

বাংলাদেশ



গেজেট

অতিরিক্ত সংখ্যা
কর্তৃপক্ষ কর্তৃক প্রকাশিত

রবিবার, নভেম্বর ১১, ২০১৮

[বেসরকারি ব্যক্তি এবং কর্পোরেশন কর্তৃক অর্থের বিনিময়ে জারীকৃত বিজ্ঞাপন ও নোটিশসমূহ]

Bangladesh Telecommunication Regulatory Commission

NOTIFICATION

Date : 02-07-1425/17-10-2018

S.R.O No. 307-Law/2018.—In exercise of the power conferred by section 99, read with section 54, of Bangladesh Telecommunication Regulation Act, 2001 (Act No. 18 of 2001), the Commission, with the prior approval of the Government, is pleased to make the following Regulations, namely—

1. Short title, commencement and application.—(1) These Regulations may be called ‘the Bangladesh Telecommunication Regulatory Commission (ANS Operator’s Quality of Service) Regulations, 2018’.

(2) It shall come into force immediately.

(3) It shall be applicable to all Access Network Service (ANS) operators providing—

(i) Broadband Access Services;

(ii) Cellular Mobile Phone Services;

(iii) Fixed Telephony Services;

(iv) Any other service introduced by Bangladesh Telecommunication Regulatory Commission (BTRC) through administrative order from time to time.

2. **Definitions.**—In these Regulations, unless there is anything repugnant in the subject or context :—

- (a) **‘Act’** means the Bangladesh Telecommunication Regulation Act, 2001 (Act No. 18 of 2001);
- (b) **‘ANS Operators’** means Access Network Service Operators who have direct access with the subscribers;
- (c) **‘Broadband Access Service’** means a connectivity of communication bandwidth service that has a minimum downstream capacity as specified by the respective authority from time to time;
- (d) **‘Commission’** means the Bangladesh Telecommunication Regulatory Commission (BTRC);
- (e) **‘Cellular Mobile Phone Service’** means an application of service involving a network of base stations or cells for the delivery of voice and data communications with mobility;
- (f) **‘Licence’** means a licence issued under the Act;
- (g) **‘Operator’** means the operator as defined in section 2(19) of the Act;
- (h) **‘Quality of Experience (QoE)’** means the overall acceptability of an application or service, as perceived subjectively by the end-user;
- (i) **‘Quality of Service (QoS)’** means the main indicators of the performance of a telecommunication network and of the degree to which such network conforms to the standards as specified in these Regulations for specified parameters;
- (j) **‘Schedule’** means the schedule of these Regulations;
- (k) **‘Service Provider’** means any ANS operator to which these Regulations shall apply;
- (l) **‘Telecommunication’** means the telecommunication as defined in section 2(11) of the Act;
- (m) **‘Telecommunication Network’** means the telecommunication network as defined in section 2(14) of the Act.

3. Standards of Quality of Service.—(1) The following criteria shall be considered as standards of Quality of Service (QoS)—

- (a) respective Service Provider shall comply the specified QoS benchmarks as mentioned in the tables of Schedule-1;
- (b) Service Provider shall meet the QoS standard for Overall Network, City Corporation Area Level, District and Upazila Headquarters and rest of the licensed areas in Bangladesh separately in respect of each parameter specified in tables, namely Table-1, Table-2, Table-4, Table-5 of Schedule-1;
- (c) in respect of each parameter specified in Table-3 of Schedule-1, the service provider shall measure the parameters through drive tests of the Cellular Mobile Network at periodic intervals and take remedial action to address problems related to coverage, Mean Opinion Score (MOS), Call Setup Time, Circuit Switched Fall Back (CSFB) Call Setup Time, Call Setup Success Rate, Call Drop, Data Throughput etc. revealed during such drive tests;
- (d) BTRC may, on random basis or according to complaint(s) regarding QoS issue on a specific zone or area, from time to time, through inspection, sample test (or any other measurement method) either by its own officers or employees or through an agency appointed by it or joint measurement conducted with service providers, verify and assess the performance of service providers against the QoS benchmarks of each parameter for the telecom service specified in Schedule-1;
- (e) benchmarking modality and description of the parameters shall be made according to Schedule-2. In respect of each parameter specified in Table-3 of Schedule-1, the Commission may assess the quality of the service through drive tests of the Cellular Mobile Network conducted either by its own officers or employees or by appointed agency or joint drive tests along with the service provider;
- (f) in respect of a drive test of Cellular Mobile Phone network and sample test of Broadband Access Network or Fixed Telephony network or any other measurement method conducted by the

