

**TELECOM REGULATORY AUTHORITY OF INDIA
NOTIFICATION**

New Delhi, the 6th October, 2006

No. 304-6/ 2004-QoS. 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:-

1. Short title, extent and commencement

- (i) These regulations shall be called as '**Quality of Service of Broadband Service Regulations 2006**' (11 of 2006).
- (ii) These Regulations shall be applicable to all the Internet Service Providers, Basic Service Providers, Unified Access Service Providers and Cellular Mobile Telecom Service Providers including Mahanagar Telephone Nigam Limited and Bharat Sanchar Nigam Limited., providing Broadband Service.
- (iii) These Regulations shall come into force with effect from 1st January, 2007.

2. Definitions

In these Regulations, unless the context otherwise requires:

- (a) '**Act**' means the Telecom Regulatory Authority of India Act, 1997.
- (b) '**Authority**' means the Telecom Regulatory Authority of India (TRAI).
- (c) '**Basic Service**' means service derived from a Public Switched Telephone Network (PSTN) as specified in the license.
- ¹[(d) '**Broadband**' is a data connection that is able to support interactive services including Internet access and has the capability of the minimum download speed of 512 kbps to an individual subscriber from the point of presence (POP) of the service provider intending to provide Broadband service.]
- (e) '**CPE**' means **Customer Premises Equipment**
- (f) '**Customer**' or '**Consumer**' means a subscriber of Broadband service.

¹ Subs. by the Second Amendment Regulations, 2014, reg. 2 (w.e.f. 25.06.2014), for the following:

"(d) '**Broadband**' is defined in the Broadband Policy 2004 as "An always-on data connection that is able to support interactive services including Internet access and has the capability of the minimum download speed of 256 kilo bits per second (kbps) to an individual subscriber from the Point of Presence (POP) of the service provider intending to provide Broadband service where multiple such individual Broadband connections are aggregated and the subscriber is able to access these interactive services including the Internet through this POP. The interactive services will exclude any services for which a separate licence is specifically required, for example, real-time voice transmission, except to the extent that it is presently permitted under ISP licence with Internet Telephony"

- (g) **‘DSLAM’** means Digital Subscriber Line Access Multiplexer.
- (h) **‘Internet’** is a global information system that is:
- logically linked together by a globally unique address, based on Internet Protocol (IP) or its subsequent enhancements/ upgradations;
 - able to support communications using the Transmission Control Protocol / Internet Protocol (TCP/IP) suite or its subsequent enhancements/ upgradations, and all other IP compatible protocols.
- (i) **‘IP ADDRESS’:** Operation of Internet Service requires IP addresses which is at present a 32 bit binary address. This address is required for each permanent connection on Internet. Typically, it is required for ports of routers and other ISP equipment and also for leased line connections to be provided to end users.
- (j) **‘IGSP’** means International Gateway Service Provider for Internet services.
- (k) **‘ILDO’** means International Long Distance Operator.
- (l) **‘ISP’** means Internet Service Provider licensed to provide access to Internet Service
- (m) **‘ISP Node’** means a location where the ISP’s Gateway Router is connected with upstream service provider.
- (n) **‘LAN’** means Local Area Network. It is a group of computers and associated devices that share a common communications line or wireless link.
- (o) **‘License’** means a licence granted or having effect as if granted under section 4 of the Indian Telegraph Act 1885 and Indian Wireless Telegraphy Act, 1933.
- (p) **‘Licensee’** means a registered Indian Company that has been awarded licence for providing specified public telecommunication services under sub-section (1) of section 4 of the Indian Telegraph Act 1885 (13 of 1885) for providing.
- (q) **‘NAP’** means Network Access Point. It is a major oversees Internet interconnection point that serves to logically link global Internet.
- (r) **‘NIXI’** means National Internet Exchange of India
- (s) **‘NLDO’** means National Long Distance Operator.
- (t) **‘PC’** means Personal Computer.
- (u) **‘POP’** means Point Of Presence of the service provider intending to provide Broadband service where multiple such individual Broadband connections are aggregated and the subscriber is able to access interactive services including the Internet through this POP.
- (v) **‘Quality of Service’:** The term “Quality of Services” (QoS) is defined as “the collective effect of service performance which determines the degree of

satisfaction of a user of the service indicating the performance of a broadband network and of the degree to which the network conforms to the stipulated norms”.

