

**Instruction on the
Setting of QoS parameters and the methodology for the assessment of coverage**

Consultation Document

22 July 2013

Ministry of Information & Communication Technology

Comments in response are due by 1 September 2013

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1 Introduction

The telecommunication sector in Qatar is characterized by a low level of competition. The mobile market is a vested duopoly, where Ooredoo and Vodafone are active, but Ooredoo maintains a stable market share of approximately 75%. A competitor to Ooredoo has yet to emerge in the fixed market. Vodafone relies mainly on the QNBN network to offer its fixed services - with very limited rollout by QNBN and nearly no rollout by Vodafone - Ooredoo's position is that of a near monopoly.

In this context, despite falling prices for voice services, total revenue has increased since the opening of the market in 2009. Ooredoo's total profit and EBITDA remain at Q1/2008 level, i.e. pre-market opening level and Ooredoo's EBITDA margin is still over 50%.

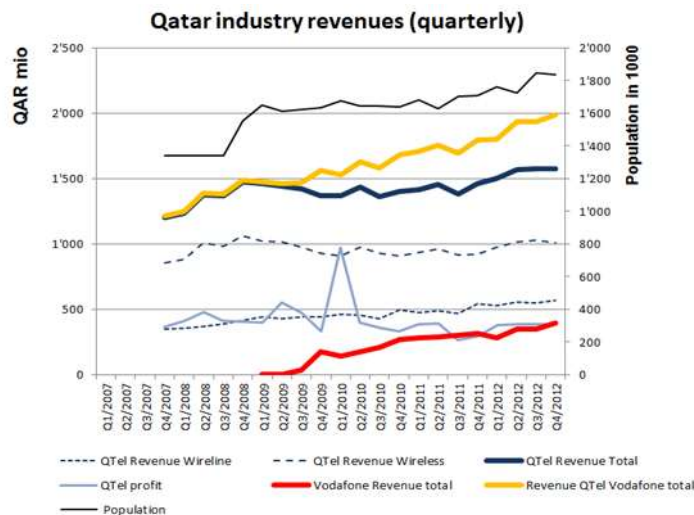


Figure 1 Development of the key financial figures (Source: Market reporting of the Service Providers)

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.

The State of Qatar has set very ambitious objectives for the telecommunication sector in Qatar 2030 Vision, as developed within the ICT Plan for 2015, as well as Qatar National Broadband Plan.

The current QoS provided to customers in Qatar is not in line with this ambition:

1. QoS reports prepared by holders of one or more licenses ("**Service Providers**") on a 'self-assessment' basis and provided to Ministry of Information and Communication Technology on a regular basis, show that full compliance with the QoS parameters mandated in their respective licenses is not achieved.
2. An independent survey of Ooredoo's and Vodafone's network coverage and QoS commissioned recently by Ministry of Information and Communication Technology shows that current coverage and QoS obligations set in the telecommunication licenses:
 - are, to a large extent, not very arduous compared to the highest international parameters;
 - are outdated, as they do not encompass the latest services and customers' uses of telecommunication services;
 - do not reflect the real customer experience (technical approach vs. end-to-end experience);
3. License conditions are discriminatory between service providers (e.g.: Ooredoo obligations are less comprehensive than Vodafone's).
4. The number of complaints from customer received by Ministry of Information and Communication Technology is steadily increasing.

Several years after their licenses were granted, Service Providers are still not fulfilling all the existing coverage and QoS obligations and are not meeting customer expectations.

Therefore, in a Decision issued on 13 March 2013, Ministry of Information and Communication Technology's Board of Directors initiated a process to review the coverage and QoS obligations of the Service Providers.

This revision is crucial also to help support the development of the State of Qatar in achieving the Qatar 2030 Vision, ICT Plan for 2015, as well as Qatar National Broadband Plan.

This consultation document sets out the QoS requirements which, when finalized, will apply to the holders of licenses for the provision of telecommunications networks and services in Qatar, including:

- a) Public Fixed Telecommunications Networks and Services ("**Fixed License**");
- b) Public Mobile Telecommunications Networks and Services ("**Mobile License**");
- c) Passive Fixed Telecommunications Networks and Services ("**Passive License**").