Commission, if any shortcomings or deficiencies identified or found by the said test, Commission shall notify the service provider to resolve the shortcomings or deficiencies and the service provider shall—

- (i) resolve the said shortcomings or deficiencies and submit a compliance report to the Commission within 30 (thirty) days after getting notice from the Commission; or
- (ii) if the service provider fails to resolve the shortcomings or deficiencies within such time frame as indicated in regulation 3(1)(f)(i), shall make an application to the Commission for extension of time within 30 (thirty) days from the date of notification and the Commission may consider the said application by its own motion;
- (g) Government may issue any specific instruction, direction, order or any other instrument whatsoever for implementing an imposition relating QoS and the service providers shall comply with all necessary measures accordingly.

(2) The Commission may, by gazette notification relax the application of these Regulations, during any natural disaster, war or any other unavoidable circumstances in the affected areas.

4. Record Keeping.—(a) Every service provider shall preserve complete and accurate records required to find the value of each quality of service parameter specified of Schedule-1 for at least 1(one) year after submission of the report to the Commission;

(b) For the drive test Key Performance Indicator (KPI)s specified in Table-3 of Schedule-1, drive test log and web mapping tab shall be stored and for the network KPIs specified in Table-1, Table-2, Table-4 and Table-5 of Schedule-1, system generated raw file shall be stored without modification for the period specified in regulation 4(a);

(c) The Commission may, if required, direct any of its officer or an agency appointed by the Commission for the purpose of inspecting or auditing the records maintained by the service providers against each parameter under these Regulations or to get such records inspected or audited to ensure compliance of the provisions of these Regulations at any time.

5. Reporting.—(a) Every service provider shall submit monthly reports on its compliance to the Commission with each of the QoS standards specified in Table-1, Table-2, Table-4 and Table-5 of Schedule-1, within next 10 (ten) days after the end of each month in the format specified by the Commission;

(b) In respect of each parameter specified in Table-3 of Schedule-1, service provider shall submit compliance report for any area as may be specified by BTRC for QoS measurement from time to time.

6. Publications.—(1) The Commission may publish the following records, in such manner and format, as may be decided by the Commission from time to time—

- (a) compliance reports about benchmarks of each QoS parameter reported to the Commission by the service providers in accordance with these Regulations;
- (b) results of the drive test or any other measurement method, inspection or system, audit undertaken by the Commission or its authorized agency;
- (c) results of the customer satisfaction surveys undertaken by the Commission through its website or through media for the information of the general public.

(2) Every service provider shall publish, for the information of the consumers, its performance with respect to the benchmark of QoS parameter specified in these Regulations in such manner and in such format, as may be directed by the Commission from time to time.

(3) BTRC may publish the ranking of the service providers in terms of QoS from different evaluation processes such as Customer Survey, Results of the inspection or audit, drive test or any other measurement method and the self-reporting of the service provider through its website or media to raise public awareness, to create condition for competitive environment and to oblige the service provider for better quality.

7. Amendments.—(a) The Commission may amend by Gazette notification the QoS or descriptions of parameters specified in Schedule-1 and 2 from time to time ;

(b) The Commission, on reference from any affected party, may amend, after prior approval of the Government, these Regulations.

8. Interpretation.—In case of any doubt regarding interpretation of any of the provisions of these Regulations, the clarification of the Commission shall be final and binding.

9. Penalty for violations of certain regulations.—If any service provider violates any provision of regulations No. 3, 4, 5, 6(2) or Schedule-1 and 2, the Commission may take action following the provisions of section 64 of the Act for such violation.

10. Repealing and saving.—(1) On the commencement of these Regulations, Directives on QoS for Cellular Mobile Telecom Operators bearing reference No. 14.32.0000.008.48.001.13-0.1262; dated 22-08-2017, hereinafter called the repealed Directives, shall stand repealed.

(2) Notwithstanding such repeal, any act done or any action taken under the repealed Directives shall, so far as it is consistent, be deemed to have been done or taken under these Regulations.