- (w) **‘Service Provider’** means a licensee of Internet Service, Basic Service, Unified Access Service and Cellular Mobile Service, Commercial VSAT Service etc. including Mahanagar Telephone Nigam Limited / Bharat Sanchar Nigam Limited., who is licensed to provide Internet service.
- (x) **‘Time Consistent Busy Hour (TCBH)’**: 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. ITU recommends analysis of 90 days to establish TCBH.
- (y) **‘UASP’** means Unified Access Service Provider.

3. Benchmarks for Quality of Service (QoS) Parameters

The service providers shall meet the benchmarks for the Quality of Service parameters for Broadband as laid down below:-

Sl	QoS Parameters	Benchmarks	Averaged over a period of
i.	Service Provisioning /Activation Time	100% cases in =<15 working days (subject to technical feasibility). In all cases where payment towards installation charge & security deposit is taken and the Broadband connection is not provided within 15 working days, a credit at the rate of Rs.10/ per day, subject to a maximum of installation charge or equivalent usage allowance shall be given to the customer, at the time of issue of first bill.	
ii.	Fault Repair/ Restoration Time	By next working day: > 90% and within 3 working days: 99% Rebate: (a) Faults Pending for > 3 working days and < 7 working days: rebate equivalent to 7 days of minimum monthly charge or equivalent usage allowance (b) Faults Pending for > 7	One month

		<p>working days and < 15 working days: rebate equivalent to 15 days of minimum monthly charge or equivalent usage allowance</p> <p>(c) Faults Pending for > 15 working days: rebate equivalent to one month of minimum monthly charge or equivalent usage allowance</p>	
iii.	<p>Billing Performance</p> <ul style="list-style-type: none"> • Billing complaints per 100 bills issued • %age of Billing Complaints resolved • Time taken for refund of deposits after closure: 	<p>< 2%</p> <p>100% within 4 weeks</p> <p>100% within 60 days</p>	One month
iv.	<p>Response time to the customer for assistance</p>	<p>% age of calls answered by operator (Voice to Voice)</p> <p>Within 60 seconds > 60%</p> <p>Within 90 seconds > 80%</p>	One month
v.	<p>Bandwidth Utilization/ Throughput:</p> <p>a) Bandwidth Utilization</p> <p>i) POP to ISP Gateway Node [Intra-network] Link(s)</p> <p>ii) ISP Gateway Node to IGSP / NIXI Node upstream Link(s) for international connectivity</p> <p>b) Broadband Connection Speed (download)</p>	<p><80% link(s)/route bandwidth utilization during peak hours (TCBH). If on any link(s)/route bandwidth utilization exceeds 90%, then network is considered to have congestion. For this additional provisioning of Bandwidth on immediate basis, but not later than one month, is mandated.</p> <p>Subscribed Broadband Connection Speed to be met >80% from ISP Node to User.</p>	One month
vi.	<p>Service Availability / Uptime (for all users)</p>	<p>> 90% quarter ending June 2007;</p> <p>> 98% with effect from quarter ending September 2007 and onwards</p>	One Quarter
vii.	<p>Packet Loss</p>	<p><1%</p>	One month

	(for wired broadband access)		
viii.	Network Latency (for wired broadband access) <ul style="list-style-type: none"> • User reference point at POP / ISP Gateway Node to International Gateway (IGSP/NIXI) • User reference point at ISP Gateway Node to International nearest NAP port abroad (Terrestrial) • User reference point at ISP Gateway Node to International nearest NAP port abroad (Satellite) 	<120 msec <350 msec <800 msec	One month
ix.	Customer perception of Services		One Quarter
(a)	% satisfied with the provision of service	>90%	
(b)	% satisfied with the billing performance	>90%	
(c)	% satisfied with help services	>90%	
(d)	%satisfied with network performance, reliability and availability	>85%	
(e)	% satisfied with maintainability	>85%	
(f)	% satisfied with Overall customer satisfaction	>85%	
(g)	% satisfied with Customer satisfaction with offered supplementary services such as allocation of static/fixed IP addresses, e-mail IDs etc.	>85%	