Service Providers are currently subject to minimum requirements for e.g. QoS and coverage in accordance with the terms and conditions prescribed in Annexures E and G of each license. Technology advancements and service evolution have resulted in a need to review and revise the current QoS and coverage parameters to ensure that they remain relevant to meeting the requirements and expectations of today's customers.

To that end, Ministry of Information and Communication Technology intends to revise the existing QoS and coverage requirements prescribed in the licenses of the providers of telecommunication services in Qatar through a QoS Instruction. The relevant Annexes of the Licenses will be superseded by this QoS Instruction.

New QoS parameters are also proposed to be included as part of the Instruction.

These 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.

All stakeholders and interested parties (e.g., customers, government entities, academia, etc.) and concerned parties are invited to review this document and submit comments to Ministry of Information and Communication Technology following the procedures set out in Section 5.

2 Legal Basis

The following legal provisions provide the basis for the QoS Instructions, but not exhaustively.

Article 4(8) of the Telecommunications Law of 2006 ("the Law") empowers Ministry of Information and Communication Technology (formerly ictQATAR) to safeguard the interests of customers, including the setting of tariff regulation and criteria for QoS, and monitoring the terms and conditions of telecommunications services provision.

Article 101 of Executive By-Law 1of 2009 for the Telecommunications Law ("Executive By-Law") prescribes that Ministry of Information and Communication Technology (formerly ictQATAR) shall set the minimum QoS parameters and may have them amended following consultation with the related Service Providers. Ministry of Information and Communication Technology (formerly ictQATAR) may include those criteria in the licenses, or issue them by an order from it, which shall include reporting obligations.

The above-mentioned licenses authorize the Service Providers to provide the specified telecommunications networks and services in accordance with the terms and conditions of the licenses and its annexures, relevant legislation, international treaties, and any regulations, including instructions issued by Ministry of Information and Communication Technology before or after the effective date of the licenses. Accordingly, Ministry of Information and Communication Technology may from time to time issue additional requirements as part of the terms and conditions of the licenses which are binding on the Service Providers.

The considerations listed above justify without any doubt the need to modify the licenses.

3 QoS and coverage parameters

Service Providers are required to comply with the QoS requirements as set out in of these Instructions. Annexure E (Obligations relating to provision and quality of service (“QoS”) to retail customers) will be deleted from the licenses and is effectively replaced by the QoS requirements set out in Annex I.

Service Providers shall seek Ministry of Information and Communication Technology approval for any scheduled outage in their network in the perspective of maintenance. (“Authorized downtime”). To that regard, Ministry of Information and Communication Technology will define relevant processes with the Service Providers.

Service Providers are required to:

- Fulfill 85% of the total number of additional QoS requirements specified in Annex I (new requirements introduced in addition to those listed in the existing Annexure E) within six (6) months following the issuance of these Instructions; and
- Fulfill 100% of the total number of QoS requirements specified in Annex I within eighteen (18) months following the issuance of these Instructions.

The requirements as set out in Annex II of these Instructions will amend the relevant part of Annexure G (Network roll-out and coverage obligations) of the licenses.

Ministry of Information and Communication Technology will issue a comprehensive QoS Framework which may address, inter alia, measurement methodologies to be followed to assess the Service Provider fulfillment of their obligations. In the meantime, Service Providers shall follow the measurement methodologies set in their licenses, as detailed by Ministry of Information and Communication Technology in various correspondences.