Schedule-1
(See regulation-3)
QoS Standards

Table 1 : QoS Benchmarks for Broadband Access Service:

Sl No	QoS Parameters	Benchmarks	Averaged over a period of
1	Ping Round Trip Time [ms]	<= 30 ms (Fixed Line Broadband) <= 60 ms (Wireless Broadband)	One Month
2	Packet Loss (%)	<= 3%	One Month
3	Broadband Speed	DL >= Mbps, UL >=1 Mbps	One Month

Table 2: QoS Benchmarks for Cellular Mobile Phone Service:

Sl No	QoS Parameters	Benchmarks	Averaged over a period of
1	CS KPI		
1.1	Call Setup Success Rate	>=97%	One Month
1.2	Call Drop Rate	<=2%	One Month
1.3	Completion Rate for SMS Service	>=98%	One Month
2	PS KPI		
2.1	Data Throughput	DL (2G)>=80 Kbps, UL (2G)>= 20 Kbps	One Month
3	Operational KPI		
3.1	Accumulated Down Time of BTSS, NodeBs and eNodeBs	<= 1%	One Month

Table 3: QoS Benchmarks for Cellular Mobile Phone Service (Drive Test):

Sl No	QoS Parameters	Benchmarks
1	Service Coverage	Out-door Coverage: City Corporations Area ≥ -80 dBm Rest of the licensed Area ≥ -90 dBm
2	Call Setup Success Rate	$\geq 97\%$
3	Call Drop Rate	$\leq 2\%$
4	Mean Opinion Score (MOS)	≥ 3.5
5	Call Setup Time	≤ 7 sec
6	CSFB Call setup time (4G/LTE)	≤ 8 sec
7	Data Throughput (FTP)*	DL(3G) ≥ 2 Mbps; UL(3G) ≥ 128 Kbps DL(4G) ≥ 7 Mbps; UL (4G) ≥ 1 Mbps

**Note: Considering practical aspects such as technological changes, spectrum availability and usage, market scenario etc. the average DL 4G Data Throughput (FTP) requirement can be revised from time to time.*

Table 4: QoS Benchmarks for Fixed Telephony Service:

Sl. No	Qos Parameters	Benchmarks	Averaged over a period of
1	Call Drop Rate	$\leq 2\%$	One Month
2	Call Setup Success Rate	$\geq 97\%$	One Month
3	Call Setup Time	≤ 7 sec	One Month

Table 5: QoS Benchmarks for Billing Accuracy and Complaint Handling:

**

Sl. No	Qos Parameters	Benchmarks	Averaged over a period of
1	Billing Accuracy		
1.1	Resolution of billing complaints	100% within 28 days	One Month
2	Complaint Handling		
2.1	Promptness in answering calls for assistance in Customer Care	90% within 40 sec 100% within 90sec	One Month
2.2	Promptness in resolving customer complaints	90% within 05 working days	One Month

**** Note:** KPIs listed in Table 5 shall be applicable for all ANS operators.

Schedule-2

[See regulation 3(1) (e)]

Descriptions of Parameters

A. Broadband Access Service KPI

Network Latency (Ping Round Trip Time): Average (Round_trip_time) for successful ping tasks only i.e. which is more than zero to travel across the network from the end user to Interconnection Exchange (NIX) and back to end user.

Packet Loss: This indicator measures the percentage of the data packets transmitted from the source and fails to arrive at their destinations. It is computed based on the average of the sampling measurements between the end user and NIX.

Formula:

$$(\text{Total Number of Packet Loss} \times 100\%) / \text{Total Number of Packet Sent}$$

Broadband speed: This indicator measures the speed of uploading and downloading data measured in units of megabits per seconds Mbps between the end user and NIX.

N.B.: Monthly value of these QoS parameters will be computed by averaging the daily network Busy Hour (NBH) value of the whole month. The basic measurement set-up consists of a Test-Device and a Test-Server with specified software and hardware. Test calls have to be established between the Test-Device and Test-Server and measurements must be made for the respective QoS parameters. Details of test methodology will be defined by BTRC through administrative order from time to time.

B. Cellular Mobile Phone Service KPI

Call Setup Success Rate : $(\text{Call Attempt} - \text{Call Attempt Failure}) / \text{Call Attempt}$ multiplied by 100.

Call Drop Rate : $(\text{Call Abnormal Release} / (\text{Call Normal Release} + \text{Call Abnormal Release}))$ multiplied by 100.

