

Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009

UNION OF INDIA

India

Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009

Rule

STANDARDS-OF-QUALITY-OF-SERVICE-OF-BASIC-TELEPHONE-SER of 2009

- Published on 20 March 2009
- Commenced on 20 March 2009
- [This is the version of this document from 20 March 2009.]
- [Note: The original publication document is not available and this content could not be verified.]

Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009Published vide Notification F. No. 305-25/2008-QoS, dated 20.3.2009Last Updated 6th November, 2019F. No. 305-25/2008-QoS, dated 20.3.2009. - In exercise of the powers conferred upon it under section 36, read with sub-clauses (i) and (v) of clause (b) of sub-section (1) of section 11 of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997), the Telecom Regulatory Authority of India hereby makes the following regulations, namely:
-Section IPRELIMINARY

1. Short title, commencement and application.

(1)These regulations may be called the Standards of Quality of Service of Basic Telephone Service (wireline) and Cellular Mobile Telephone Service Regulations, 2009.(2)They shall come into force with effect from the 1st day of July, 2009.(3)These regulations shall apply to -all service providers [including Bharat Sanchar Nigam Limited and Mahanagar Telephone Nigam Limited, being the companies registered under the Companies Act, 1956 (1 of 1956)] providing,-(i)Basic Telephone Service;(ii)Unified Access Services;(iii)Cellular Mobile Telephone Service;(iv)[Access Services authorized under Unified License (UL);] [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).]

2. Definitions.

(1) In these regulations, unless the context otherwise requires, - (a) "Act" means the Telecom Regulatory Authority of India Act, 1997 (24 of 1997); (aa) [Access Services Authorization under Unified License (UL) [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).] (i) means collection, carriage, transmission and delivery of voice and/or non-voice messages over Licensee's network in the designated Service Area. (ii) The Licensee can also provide Internet Telephony, Internet Services including IPTV, Broadband Services and triple play i.e. voice, video and data. (iii) While providing Internet Telephony service, the Licensee may interconnect Internet Telephony network with PSTN/PLMN/GMPCS network. The Licensee may provide access service, which could be on wireline and / or wireless media with full mobility, limited mobility and fixed wireless access;] (b) "Authority" means the Telecom Regulatory Authority of India established under sub-section (1) of section 3 of the Act; (ba) ["Base Station" or "BS" means a network element in a radio access network that is responsible for radio transmission and reception in one or more Cells to or from the user equipment and it includes BTS, Node B and eNode B; [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).] (bb) "Base Transceiver Station" or "BTS" means a Base Station in a GSM or CDMA based radio access network technology;] (c) "Basic Telephone Service" covers collection, carriage, transmission and delivery of voice or non-voice messages over licensee's Public Switched Telephone Network in licensed service area and includes provision of all types of services except those requiring a separate licence; (d) ["Cell" means an area of radio coverage identified by a Cell Global Identity or CGI;] [Substituted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).] (e) "Cell Bouncing Busy Hour" means the one hour period in a day during which a cell in a cellular mobile telephone network experiences the maximum traffic; (ea) ["Cell Identity" or "CI" means identity of a cell which is unique within a Location Area (LA) or a Tracking Area (TA); [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).] (eb) "Cell Global Identity" or "CGI" means the Globally Unique Identification of a cell and is the concatenation of the Mobile Country Code (MCC), Mobile Network Code (MNC), Location Area Code (LAC) or Tracking Area Code (TAC) and the Cell Identity (CI); (ec) "Cell_Q(t)" or "Cell Quality of Service Performance Measure for DCR Parameter" means the tth percentile value in the set of DCR values corresponding to a Cell observed during the assessment period; (ed) "Cell_Q(90)" means Cell_Q(t) with t=90 and indicates the 90th percentile DCR value in the set of DCR values observed for a Cell in the assessment period; Explanation: If a Cell was operating for ninety days during an assessment period and computed DCR values were available for all these ninety days then arranging these ninety DCR values in ascending order and finding 90th percentile DCR value for that Cell would point to 81st DCR value (counted from lowest to highest DCR value). This Cell_Q(90) DCR value will be the representative DCR value for calculation of Spatial Distribution Measure of that Cell during that assessment period] (f) ["Cellular Mobile Telephone Service" - [Substituted by Notification No. F. No. 305-08/2012-QOS., dated 7.5.2012 (w.e.f. 20.3.2009).] (i) means telecommunication service provided by means of a telecommunication system for the conveyance of messages through the agency of wireless telegraphy where every message that is conveyed thereby has been, or is to be, conveyed by means of a telecommunication system which is designed or adapted to be capable of being used while in motion; (ii) refers to transmission of voice or non-voice messages over Licensee's Network in real time only but service does not cover broadcasting of any messages, voice or non-voice, however, Cell