3.1 Reporting

Service Providers shall deliver to Ministry of Information and Communication Technology a written QoS Compliance Report (QCR) each quarter in the form and detail prescribed by Ministry of Information and Communication Technology and setting out therein the Service Provider’s actual results for each QoS requirement. The schedule for the submission shall be:

QCR reporting period	QCR submission date
1 st January to 31 st March	By 31 st May of the same year at the latest
1 st April to 30 th June	By 31 st August of the same year at the latest
1 st July to 30 th September	By 30 th November of the same year at the latest
1 st October to 31 st December	By 28 th February of the next year at the latest

Service Providers shall deliver to Ministry of Information and Communication Technology a written Coverage Report each year, in the form and detail prescribed by Ministry of Information and Communication Technology and setting out therein the Service Provider’s actual results for each Coverage requirement. The schedule for the submission shall be as follows:

Coverage reporting period	Coverage report submission date
1 st January to 31 st December	By 28 th February of the next year at the latest

Ministry of Information and Communication Technology may carry out at Service Providers’ expenses, an annual sample testing and deliver accordingly a special report in accordance with these Instructions.

Ministry of Information and Communication Technology may require a Service Provider to conduct a full independent audit of its network to determine compliance with the required parameters.

If any of the QoS reports mentioned in the preceding paragraphs show that a QoS parameter has not been met, the Service Provider shall explain the reasons for the failure and the steps it has taken or shall take to meet the required

parameters. The Service Provider has to bring the breach into line within thirty (30) days of the date of the QoS report.

Ministry of Information and Communication Technology shall advise the Service Provider within sixty (60) days of receipt of a QoS report that includes an explanation regarding non-compliance whether it accepts the reasons provided by the Service Provider for not meeting the required parameters. If a reply is not provided within the above-mentioned period, or if a specific delay to answer is not set by Ministry of Information and Communication Technology, the QoS report including the explanation shall be deemed accepted by Ministry of Information and Communication Technology.

If the Service Providers delivers, within a thirty day (30) period, a substantiated report demonstrating that the breach has been remedied, the matter is closed.

If the breach persists and Ministry of Information and Communication Technology rejects the explanation for not meeting the required parameters, it shall proceed with enforcement action.

3.2 Performance Bonds

Consistent with the terms above and in accordance with Annexure K of their respective licenses, Service providers must execute and provide to Ministry of Information and Communication Technology a Performance Bond, payable to Ministry of Information and Communication Technology for an amount calculated on the basis of one hundred thousand QAR (100,000) per applicable parameter per month, guaranteeing the fulfillment of each Service Provider Secured Obligations regarding the QoS Instruction for each financial year.

The Performance Bonds shall be in the form of a bank guarantee issued by a bank operating in the State of Qatar and shall provide for an unconditional and irrevocable undertaking on the part of the issuing financial institution to pay the amount stipulated by this Instruction, or any subsequent amendment, for the Secured Obligation in question.

Within twenty-one (21) days of the date of this Instruction, each Service Provider must submit to Ministry of Information and Communication Technology for approval the name of the financial institution it has selected to issue the bond. The Performance Bond must be executed and provided to Ministry of Information and Communication Technology within two weeks of Ministry of Information and Communication Technology's approval of the issuing financial institution. The Completion Deadline for this Performance Bond will be January 1st, and the Performance Bond for a given financial year shall remain in force for a period of nine (9) months following the Completion Deadline. In the case of a dispute with respect to the Service Provider's compliance with the Secured Obligation, the term of the bond shall be extended automatically in accordance with the provisions of Annexure K of the licenses.

Each Service Provider shall procure that the issuing financial institution shall undertake, irrevocably and unconditionally, to pay to Ministry of Information and Communication Technology the full value of the Performance Bond pertaining to a specific Secured Obligation on demand if and when Ministry of Information and Communication Technology provides such institution with written notice confirming that the conditions for payment have been met. Such notice shall be delivered by Ministry of Information and Communication Technology to the issuing financial institution prior to the expiry of the relevant component of the Performance Bond, including any extensions thereto that may be notified by Ministry of Information and Communication Technology in accordance with the provisions of Annexure K of each Service Provider license.

The terms of the Performance Bond shall make clear that the issuing financial institution's obligation to pay shall not be excused for any reason, including but not limited to: any dispute regarding the Service Provider's performance under the QoS Instruction; external factors allegedly affecting performance under the QoS Instruction; or any alleged act or omission by Ministry of Information and Communication Technology or any third party.

