per customer service basis. VQ proposes that this should be aggregated. All KPIs should be defined as aggregated amounts across all services.
Fault Repair Time	Within 24 hours 90% & Within 72 Hours 99.9% Within 24 hours 90% within 72 Hours 99.9% Emergency Services - 1 hour 98% Services to Enterprises / SME: when a SLA is provided by the SP – 99.5%	Vodafone considers the new targets, especially conforming to repair times such as Emergency repair in 1 hour, to be unrealistic. Vodafone considers that the current KPI of 90% within 24 hours and 99% for 72 hours is more reasonable and achievable.

Fixed Voice

QoS parameter	Minimum requirement	Vodafone Comment
Successful call ratio	National - 99% International - 95%	The successful call ratio, should be applicable on on-net (Vodafone Network) calls only. Vodafone proposes that the 95% should be an aggregate of national and international together. Further the tests should be based on results obtained by using test probes.
Call setup time	National < 3s International < 4s	The call setup time - should be applicable on on-net calls only. Vodafone suggest that the aggregate KPI for national and international of 7 s is more achievable. Further the tests should be based on results obtained by using test probes.

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Availability of Telephone Exchange Equipment	99.99%	Vodafone can only report this based on IMS core nodes. This should exclude planned maintenance and Node up-time used instead of in-service minutes.
Call drop rate	0.50%	The successful call drop ratio, should be applicable on fixed to fixed on-net calls only. Further the tests should be based on results obtained by using test probes
Voice quality (Mean Opinion Score - MOS)	4	The voice quality score should be applicable on fixed to fixed on-net calls only. Further the tests should be based on results obtained by using test probes.

Fixed Broadband

QoS Parameter	Minimum Requirement	Vodafone Comment
End to End network	99.85%	Vodafone can only provide calculations based network nodes availability, except the internet connection to the Internet backbone. Also should exclude force majeure and external harm done to the fibre by digging etc.
Network Latency	Broadband to Int. gateway - 80ms ISP to Int. NAP port - ≤300ms ISP to nearest NAP port ≤800ms	This is impossible to monitor from the customer's premises. Monitor from Broad Band Network Gateway towards Internet Gateway.
Bandwidth utilisation	Maximum 85% for more	We can consider POP as the Optical Line Terminator / ISAM uplink to the core aggregated capacity.
Speed / data rate	90% of the advertised speed and according to the tariff filing, all the time and everywhere	It is not possible to monitor the actual speeds at peak time for each customer. ictQATAR needs to provide a clear definition of where we are measuring speed to i.e. will it be Vodafone Qatar Server? Vodafone cannot be agree to 90% of advertised speed to anywhere in the world and where the speed is not under our direct control i.e. outside of Vodafone Qatar server.
Minimum speed Offered	95% of households by 2015 98% by 2015	We note that this will be in line with the National Broadband Plan.

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Web browsing successful connection	within 10 - sec. 98% within 20 - sec. 99.99%	It is difficult for Vodafone to ensure web browsing connection success as the websites are controlled by third parties and this will depend on various factors. Also, different customers and enterprises will have different requirements such as download speed and SLA's.
Successful data transfer (uplink and downlink)	99.80%	It is not possible to monitor data transfer speed for each customer
Successful downloaded pages at the advertised speed	99.80%	It is not possible to monitor data transfer speed for each customer
Video Streaming (End to End Quality rate)	99.8% - 99.9%	Vodafone needs to better understand the quality measure. What does 99.8% - 99.9% mean? Further, we need to understand what the definition of successful access vs. unsuccessful would imply. What is 'good quality streaming'? This is currently very subjective.

Fixed Leased Lines

QoS Parameter	Minimum Requirement	Vodafone Comment
Supply time	Within 5 days - 95% - within 20 days 100% Civil works – 95%	Clarification is required on the network footprint within which this is measured.
Daily Faults rate	< 0.5%	Clarification is required on which services this relates to as Vodafone has different Enterprise products such DIA, P2P, MPLS etc Further, this will needs to be defined as aggregated across all services.
Fault repair time	24 hours - 99% 72 hours 99.9%	Clarification is required on whether this is an aggregate KPI across the whole customer base or on a per circuit basis. Vodafone suggest that this should be an aggregate and this needs to be explicitly stated.
Service availability	99.9%	The most likely current scenario is that QNBN provides this to Vodafone therefore it is subject Q.NBN's SLA. Clarity is required on which service this KPI relates to – MPLS, DIA or P2P? Vodafone cannot provide a blanket SLA to cover every product. Further, are these measurements for protected or Unprotected KPI? Vodafone suggest that this should be an aggregate and this needs to be explicitly stated.

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Availability of Access	99.95%	As this section relates to leased lines, Vodafone proposes to move this KPI to other section (Network related). Vodafone suggest that this should be an aggregate and this needs to be explicitly stated.
Agreed bandwidth	95%	Further details are required on this KPI calculation. Vodafone suggest that this should be an aggregate and this needs to be explicitly stated.