Broadcast is permitted only to the subscribers of the service;(iii)in respect of which the subscriber (all types, pre-paid as well as post-paid) has to be registered and authenticated at the network point of registration and approved numbering plan shall be applicable;](iv)[includes any service provided through Global System for Mobile Communications (GSM), Code Division Multiple Access (CDMA), Wideband CDMA based Universal Terrestrial Radio Access Network (UTRAN), Evolved Universal Terrestrial Radio Access Network (E-UTRAN) based on Long Term Evolution (LTE) technologies and any other technologies permitted under the CMTS or UASL or UL;] [Substituted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).](g)"Call Centre" means a department or a section or a facility established by the service provider under regulation 3 of the Telecom Consumers Protection and Redressal Grievances Regulations, 2007 (3 of 2007);(h)"consumer" means a consumer of a service provider falling in sub-regulation (3) of regulation 1 and includes its customer and subscriber ;(ha)["Day_Q(s)" or "Network Quality of Service Performance Measure on a Day for DCR Parameter" means the sth percentile DCR value in the set of DCR values of all cells of the network on a particular day; [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).](hb)"Day_Q(97)" means Day_Q(s) with s=97 and indicates the 97th percentile DCR value in the set of DCR values of all Cells of the network on a particular day;Explanation: If ten thousand cells were operating in a network on a particular day and computed DCR values were available for all these ten thousand cells then arranging these ten thousand DCR values in ascending order and finding the 97th percentile DCR value would point to the 9700th DCR value (counted from lowest to highest). This Day_Q(97) value will be the representative DCR value for calculation of Temporal Distribution Measure of the network on that day;](hba)["Down Link (DL) Packet Drop Rate or DL-PDR" means fraction of Packet Data Convergence Protocol (PDCP) Service Data Units (SDUs), in percentages, which are dropped by the network or lost in the network while transferring data on the downlink for Quality of Service (QoS) Class Identifier (QCI)=1 in LTE based radio access networks;] [Inserted by Notification No. F. No. 305-03/2018-QoS., dated 31.7.2018 (w.e.f. 20.3.2009).](hc)["Drop Call Rate" or "DCR" means the percentage of voice calls which once having been established are interrupted prior to their normal completion; [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).](hd)"eNode B" or "evolved Node B" or "eNB" means a Base Station that acts as a logical node in Evolved Universal Terrestrial Radio Access Network (E-UTRAN) based on Long Term Evolution (LTE) technology](i)"licence" means a licence granted or having effect as if granted under section 4 of the Indian Telegraph Act, 1885 (13 of 1885) or the provisions of the Indian Wireless Telegraphy Act, 1933 (17 of 1933);(j)"licensee" means any person licensed under sub-section (1) of section 4 of the Indian Telegraph Act, 1885 (13 of 1885) for providing specified public telecommunication services;(ja)["Location Area" or "LA" means an area in which a mobile station may move freely without updating the Visitor Location Register (VLR) and includes one or several cells in GSM or CDMA or UTRAN Network; [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).](jb)"Location Area Code" or "LAC" means a number of fixed length identification number (of 2 octets) used for identifying a Location Area (LA) within a Public Land Mobile Network (PLMN);](k)"message" shall have the same meaning assigned to it in clause (3) of section 3 of the Indian Telegraph Act, 1885 (13 of 1885);(l)"MTTR" means Mean Time to Repair;(la)["Node B" means a Base Station that acts as a logical node in a Universal Terrestrial Access Network (UTRAN) based on Wideband CDMA (WCDMA) technology] [Substituted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).](lb)[

"Network_QSD(s,t)" or "Network Quality of Service (QoS) DCR Spatial Distribution Measure" means the sth percentile value in the set of Cell_Q(t) values for all cells in a network during the assessment period; [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).] Explanation: Network_QSD(s,t) is a representative DCR spatial distribution value for the entire network during the assessment period and indicates that Cell_Q(t) value of at-least s% of the cells were equal to or lower than the Network_QSD(s,t) value; (lc) "Network_QSD(90,90)" means Network_QSD(s,t) with s=90 and t=90, and indicates 90th percentile value of Cell_Q(90) values of all cells in the network; Explanation: Network_QSD(90,90) value is a representative DCR spatial distribution value for the entire network during the assessment period indicating that Cell_Q(90) value for at-least 90% of the Cells were equal to or lower than the Network_QSD(90,90) value. For example, if a network was operating with ten thousand cells on ninety days during the assessment period then Network_QSD(90,90) value will be the 90th percentile Cell_Q(90) value out of the available ten thousand Cell_Q(90) values; (ld) "Network_QTD(s,t)" or "Network Quality of Service(QoS) DCR Temporal Distribution Measure" means the tth percentile value in the set of Day_Q(s) values for a network on all days in the assessment period; Explanation: Network_QTD(s,t) is a representative DCR temporal distribution value for the entire network during the assessment period which indicates that the Day_Q(s) value for at-least t% of the days during the assessment period were equal to or lower than the Network_QTD(s,t) value; (le) "Network_QTD(97,90)" means Network_QTD(s,t) with s=97 and t=90, it indicates 90th percentile value of Day_Q(97) values of network on all days in the assessment period; Explanation: Network_QTD(97,90) is a representative DCR temporal distribution value for the entire network during the assessment period indicating that the Day_Q(97) values of the network for at-least 90% of the days of the assessment period were equal to or lower than the Network_QTD(97,90) value. For example, if a network was operating with ten thousand cells for ninety days during the assessment period, then the Network_QTD(97,90) value will be the 90th percentile Day_Q(97) value out of available ninety Day_Q(97) values; (lf) "nth Percentile" or "nth Percentile Value" means the smallest data value in a given data set with the property that n% of the data values in that data set are less than or equal to it. Explanation: Percentile is a measure of relative standing of an observation within the data set, for example, if 90th percentile value is to be calculated in a data set of 200 DCR values each falling in the interval from 0 to 100 (in percent), then it would point to DCR value at 180th position (90% of 200), when all 200 DCR values are arranged in ascending order and say it is 3.45% (DCR value) in this example. The 3.45% DCR value will be the smallest DCR value in the given set of 200 DCR values with the property that 90% of the DCR values in this set i.e. DCR values from position 1 to 179 in set of values arranged in ascending order, are less than or equal to it. If the data set has many data values in the given data set with 3.45% DCR value, then 90th percentile would point to all such DCR values. In case, n% of the data values comes out to be a number with fraction then rounded up number shall be used. (m) "OMC" means Operation and Maintenance Centre; (ma) ["Evolved-Universal Terrestrial Radio Access Network (E-UTRAN) Radio Access Bearer" or "E-RAB" means a user plane connection between User Equipment (UE) and Serving Gateway (SGW) in the LTE based technology;] [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).] (n) "Paging Channel" means a signaling control channel in a CDMA network to send control, call setup and paging messages used for communication between mobile station (MS), i.e., mobile handset and Base Transceiver Station (BTS) before such mobile station is assigned a Traffic Channel (TCH); (o) "Point of Interconnection (POI)" means a mutually agreed upon point of