Any dispute concerning the Performance Bonds shall be resolved exclusively in accordance with the procedures set forth in Section 2 of Annexure K of the Service Provider License.

3.3 Enforcement of these Instructions

Service Providers are required to comply with these Instructions upon issuance of the final QoS Instruction document.

Notwithstanding any other legal action, Ministry of Information and Communication Technology is entitled, pursuant to Sections 102 and 103 of the Executive By-Law, to do the following to address non-compliance with the required QoS parameters:

- i. state the steps the Service Provider shall take and the time frame within which those steps shall be taken including submission of additional reports by the Service Provider until such time the required parameter is met;
- ii. require specific customer refunds or any other form of customer compensation;
- iii. require the Service Provider to publish all of the QoS reports or parts thereof; or,
- iv. require the Service Provider to publish any information relating to QoS in Arabic and English and in two local newspapers.

In addition, Ministry of Information and Communication Technology may:

- i. publish on its website and/or issue a press release, the results of the Service Providers' compliance with the QoS obligations in full or in summary form, including comparison with other service providers and international benchmarks; and
- ii. call in the relevant Performance Bonds based on one hundred thousand QAR (100,000) per month per established non-compliance.

3.4 Effect of these Instructions

The current QoS obligations contained in Annexure E of the above licenses are superseded by these Instructions.

These Instructions shall prevail in the event of any inconsistency with the coverage obligations prescribed in Annexure G of the above licenses.

4 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?
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.
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.
Question 4	Comments are invited on the proposed timeframes for compliance with the QoS requirements.
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? Please support your proposals with justification.

5 Instructions for Responding to this Consultation

5.1 Consultation procedures

All interested parties are invited to submit responses to the questions specifically identified in this document and to provide their views on any other relevant aspects. Comments should reference the number of the question being addressed or the specific section of this document if not responding to a particular question.

Ministry of Information and Communication Technology asks that, to the extent possible, submissions be supported by examples or relevant evidence. Any submissions received in response to this consultation will be carefully considered by Ministry of Information and Communication Technology when progressing to revised QoS Instruction. Nothing included in this consultation document is final or binding. However, Ministry of Information and Communication Technology is under no obligation to adopt or implement any comments or proposals submitted.

Comments should be submitted by email to raconsultation@ict.gov.qa on **01 September 2013 at the latest**. The subject reference in the email should be stated as "QoS Instruction". It is not necessary to provide a hard copy in addition to the soft copy sent by email.

5.2 Publication of comments

In the interests of transparency and public accountability, Ministry of Information and Communication Technology intends to publish the submissions to this consultation on its website at www.ictqatar.qa. All submissions will be processed and treated as non-confidential unless confidential treatment of all or parts of a response has been requested.

In order to claim confidentiality for information in submissions that stakeholders regard as business secrets or otherwise confidential, stakeholders must provide a non-confidential version of such documents in which the information considered confidential is blacked out. This "blacked out" should be contained in square brackets. From the non-confidential version it has to be clear where information has been deleted. To understand where redactions have been made, stakeholders must add indications such as "business secret", "confidential" or "confidential information".

A comprehensive justification must be provided for each and every part of the submission required to be treated as confidential. Furthermore, confidentiality cannot be claimed for the entire or whole sections of the document as it is normally possible to protect confidential information with limited redactions.

While Ministry of Information and Communication Technology will endeavor to respect the wishes of respondents, in all instances the decision to publish responses in full, in part or not at all remains at the sole discretion of Ministry of Information and Communication Technology. By making submissions to Ministry of Information and Communication Technology in this consultation, respondents will be deemed to have waived all copyright that may apply to intellectual property contained therein.

For more clarification concerning the consultation process, please send your queries by email to raconsultation@ict.gov.qa.