¹[3A. Consequences for failure of the service provider to meet Quality of Service benchmarks.-

¹ Ins. by the First Amendment Regulations, 2012, reg. 2 (w.e.f. 01.01.2013)

- (1) If a service provider providing broadband service fails to meet the benchmark of QoS parameter specified under serial number i to viii 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 direction 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 service provider providing broadband service 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 service provider providing broadband service for QoS parameter specified under serial number i to viii under 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 conditions of its license, or the Act or rules or regulations or order made, or, direction 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.

Provided that no order for payment of any amount by way of financial disincentive shall be made by the Authority unless the service provider providing broadband service 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. Reporting Requirement

The service providers shall submit the Performance Monitoring Reports on the QoS benchmarks for all the parameters in the format to be prescribed by the Authority on Quarterly basis, ending 31st March, 30th June, 30th September and 31st December, but not later than 6 weeks from the end of the Quarter. The Authority may review from time to time the periodicity and the format of such report.

¹[4A. Consequences for failure of the service providers to submit compliance report.-

- (1) If a service provider providing broadband service contravenes the provisions of regulation 4, it shall, without prejudice to the terms and conditions of its licence, or the provisions of the Act or rules or regulations or order made, or direction 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.

Provided that no order for payment of any amount by way of financial disincentive shall be made by the Authority unless the service provider providing broadband service has

¹ Ins. by the First Amendment Regulations, 2012, reg. 3 (w.e.f. 01.01.2013)

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.]

5. Registration of Demands for Broadband Connections

5.1 Service Providers, who intend to provide Broadband service, in a particular service area or exchange area/ locality/ city shall advertise and make public the Broadband availability plan at periodic interval of at least once in 6 months so that prospective customers can make registration.

5.2 In order to ensure that applications for Broadband connections are registered without any discrimination, the service provider shall register all demands for Broadband connections and give registration number to the prospective customer. If it is technically feasible to provide the Broadband connection on demand, the same shall be provided within the time frames indicated in the Regulation. In all other cases, waiting list shall be maintained and connections released in a non-discriminatory manner as per the waiting list.

6. Auditing

6.1 The service providers shall maintain complete and accurate records of Service Provisioning/ Activation, Fault Repair/Restoration, Billing Complaints, Response Time to the Customer for assistance, Bandwidth Utilization/Throughput, Service Availability/Uptime, Packet Loss and Latency measurements.

6.2 Network performance parameters like Bandwidth Utilisation/Throughput including Broadband Connection Speed, Packet Loss and Latency shall be measured on sample basis by the Authority from time to time, directly or if need so arises, through an independent agency.

6.3 The Authority shall audit / inspect, either directly or through an independent agency, the records relating to the reporting of compliance to the QoS parameters. The Authority, if it thinks fit, may require the service providers to get the reports submitted to the Authority audited, at its own cost, through independent and qualified agencies.

7. Customer Perception of Service

The Quality of Service parameter for Customer perception regarding Broadband service shall be measured through customer survey conducted by the Authority through an independent agency. The results of this survey may be made public for the information of the customers to generate healthy competition amongst service providers to improve service.

8. Broadband Connection Speed (download)

The service Providers shall make available a facility for measuring Broadband Connection Speed (download) at ISP node within a period of three months of coming into force of these Regulations.

9. Review:

The Authority, suo-moto or on reference from any affected party, or for good and sufficient reasons, may review and modify these regulations.

10 Interpretation:

In case of any doubt regarding interpretation of any of the provisions of these Regulations, the decision of the Authority shall be final and binding.

11. Explanatory Memorandum:

These Regulations contain at Annex - an Explanatory Memorandum to provide the background and reasons for the issuance of these regulations, detailed meaning of the various parameters and their measurement methods.

(Rajendra Singh)
Secretary