demarcation where the exchange of traffic between the networks of two service providers takes place;(p)"Public Switched Telephone Network" means a fixed specified switched public telephone network providing a two-way switched telecommunication services to the general public;(q)"Public Land Mobile Network" means a network set up and operated by any of the licensed operators including Mahanagar Telephone Nigam Limited and Bharat Sanchar Nigam Limited, for the purpose of providing land based mobile communication services to the public and which provides communication facilities to subscribers using mobile stations (MS), i.e., mobile handsets;(r)"Quality of Service" is the main indicator of the performance of a telecommunication network and of the degree to which such network conforms to the standards of such quality of service as specified in these regulations for specified parameters;(ra)["Radio Access Bearer" or "RAB" means a service provided by the Access Stratum to the Non-Access Stratum for the transfer of user data between the User Equipment and the Core Network; [Inserted by Notification No. F. No. 305-08/2012-QoS., dated 7.5.2012 (w.e.f. 20.3.2009).](rb)"Radio interface" means the interface between User Equipment and the Universal Terrestrial Radio Access Network access Point, which encompasses all the functionality required to maintain such interfaces;(rba)["Radio Link Timeout" or "RLT" means the Radio Link Timeout value broadcast by the GSM based radio access networks to initialize 'S' counter;](rc)"Radio Resource Control" or "RRC" means a sub layer of radio interface Layer 3 existing in the control plane which provides information transfer service to the Non-Access Stratum and is responsible for controlling the configuration of radio interface Layers 1 and 2;](s)"regulations" means the Standards of Quality of Service of Basic Telephone Service (wireline) and Cellular Mobile Telephone Service Regulations, 2009;(t)"Stand-alone Dedicated Control Channel" or "SDCCH" means, a GSM control channel for signaling purposes where the majority of call setup occurs, which is used for communication between mobile station (MS), i.e, mobile handset and Base Transceiver Station (BTS) before such mobile station is assigned a Traffic Channel (TCH);(u)"service provider" means any service provider to which these regulations apply.(ua)["Tracking Area" or "TA" means an area in which a mobile station may move freely without updating the Mobile Management Entity (MME) and includes one or several cells of Evolved Universal Terrestrial Radio Access Network (E-UTRAN); [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).](ub)"Tracking Area Code" or "TAC" means a fixed length identification number (of 2 octets) used for identifying a Tracking Area within a Public Land Mobile Network (PLMN);](v)"Traffic Channel" or "TCH" means, a logical channel in a GSM or CDMA network which carries either encoded speech or user data;(w)"telecommunication services" means service of any description (including electronic mail, voice mail, data services, audio-tex services, video-tex services, radio paging and cellular mobile telephone services) which is made available to users by means of any transmission or reception of signs, signals, writing images, and sounds or intelligence of any nature, by wire, radio, visual or other electro-magnetic means but shall not include broadcasting services;(x)"Time Consistent Busy Hour" or "TCBH" means the one hour period starting at the same time each day for which the average traffic of the resource group concerned is greatest over the days under consideration and such Time Consistent Busy Hour shall be established on the basis of analysis of traffic data for a period of ninety days;(y)"Unified Access Services" -(ya)["Up Link (UL) Packet Drop Rate or UL-PDR" means fraction of Packet Data Convergence Protocol (PDCP) Service Data Units (SDUs), in percentages, which are lost in the network while transferring data on the uplink for Quality of Service (QoS) Class Identifier (QCI)=1 in LTE based radio access networks;] [Inserted by Notification No. F. No. 305-03/2018-QoS., dated

31.7.2018 (w.e.f. 20.3.2009).](i)means telecommunication service provided by means of a telecommunication system for the conveyance of messages through the agency of wired or wireless telegraphy ;(ii)refers to transmission of voice or non-voice messages over Licensee's Network in real time only but service does not cover broadcasting of any messages, voice or non-voice, except, Cell Broadcast which is permitted only to the subscribers of the service;(iii)in respect of which the subscriber (all types, pre-paid as well as post-paid) has to be registered and authenticated at the network point of registration and approved numbering plan shall be applicable;(2)Words and expressions used but not defined in these regulations and defined in the Act and the rules and other regulations made thereunder shall have the meanings respectively assigned to them in the Act or the rules or the regulations, as the case may be.(z)["Voice over LTE" or "VoLTE" means voice call established, maintained and released using IP (Internet Protocol) Multi-Media Sub-System (IMS).] [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).]Section IIQUALITY OF SERVICE (QoS) PARAMETERS FOR BASIC TELEPHONE SERVICE (WIRE LINE)