Call Setup Time : It is the time measured between Call Attempt to Call Alerting.

CSFB Call Setup Time : It is the time measured between Call Attempt to Call Alerting when call from 4G/LTE network fallbacks to 2G/3G Network.

Data Throughput : This parameter is intended for measuring user perceived throughput. The value of this parameter is calculated based on the SDUs that are successfully transferred through the application layer. Missing and erroneous application layer data is excluded from the throughput calculation. Note that with TCP/IP based application protocols, the TCP/IP headers are not taken into account when calculating the throughput.

Service Coverage : It is the strongest value of Rx Level/Received Signal Code Power (RSCP)/Reference Signals Received Power (RSRP) of the Absolute Radio Frequency Channel Number (ARFCN)/Ultra Absolute Radio Frequency Channel Number (UARFCN)/Evolved-UTRA Absolute Radio Frequency Number (EARFCN) at a given location, for a given operator.

Accumulated Down Time of BTSs, Node Bs and eNodeBs : BTSs, Node Bs and eNodeBs accumulated downtime (not available for service) shall basically measure the downtime of the BTSs, Node Bs and eNodeBs, including its transmission links/circuits during the period of a month, but excludes all planned service downtime for any maintenance or software up gradation. For this purpose the down time of a BTS/NodeB/eNodeB exceeding more than 1 hour on each occasion is to be taken into account for calculation.

Mean Opinion Score (MOS) : The degree of speech quality that a listener perceives at the terminal with a talker at the other end can be found from MOS value. Measurement will be based on Perceptual Evaluation of Speech Quality (PESQ) or Perceptual Objective Listening Quality Analysis (POLQA) Algorithm (ITU-T P.862 or ITU-TP.863).

MOS	Excellent	Good	Fair	Poor	Bad
Score	5	4	3	2	1

Completion Rate of Short Message Service (SMS) : Number of successfully delivered SMS from Short Message Service Center (SMSC) multiplied by 100 and divided by the number of successfully submitted SMS to SMSC excluding subscriber Behavior.

Subscriber behavior related failure (absent subscriber, Exceeded memory capacity, IMSI detachment, busy MS while receiving another SMS, Barred subscriber, Deregister in Home Location Register (HLR), Error in MS, No credit and invalid destination number) shall be excluded for calculation as it is beyond the control of the service providers.

N.B. : All KPIs except the drive test KPIs are to be computed from NMS/OMC data by the service providers. Monthly value of these QoS parameters will be computed by averaging the daily NBH [Circuit Switched (CS) KPIs on CS busy hour and Packet Switched (PS) KPIs on PS busy hour] value of the whole month. Drive test data throughput shall be measured using File Transfer Protocol by uploading and downloading specific file from monitoring terminal to File Transfer Protocol (FTP) server installed at any external network. BTRC will define details of drive test methodology through administrative order from time to time.

C. Fixed Telephone Service KPI

Call Setup Success Rate: (Call Attempt— Call Attempt Failure)/Call Attempt multiplied by 100.

Call Drop Rate : Call Abnormal Release/ (Call Normal Release+Call Abnormal Release) multiplied by 100.

Call Setup Time : It is the time measured between Call Attempt to Call Alerting.

N.B: All KPIs are to be computed from NMS/OMC data by the service providers. Monthly value of these QoS parameters will be computed by averaging the daily CS NBH value of the whole month.

D. Billing Accuracy and Complaint Handling KPI

Resolution of billing complaints : This indicator measures the percentage of billing/charging related complaints resolved by the service provider within the timeframe, measured from the day the complaint was received to the time the complaint was resolved.

Formula : Total number of billing related complaints resolved within the timeframe * 100%/Total number of complaints received within the reporting month.

A billing related complaint is any complaint related to the service provider's billing made or charges imposed on customers.

Promptness in answering calls for assistance in Customer Care : Number of calls answered by human operator within the timeframe *100%/Total number of calls to customer care hotline opting for human operator assistance in the reporting month .

Promptness in resolving customer complaints : This indicator measures the percentage of customer complaints resolved by the service provider within the specified timeframe, measured from the day the complaint was received to the time the complaint was resolved.

Formula : Total number of complaints resolved within the timeframe * 100%/ Total number of complaints received within the reporting month.

By the order of the Commission

Md. Jahurul Haque
Chairman.