Annex I QoS Requirements

1 Fixed Services

1.1 Fixed services- General requirements

QoS parameter	Description	Minimum acceptable performance level	
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%
		within 9 calendar days	100%
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 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>	< 0.5%	
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: $\{ \text{Sum [Per distribution circuit in-service minutes in a month]} / (\text{per distribution circuit in-service minutes in a month} + \text{per distribution circuit out-service minutes in a month}) \} \times 100\%$</p>	99.85%	
Fault repair time	<p>Time to repair a service from the time the service providers receives a valid notification from the customer</p> <p>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 delay, <p>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.</p> <p>All calendar days (including Fridays and public holidays) must be included in the calculation.</p>	Within 24 hours	90%
		Within 72 hours	99.9%
		1 hour	98%
	Due to the specific nature of Emergency Services, Time to repair from the time the service providers receives a valid notification from the customer.		

	Services to Enterprises/SME: when a SLA is provided by the SP	Within the time frame specified in the SLA	99.5%
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1.2 Fixed Services - Voice

Successful call ratio	Ratio of successful calls to the total number of call attempts in a specified time period. Calls that are successful are defined as “either busy tone, ringing tone, answer and feedback signals within 30s”	national	99%
		international	95%
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 or ringing tone or answer signal is received by the calling party.	national	< 3s
		international	< 4s
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%	
Call drop rate	Percentage of calls dropped measured over a period of one month	0.5%	
Voice quality (MOS)	Mean Opinion Score.	4	

1.3 Fixed Services – Broadband

End to End network availability	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. Network Availability = (Total operational minutes – Total minutes of service downtime) x 100% Total operational minutes. 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.	99.85%	
Network Latency	Round-trip delay (in ms) in the relevant segment of the broadband network (measured by PINGs): <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); The target, in “x msec”, represents the maximum network		
		80ms	
		≤300ms	
		≤800ms	

	latency (for round-trip) experienced by end-users for 95% of the time during peak hours. 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.		
Bandwidth utilization	Highest Bandwidth Utilization = (peak utilization level in each segment) / (total bandwidth available for that segment).	Maximum 85% for more than 2 consecutive months	
	Bandwidth utilization from the service provider Point of Presence (PoP) to the internet gateway of the “upstream service provider” Broadband providers are required to run “Monthly” MRTG Graphs to obtain average bandwidth utilization for each month for every segment.	Maximum 90% for more than 3 consecutive months	
Speed / data rate	This measures the actual speeds that are advertised or offered in 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.	90% of the advertised speed and according to the tariff filing, all the time and everywhere	
Minimum speed offered	Access to at least 100Mbit/s effective download and 50Mbit/s effective upload speeds Businesses, schools, hospitals and government institutions to have access to at least 1Gbit/s effective symmetrical speeds Note: to be adapted according to Qatar National Broadband Plan	95% of households by 2015 98% by 2015	
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%
		within 20 sec.	99.99%
Successful data transfer (uplink and downlink)	Actual data transfer at the offered speed or in terms of the approved tariff.	99.8%	
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%	
Video Streaming (End to End Quality rate)	Percentage of successful access to a 10 mn video	99.8%	
	Percentage of successful streaming (non-dropped sequences) of a 10 mn video without interruption	99.95%	
	Percentage of good quality streaming of a 10 mn video without buffering/pixels/freezing and /or any distorted images.	99.9%	

1.4 Fixed Services – Leased lines

QoS parameters	Description	Minimum performance level	acceptable level
Supply time	Percentage of leased circuits provided within the timeline agreed with the client. Applies to local, national and international leased lines.	within 5 calendar days	95%
		within 20 calendar. days	100%

	Measurement method: ([Total no. of leased circuits provided within date agreed with customers] / [Total no. of leased circuits required]) x 100%	Civil work needed: 60 calendar days	95%
Daily Faults rate	Daily Fault rate is the percentage of fault reports within a day reported per access line on a monthly basis. 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.	< 0.5%	
Fault repair time	This is the time to repair and shall be calculated from the time the fault is reported by the customer to the service provider. Measurement method: Total number of hours taken to repair faults for all leased circuits] / [Total number of leased circuit faults reported]	24 hours	99%
		72 hours	99.9%
Service availability	Percentage of all hours (or portion thereof) of a month for which a specific leased line is available. $SA = \{(A - B) / A\} * 100$ Where A= Total number of hours of the month B=Total hours of outage in a month for a specific leased line.	99.9%	
Availability of Access Network	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. 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%	99.95%	
Agreed bandwidth	Percentage of the committed speed according to the filing all the time and everywhere.	95%	