3. Quality of Service Parameters in respect of which compliance reports are to be submitted to the Authority.

(1)Every basic telephone service provider shall meet the following Quality of Service benchmarks for the basic telephone service (wireline) in respect of each specified parameter, namely:-

Serial Number	Name of Parameter	Benchmark	Averaged over a period
(i)	Fault incidences (No. of faults/100 subscribers /month)	[□7] [Substituted '□5' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]	One Quarter
(ii)	Fault repair by next working day	For urban areas:[By next working day: □85% and within five days: 100%.] [Substituted 'by next working day □90% and within 3 days: 100%' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]For rural and hilly areas:[By next working day: □75% and within 7 days: 100%.] [Substituted 'by next working day □90% and within 5days : 100%' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f.	One Quarter

		20.3.2009).]Rent RebateFaults pending for >3 days and <input type="checkbox"/> 7 days: Rent rebate for 7 days.Faults pending for >7 days and <input type="checkbox"/> 5 days: Rent rebate for 15 days.Faults pending for >15 days: rent rebate for one month.	
(iii)	Mean Time To Repair (MTTR)	[<input type="checkbox"/> 10 Hrs] [Substituted '8hrs' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]	One Quarter
(iv)	(a) Call Completion Rate within a local network shall be better than or,	<input type="checkbox"/> 55%	One Quarter
	(b) Answer to Seizure Ratio (ASR)	<input type="checkbox"/> 75 %	One Quarter
(v)	Point of Interconnection (POI) Congestion (on individual POI)	<input type="checkbox"/> 0.5%	One month
(vi)	Metering and billing credibility - post paid	Not more than 0.1% of bills issued should be disputed over a billing cycle	One Billing Cycle
(vii)	Metering and billing credibility -- pre-paid	Not more than 1 complaint per 1000 customers, i.e., 0.1% complaints for metering,charging, credit, and validity	One Quarter
(viii)	Resolution of billing/ charging complaints	[<input type="checkbox"/> 98 % within 4 weeks and 100% within six weeks] [Substituted '100% within 4 weeks' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]	One Quarter
(ix)	[***] [Deleted 'Period of applying credit/ waiver/ adjustment to customer's account from the date of	[***] [Deleted 'within 1 week of resolution of complaint' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]	[***] [Deleted 'One Quarter' by Notification No. F. No. 305-01/2014-QOS.,

	resolution of complaints' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]		dated 21.8.2014 (w.e.f. 20.3.2009).]
(x)	Response Time to the customer for assistance		
(a) Accessibility of call centre/ customer care	<input type="checkbox"/> 95%	One Quarter	
(b)Percentage of calls answered by the operators (voice to voice) within[ninety seconds] [Substituted '60 seconds' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]	[<input type="checkbox"/> 95%] [Substituted ' 90%' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]	One Quarter	
(xi)	Termination/closure of service	<input type="checkbox"/> 7 days	One Quarter
(xii)	Time taken for refund of deposits after closures	100% within 60 days	One Quarter

(2)The compliance of the parameters specified in sub-regulation (1) shall be reported to the Authority by the service provider.(3)The Authority may, from time to time, through audit and objective assessment of quality of service conducted either by its own officers or employees or through an agency appointed by it, verify and assess the performance by the basic telephone service provider of the Quality of Service benchmarks of each parameter for the basic telephone service (wire-line) specified in sub-regulation (1).

3A. [Consequences for failure of basic service providers to meet the Quality of Service benchmarks. [Inserted by Notification No. F. No. 305-8/2012-QOS., dated 8.11.2012 (w.e.f. 20.3.2009).]

(1)If a basic telephone service provider fails to meet the Quality of Service benchmarks specified under sub-regulation (1) of regulation 3, it shall, without prejudice to the terms and conditions of its licence, or the Act or rules or regulations or orders made, or, directions issued, thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees fifty thousand per parameter, as the Authority may, by order, direct :Provided that no order for payment of any

amount by way of financial disincentive shall be made by the Authority unless the basic telephone service provider has been given a reasonable opportunity of representing against the contravention of the regulation observed by the Authority.(2)If the compliance report furnished by a basic telephone service provider under sub-regulation (2) of regulation 3 is false and which such service provider knows or believes to be false or does not believe to be true, it shall, without prejudice to the terms and condition of its licence, or the Act or rules or regulations or orders made, or, directions issued thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees ten lakh per parameter for which such false report has been furnished, as the Authority may, by order, direct:Provided that no order for payment of any amount by way of financial disincentive shall be made by the Authority unless the basic telephone service provider has been given a reasonable opportunity of representing against the contravention of the regulation, observed by the Authority.(3)The amount payable by way of financial disincentive under these regulations shall be remitted to such head of account as may be specified by the Authority.]