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Fixed - Passive

QoS Parameter	Minimum Requirement	Vodafone Comment
Service Supply Time (SST)	90%	In the current circumstances Vodafone expects Q.NBN to be the key provider of such services. We encourage a workshop to ensure that the requirements can be realistically met by Q.NBN and that those requirements then flow through to the end customer. Also, Vodafone requires clarification on whether ictQATAR means only Dark Fibres as passive services? Or includes all other elements as well.
Mean Time to Restore (MTTR)	24 hours	Vodafone requires clarification on whether this calculation is an aggregated MTTR for all services combined?
Service Availability	>= 99.8%	If this is Dark Fibre then Vodafone takes these services from QNBN which is currently offering 99.3%, 99.5% and 99.7% depending on the SLA. Also, clarity is required on when the KPI requirement commences. Typically, if this is for Dark Fibre, we would require customer notification of fault as proactive monitoring is not possible.

Mobile Services General

QoS Parameter	Minimum Requirement	Vodafone Comment
Network Quality	≥98.5%	This should exclude sea facing border cells. Cell exclusion should be based on minimum call volume. External interference and jammers and not based on any benchmarking. If it was, then we need reference. The KPI's being requested are too high.
Network Availability	≥99.95%	Assessing the indoor target is difficult and needs further discussion to agree some assumptions around the required outdoor signal strength v assumed indoor strength. Outdoor requirements should be based on a simulation test and on a wide band scanner, not on phone. Grid size of 100mx100m. Please see general comments above in relation to signal strength. Vodafone would appreciate more discussion with all stakeholders on whether this approach best meets the objectives of ictQATAR or whether there may be a more effective approach.

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Mobile Voice

QoS Parameter	Minimum Requirement	Vodafone Comment
Call Setup Success Rate (CSSR)	≥99.0%	If the call blocking is 1.5% then CSSR cannot be better than 99%. Vodafone proposes to keep at earlier level of 98% and measure for on-net only.
Dropped Call Rate (DCR)	≤0.5%	Definition of specific location and given times should be specified.
Blocked Call Rate	< 3%	Vodafone cannot report on individual cells and only on network levels. This is contradictory to CSSR as BCR is the reciprocal of CSSR. Vodafone suggests either one as reporting on both will serve no purpose. We also need to exclude force majeure: e.g. earthquake
Voice Quality Parameter	MOS (Mean Opinion Score) value ≥ 4. 100%	This should only be measured using a drive test. Vodafone proposes a minimum MOS of 2.8 based on international standards. 100% success rate is not realistic as it does not allow for even 1 failure. Vodafone proposes 95% as more realistic target.
Call set-up time Percentage of calls with call setup time under than 5 seconds.	100%	Vodafone can only commit to a call set up time for on net traffic – calls originating and terminating on VF network. Calls that terminate off net (to Ooredoo, PSTN, international etc.) should not be included in this measurement as they include elements that are outside of the control of VF network.

Mobile Broadband

QoS Parameter	Minimum Requirement	Vodafone Comment
Speed / data rate	95%	Minimum mobile speed is not determined. Tariffs are based on volume, not speed. Also dependant on handset capability.
Web browsing	Rate of successful radio connection within 10 sec. 96% within 20 sec. 99.5%	A successful connection between mobile and network (within our control) has no bearing on whether the user can successfully connect to a web site.
Successful data transfer (uplink and downlink)	99.60%	Minimum mobile speed is not determined. Tariffs are based on volume, not speed. Also dependant on handset capability.

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Video Streaming	<ul style="list-style-type: none"> • Percentage of successful access to a 3 mn video - 98% • Percentage of successful streaming (non-dropped sequences) of a 10 mn video without interruption 99.9% • Percentage of good quality streaming of a 10 mn video without Buffering / pixels / freezing and /or any distorted images - 99.8% 	Minimum mobile speed is not determined. Tariffs are based on volume, not speed. Also dependant on handset capability.
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Mobile Number Portability

QoS Parameter	Minimum Requirement	Vodafone Comment
MNP - Successful port completion	90% within 24 hours from a valid request 95% with 48 hours 99.8% within 72 hours	ictQATAR's Number Portability Policy states that MNP windows are only on official working days, so to have a measurement that is based on 24 clock hours is not in accordance to the MNP requirements. Also the measurement is end to end as far as the user is concerned. As one operator will be a donor and the other operator will be a recipient – a successful port is dependent on both, therefore the submitted data should be the same for both parties.
MNP – Access and/or use of Critical Services	Mobile origination: voice call and SMS - 90% within 1 hour Mobile termination: voice call and SMS - 95% within 4 hours Data connectivity Incomplete or failed Port - 99.9% within 24 hours	These parameters should be governed by the Code of Practice (CoP) and should remain there or at least be aligned to the CoP.
MNP – Access and or use of Services	30 Calendar Days	The intent of this measure is unclear. Further discussion is required to understand the proposed requirement.

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Customer Relations

QoS Parameter	Minimum Requirement	Vodafone Comment
Customer complaints		
Response time by customer support centre - telephone		These response times do not allow for possible market segmentation where different types of customer profiles receive different levels of service.
Response time by customer support centre – emails and electronic complaints		
Billing complaints		
Refunds and compensation		
Complaints related to Lack of Transparency, unclear, inconsistent or misleading T&C		
Number Portability Related complaints		
Reconnection and activation of Service after bill settlement		

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Advance Notice prior to planned services disruptions/outage		Vodafone cannot accept this KPI as it affects our ability to manage out network in a timely manner. Vodafone will not be able to report every outage within a 5 day window and it is not clear why ictQATAR would require such notice
Unplanned Notifications of service disruptions or outages		Vodafone does not generally provide SMS as the network is already down and the SMS will also not reach customers. Also, in case only segments of customers are affected then it's very difficult to segregate and send SMS

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