1.5 Fixed services – Specific passive services

QoS parameter	Description	Minimum acceptable performance level
Service Supply Time (SST)	Percentage of end to end connections (which excludes 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.	90%
Mean Time to Restore (MTTR)	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. The MTTR is calculated as follows: $\Sigma X / Y$ Where: X = time taken to restore fault incidents for each connection of a specific service during a quarter Y= total number of affected connections in the same period. This excludes fault incidents where the Service	24 hours

	Provider is prevented or restricted from restoring the service owing to matters that are not within the Service Provider's control.	
Service Availability (SA)	<p>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> $SA = \{(A - B) / A\} * 100$ <p>Where: A= total hours of the month * the total number of connections in the network B= total service outage time for the all affected connections in the same month (in hours).</p>	<p>Alternative: $\geq 99.8\%$ OR Remove the SA parameter for passive fixed services QoS requirements</p>

2 Mobile Services

2.1 Mobile services - General requirements

QoS parameters	Description	Minimum acceptable performance level
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% or lower dropped call rate and a call set up success rate of 99% or higher divided by the total number of operational cells".	$\geq 98.5\%$
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 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>	$\geq 99.95\%$

2.2 Mobile services – Voice

Call Setup Success Rate (CSSR)	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).	$\geq 99.0\%$
Dropped Call Rate (DCR)	This measures the dropped call rate over the busiest part of the network on a specific location and at a given time. 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.	$\leq 0.5\%$
Blocked Call Rate (BCR)	Blocked call means a call that is not connected because there is no free channel in radio access network to serve a call attempt. 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	A & B: To be Monitored C: < 3%

	channel congestion.(TCH in 2G RAB in 3G) A. Total number of cells at active in the network at the end of the respective period. B. BCR % of the most congested cell during busy hour in the network. C. % of cells with >1% traffic or 0.5% signaling channel blocking during busy hour.	
Voice Quality Parameter	The Voice Quality Parameter is the percentage of calls with MOS (Mean Opinion Score) value ≥ 4 .	100%
Call set-up time	Percentage of calls with call setup time under than 5 seconds.	100%

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%	
Web browsing successful connection	Rate of successful radio connection	within 10 sec.	96%
		within 20 sec.	99.5%
Successful data transfer (uplink and downlink)	Actual data transfer at the offered speed or in terms of the approved tariff.	99.6%	
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.	99.6%	
Video Streaming (End to End Quality rate)	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%	

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
	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
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

MNP – Access and or use of Services	<p>All other issues, e.g.:</p> <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
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3 Customer relation (all services)

QoS parameters	Description	Minimum acceptable performance level	
Customer complaints	Number of customer complaints (valid complaints, not enquiries) received per 100 subscriptions.	< 0.5%	
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	
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.	
Bill accuracy complaints	The number of complaints received by the service provider on bill accuracy per 100 customers.	< 0.3%	
Billing complaints (BC)	<p>Number of billing complaints received (each instance of a complaint being counted) divided by the corresponding number of total bills issued.</p> <p>A billing complaint should not be confused with a billing query (a request for information) or with a fault report.</p>	<= 3% of invoices issued	
Time to resolve billing complaints	Time to resolve a billing complaint from the time a complaint is received by the 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.	5 calendar days	98%
		30 calendar days	100%
Refunds and compensation	Delay for refunds/compensation to be received by customers	12 calendar days for 98% of complaints.	
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	
Number Portability Related complaints	Number of days to solve Number Portability complaints	5 days.	99.5%
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%
		24 hours	100%

<p>Advance Notice prior to planned services disruptions/outages</p>	<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 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>99.5%</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. 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>

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)

Table 1

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

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.

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.