4. Quality of Service parameters in respect of which compliance is to be monitored by the service provider.

(1)Every basic telephone service provider shall meet and monitor the following Quality of Service benchmarks for the basic telephone service (wireline) in respect of each specified parameter, namely:-

SerialNumber	Name of Parameter	Benchmark	Averaged over a period
(i)	Provision of a telephone after registration of demand	100% in □7 days (subject to technical feasibility)	One quarter
(ii)	Shift of Telephone Connection	□3 days (95%of requests to be attended within 3 days)	One quarter
(iii)	Grade of Service	(a) Junctions between local exchanges - 0.002(b) Outgoing junctions from Trunk Automatic Exchange (TAX) to local exchange -0.005(c) Incoming junctions from local exchange to TAX - 0.005(d) Incoming or out going junctions between TAX's 0.005(e) Switching network should be non-blocking or should have extremely low blocking probability.	One quarter

(2)The compliance of the Quality of Service benchmarks of each parameter for the basic telephone service (wireline) specified in sub-regulation (1) which are required to be monitored by the concerned service provider, need not be reported to the Authority.(3)The basic telephone service provider shall maintain records of its compliance of the Quality of Service benchmarks of each parameter for the basic telephone service (wireline) specified in sub-regulation (1).(4)The Authority

may, if it considers it expedient so to do, and to ensure compliance of the provisions of sub-regulation (1), at any time, -(a)direct any of its officers or employees or an agency appointed by the Authority to inspect the records maintained under sub-regulation (3); or,(b)get the records maintained under sub-regulation (3) audited.

Section III QUALITY OF SERVICE (QoS)
PARAMETERS FOR CELLULAR MOBILE TELEPHONE SERVICE

5. Quality of Service parameters in respect of which compliance reports are to be submitted to the Authority.

(1)Every cellular mobile telephone service provider shall meet the following Quality of Service benchmarks for cellular mobile telephone service in respect of each specified parameter, namely:-

[Serial [Substituted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).]Number		Name of Parameter	Benchmark	Method and Assessment period
A		Network Service Quality Parameters:		
	(i)	Network Availability		
		(a) Base Station Accumulated downtime (not available for service)	□2%	On average basis over a period of one quarter
		(b) Worst affected Base Station due to downtime	□2%	On average basis over a period of one quarter
(ii)		Connection Establishment (Accessibility)		
		(a) Call Set-up Success Rate and Session Establishment Success Rate for Circuit Switched Voice or VoLTE as applicable (within licensee's own network)	□95%	On average basis over a period of one quarter
		(b) SDCCH/ Paging Channel Congestion / RRC Congestion	□1%	On average basis over a period of one quarter
		(c) TCH, RAB and E-RAB Congestion	□2%	On average basis over a

			period of one quarter
(iii)	Connection Maintenance (Retainability)		
	(a) Network QoS DCR Spatial Distribution Measure [Network_QSD(90,90)]	<input type="checkbox"/> 2%	On percentile basis over a period of one quarter
	(b) Network QoS DCR Temporal Distribution Measure [Network_QTD(97,90)]	<input type="checkbox"/> 3%	On percentile basis over a period of one quarter
	(c) connections with good voice quality, Circuit Switched Voice Quality and Voice over LTE (VoLTE) quality	<input type="checkbox"/> 95%	On average basis over a period of one quarter
	(d) [DL Packet Drop Rate [Inserted by Notification No. F. No. 305-03/2018-QoS., dated 31.7.2018 (w.e.f. 20.3.2009).]	<input type="checkbox"/> 2%	On average basis over a period of one quarter]
	(e) [UL Packet Drop Rate [Inserted by Notification No. F. No. 305-03/2018-QoS., dated 31.7.2018 (w.e.f. 20.3.2009).]	<input type="checkbox"/> 2%	On average basis over a period of one quarter]
(iv)	Point of Interconnection (POI) Congestion (on individual POI)	<input type="checkbox"/> 0.5%	On average basis over a period of one quarter]
B	Customer Service Quality Parameters:		
(v)	Metering and billing credibility-post paid	Not more than 0.1% of bills issued should be disputed over a billing cycle	One Billing Cycle
(vi)	Metering and billing credibility -- pre-paid	Not more than 1 complaint per 1000 customers i.e. 0.1%complaints for metering, charging, credit, and validity	One Quarter
(vii)	(a) Resolution of billing/ charging complaints	[<input type="checkbox"/> 98% within four weeks and 100% with six weeks]	One Quarter

		[Substituted '100% within 4 weeks' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]	
(viii)	(b) Period of applying credit/ waiver/ adjustment to customer's account from the date of resolution of complaints Response Time to the customer for assistance	within 1 week of resolution of complaint	One Quarter
	(a) Accessibility of call centre/ customer care	□95%	One Quarter
	(b)Percentage of calls answered by the operators (voice to voice) within[ninety seconds] [Substituted '60 seconds' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]	[□95%] [Substituted '□90%' by Notification No. F. No. 305-01/2014-QOS., dated 21.8.2014 (w.e.f. 20.3.2009).]	One Quarter
(ix)	Termination/ closure of service	□7 days	One Quarter
(x)	Time taken for refund of deposits after closures	100% within 60 days	One Quarter

[Note-1: The performance against benchmarks for the parameters listed under (i), (ii) and (iii) in the table shall be computed for all the cells, which are being used to provide Circuit Switched Voice or VoLTE service, in the License Service Area (LSA) in which a service provider is operating; [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).]Explanation: In case, VoLTE service is provided by the service provider then DCR values for the cells of the eNodeBs will be included for the parameters listed under (iii) in the table and if only Circuit Switch based voice calls are provided then cells in the eNode Bs will not be included for the assessment purposes of parameter under (iii) in the table;Note-2: All DCR values for the assessment period shall be considered for Percentile value computation for the parameter listed under (iii) (a) and (iii) (b) in the table except the cases enumerated in the table for list of 'DCR Codes (DC)' given in Note 5;Note-3: DCR values of each cells for the computation of parameter listed under (iii) (a) and (iii) (b) of the table shall be computed, up to two decimal places, during Cell Bouncing Busy Hour;Note-4: Blank DCR entries or entries filled with any value other than computed DCR value or entries filled with any code or text other than DCR codes specified in Note 5, shall be considered as non-submission of compliance report;Note-5: DCR codes as given below in the table shall be used for the reasons and circumstances corresponding to the codes:

DCR Code	Stand for Reason or circumstances
DNE	

	Does Not Exist	The cell was either not commissioned or de-commissioned in the middle of the assessment period and was not part of the network to serve the users in the network.
NOP	Not Operational	The cell was not in operation either due to planned shut down or force majeure condition or technical problem and thus not able to serve the users in the network.
NAV	Counter values Not Available	If the requisite counter values for computation of DCR for a Cell on a particular day could not be captured due to technical glitch although the cell was operational.
NDM	Computation of DCR Not Determinable or irrelevant	In case, DCR values are indeterminate or computed value is irrelevant for the purpose of assessment

Note-6: Authority may further add, modify or delete the list of DCR Codes, through directions issued from time to time; Note-7: Usage of DCR codes for reasons and circumstances other than that as specified in Note 5 shall be treated as violation in terms of sub-regulation (3) of Regulation 5 of the principal regulations.](2)The compliance of the parameters specified in sub-regulation (1) shall be reported to the Authority by the service provider.(3)The Authority may, from time to time, through audit and objective assessment of quality of service conducted either by its own officers or employees or through an agency appointed by it, verify and assess the performance by the cellular mobile telephone service provider of the Quality of Service benchmarks of each parameter for the cellular mobile telephone service specified in sub-regulation (1).

5A. [Consequences for failure of cellular mobile telephone service providers to meet the Quality of Service benchmarks. [Inserted by Notification No. F. No. 305-8/2012-QOS., dated 8.11.2012 (w.e.f. 20.3.2009).]

(1)If a cellular mobile telephone service provider fails to meet the benchmark of parameter specified under serial number A of sub-regulation (1) of regulation (5), [other than the DCR related parameters i.e. Network_QSD (90,90) and Network_QTD(97,90);] it shall; without prejudice to the terms and conditions of its licence, or the Act or rules or regulations or orders made, or directions issued, thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees fifty thousand per parameter and in case of second or subsequent such contravention, to pay an amount not exceeding rupees one lakh per parameter for each contravention, as the Authority may, by order, direct:Provided that no order for payment of any amount by way of financial disincentive shall be made by the Authority unless the cellular mobile telephone service provider has been given a reasonable opportunity of representing against the contravention of the regulation observed by the Authority.(1a)[If a cellular mobile telephone service provider fails to meet the benchmark for the parameter Network_QSD(90,90) , specified under sub-regulation (1) of regulation (5), it shall without prejudice to the terms and conditions of its license, or the Act or rules or regulations or orders made, or directions issued thereunder, be liable to pay an amount, by way of financial disincentive, as given in the table below, for the contravention, reported by the service provider in its quarterly report:

Value of Network_QSD(90,90) in quarterly report	Amount of Financial Disincentives in rupees
---	---

More than 2% but not exceeding 4%	not exceeding One lakh
More than 4% but not exceeding 6%	not exceeding Two lakhs
More than 6% but not exceeding 8%	not exceeding Three lakhs
More than 8% but not exceeding 10%	not exceeding Four lakhs
More than 10%	not exceeding Five lakhs

Provided that if the service provider fails to meet the benchmark consecutively in two or more subsequent quarters, he shall be liable to pay, by way of financial disincentive, an amount not exceeding one and half times of financial disincentive payable, for the consecutive contravention and not exceeding twice the financial disincentive liable to be paid as specified in the table above for each consecutive contravention occurring thereafter: Provided also that no order for payment of any amount by way of financial disincentive shall be made by the Authority unless the cellular mobile telephone service provider has been given a reasonable opportunity by representing against the contravention of the regulation observed by the Authority. (1b) If a cellular mobile telephone service provider fails to meet the benchmark for the parameter Network_QTD(97,90), specified under sub-regulation (1) of regulation (5), it shall without prejudice to the terms and conditions of its license, or the Act or rules or regulations or orders made, or directions issued there under, be liable to pay an amount, by way of financial disincentive, as given in the table below, for the first contravention, reported by the service provider in its quarterly report:

Value of Network_QTD(97,90) in quarterly report	Amount of Financial Disincentives in rupees
More than 3% but not exceeding 5%	not exceeding One lakh
More than 5% but not exceeding 7%	not exceeding Two lakhs
More than 7% but not exceeding 9%	not exceeding Three lakhs
More than 9% but not exceeding 11%	not exceeding Four lakhs
More than 11%	not exceeding Five lakhs

Provided that if the service provider fails to meet the benchmark consecutively in two or more subsequent quarters, he shall be liable to pay, by way of financial disincentive, an amount not exceeding one and half times of financial disincentive payable, for the consecutive contravention and not exceeding twice the financial disincentive, liable to be paid as specified in the table above, for each consecutive contravention occurring thereafter: Provided also that no order for payment of any amount by way of financial disincentive shall be made by the Authority unless the cellular mobile telephone service provider has been given a reasonable opportunity by representing against the contravention of the regulation observed by the Authority. (1c) The total amount payable as financial disincentives, under sub-regulation (1a) and (1b), shall not exceed rupees ten lakhs, in a quarter. (1d) The Authority may, impose a lower amount of financial disincentive than the amount of financial disincentive payable as per the provisions in sub-regulation (1a) or (1b) or (1c), as the case may be; where it finds merit in the reasons furnished by the service providers: Provided that the decision of the Authority in such circumstances shall be final and binding on the service providers.]

[Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).] (2) If a cellular mobile telephone service provider fails to meet the benchmark of parameter specified under serial number B of sub-regulation (1) of regulation (5), it shall, without prejudice to the terms and conditions of its licence, or the Act or rules or regulations or orders made, or, directions issued, thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees fifty

thousand per parameter, as the Authority may, by order, direct: Provided that no order for payment of any amount by way of financial disincentive shall be made by the Authority unless the cellular mobile telephone service provider has been given a reasonable opportunity of representing against the contravention of the regulation observed by the Authority.(3)If the compliance report furnished by a cellular mobile telephone service provider under sub-regulations (2) of regulation 5 is false and which such service provider knows or believes to be false or does not believe to be true, it shall, without prejudice to the terms and conditions of its license, or the Act or rules or regulations or orders made, or, directions issued thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees ten lakh per parameter for which such false report has been furnished, as the Authority may, by order, direct: Provided that no order for payment of any amount by way of financial disincentive shall be made by the Authority unless the cellular mobile telephone service provider has been given a reasonable opportunity of representing against the contravention of the regulation observed by the Authority.(4)The amount payable by way of financial disincentive under these regulations shall be remitted to such head of account as may be specified by the Authority.]

6. Quality of Service parameter in respect of which compliance is to be monitored by the service provider.

(1)Every cellular mobile telephone service provider shall meet and monitor the following Quality of Service benchmarks for cellular mobile telephone service in respect of the specified parameter, namely:-

Serial Number	Name of Parameter	Benchmark
1	Service Coverage	For In-door coverage the signal strength at street level shall be \geq -75 dBm and In-vehicle shall be \geq -85 dBm.
2. [[Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).]	Radio Link Timeout (RLT)	4 to 64]

(2)The compliance of the Quality of Service benchmarks of the parameter for the cellular mobile telephone service specified in sub-regulation (1) need not be reported to the Authority.(3)The service provider shall,(a)measure the service coverage through drive tests of the cellular mobile telephone network at periodic intervals and take remedial action to address problems related to coverage including interference, call drop and voice quality revealed during such drive tests;(b)maintain the records of such drive tests and the action taken on the problems related to coverage including interference, call drop and voice quality revealed during such drive tests; and(c)provide to the Authority or its authorized agency or representative, on demand, for verification, the records maintained as per clause (b) above.(4)The Authority may, through drive tests of the cellular mobile telephone network conducted either by its own officers or employees or through an agency appointed by it or through joint drive tests with the service provider, assess the quality of the service coverage, and the service provider shall facilitate such drive tests.(5)The

service provider shall, suo motu, take all remedial action to rectify shortcomings or deficiencies, if any, detected during the joint drive tests referred to in sub-regulation (4) without waiting for any communication from the Authority and submit to the Authority -(a)its action plan, within thirty days of such drive tests, for remedying the shortcomings or deficiencies; and(b)its final compliance report within such time limit as indicated in the action plan or such reduced time limit as may be indicated by the Authority in response to the action plan of the service provider referred to in clause (a), as the case may be.(6)In respect of a drive test conducted by the Authority under sub-regulation (4) either by its own officers or employees or through an agency appointed by it, the service provider shall submit to the Authority-(a)its action plan for removal of the shortcomings or deficiencies, within thirty days of receipt by it of the communication from the Authority about such shortcomings or deficiencies based on such drive test; and(b)its final compliance report within such time limit as indicated in the action plan or such reduced time limit as may be indicated by the Authority in response to the action plan of the service provider referred to in clause (a), as the case may be.(6a)[The service provider shall keep records of those BTS with their locations, which were configured with Radio Link Timeout (RLT) values equal to or higher than 48 for a period of more than 3 consecutive days. Service provider shall maintain the records of valid reasons or justification for keeping RLT equal to or more than 48 for each Cell of BTS and provide it to the Authority or its authorized agency or representative, on demand, for verifications.] [Inserted by Notification No. F. No. 304-2/2016-QoS., dated 18.8.2017 (w.e.f. 20.3.2009).](7)The Authority may, if it considers it expedient so to do, and to ensure compliance of the provisions of sub-regulation (1), at any time,-(a)direct any of its officers or employees or an agency appointed by the Authority to inspect the records maintained under sub-regulation (3); or,(b)get the records maintained under sub-regulation (3) audited.

6A. [Duration of alert for the called party. [Inserted by Notification No. F. No. 301-02/2018-QOS(Misc.), dated 1.11.2019.]

(1)The time duration of alert for an incoming voice call, which is neither answered nor rejected by the called party, shall be thirty seconds for Cellular Mobile Telephone Service and sixty seconds for Basic Telephone Service.(2)The terminating network shall, on expiry of thirty seconds in case of Cellular Mobile Telephone Service and sixty seconds in case of Basic Telephone Service, release the incoming voice call and transmit the call release message to the originating network:Provided that the originating network may release an unanswered call after ninety seconds in case the call release message is not received from the terminating network.]Section IVCUSTOMER PERCEPTION OF SERVICE FOR BASIC TELEPHONE SERVICE (WIRELINE) AND CELLULAR MOBILE TELEPHONE SERVICE

7. Quality of Service parameters to be reflected in customer perception of service.

- The performance of the service providers in respect of the following Quality of Service benchmarks for the basic telephone service (wireline) or cellular mobile telephone service or both, as the case may be, in respect of each specified parameter, shall be subject to periodic assessment by the

authority through customer satisfaction surveys, which may be conducted by the Authority either through its own officers or employees or through any agency appointed by it, namely :-

Serial Number	Name of Parameter	Benchmark
(a)	customers satisfied with the provision of service	□90 %
(b)	customers satisfied with the billing performance	□95 %
(c)	customers satisfied with network performance, reliability and availability	□95 %
(d)	customers satisfied with maintainability	□95 %
(e)	customers satisfied with supplementary and value added services	□90 %
(f)	customers satisfied with help services including customer grievance redressal	□90 %
(g)	customers satisfied with overall service quality	□90 %

Section VRecord Keeping, Reporting And Publication Of Quality Of Service Performance

8. Record Keeping.

(1)Every service provider shall maintain documented process of collection of data for each Quality of Service parameter specified by the Authority in regulation 3, regulation 4, regulation 5 and regulation 6 and submit to the Authority, within sixty days of notification of these regulations, the documented process of collection of data of each Quality of Service parameter, indicating the correlation with the primary data which are derived from system counters or codes in Operation and Maintenance Centre or Network Management System or Mobile Switching Centre or telephone exchange, along with record keeping procedure.(2)Every service provider shall maintain complete and accurate records of its compliance of benchmark of each Quality of Service parameter specified in regulations 3, regulation 4, regulation 5 and regulation 6 in such manner and in such formats as may be directed by the Authority, from time to time.(3)The Authority may, from time to time, either by order or by direction, specify uniform record keeping procedures and formats, including guidelines on measurement methodology for various Quality of Service parameters specified in these regulations, to be followed by the service providers.(4)The Authority may, if it considers it expedient so to do, and to ensure compliance of the provisions of sub-regulations (2) and (3), at any time, direct any of its officers or employees or an agency appointed by the Authority to inspect the records maintained under sub-regulations (2) and (3) or to get such records audited.(5)The Authority may, if it considers it expedient so to do, require the concerned service provider to get the records maintained by it under sub-regulations (2) and (3) audited through an agency as may be specified by the Authority and submit the report in respect of such audit to the Authority and the cost of such audit shall be borne by the concerned service provider.

9. Reporting.

- Every service provider shall submit to the Authority its compliance reports of benchmarks in respect of each Quality of Service parameter specified under regulation 3 and regulation 5 in such manner and format, at such periodic intervals and within such time limit as may be specified by the Authority, from time to time, by an order or direction.

9A. [Consequences for failure of the service providers to submit compliance report. [Inserted by Notification No. F. No. 305-8/2012-QOS., dated 8.11.2012 (w.e.f. 20.3.2009).]

(1) If a service provider contravenes the provisions of regulation 9, it shall, without prejudice to the terms and conditions of its licence, or the provisions of the Act or rules or regulations or orders made, or, directions issued, thereunder, be liable to pay an amount, by way of financial disincentive, not exceeding rupees five thousand for every day during which the default continues, as the Authority may, by order, direct: Provided that no order for payment of any amount by way of financial disincentive shall be made by the Authority unless the service provider has been given a reasonable opportunity of representing against the contravention of the regulation observed by the Authority. (2) The amount payable by way of financial disincentive under these regulations shall be remitted to such head of account as may be specified by the Authority.]

10. Publication.

(1) The Authority may publish, in such manner and in such format, as may be decided by the Authority from time to time - (a) the compliance reports of benchmarks of each Quality of Service parameter reported to it by the service providers in accordance with regulation 9; (b) the results of the audit and objective assessment of Quality of Service undertaken by the Authority or its authorised agency as per sub-regulation (3) of regulation 3, sub-regulation (3) of regulation 5 and sub-regulations (4) and (5) of regulation 8; and (c) the results of the customer satisfaction surveys undertaken by the Authority as per regulation 7 - through its website or through press releases or through advertisements in the newspapers, 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 Quality of Service parameter specified in regulation 3, regulation 4, regulation 5 and regulation 6, in such manner and in such format, as may be directed by the Authority from time to time.

11. Review.

(1) The Quality of Service parameters specified in regulation 3, regulation 4, regulation 5, regulation 6 and regulation 7 may be reviewed by the Authority from time to time. (2) The Authority, on reference from any affected party for good and sufficient reasons, may review and modify these regulations.

12. Over-riding Effect.

- Wherever higher quality parameter has been stipulated as a condition of licence, the Quality of Service as required by the licence shall have precedence over the parameters specified in these regulations.

13. Repeal and Saving.

(1)The Regulation on Quality of Service of Basic and Cellular Mobile Telephone Services, 2005 (11 of 2005) is hereby repealed.(2)Notwithstanding such repeal, anything done or any action taken under the said Regulation shall be deemed to have been done or taken under the corresponding provisions of these regulations.

14. Interpretation.

- In case of any doubt regarding interpretation of any of the provisions of these regulations, the clarification of the Authority shall be final and binding.