

2G Wireless Service Quality of Service Parameters

S. No.	Parameters	Benchmark
<i>I.</i>	<i>Network Related Parameters</i>	
1	Network Availability	
(i)	BTSs Accumulated downtime (not available for service)	$\leq 2\%$
(ii)	Worst affected BTSs due to downtime	$\leq 2\%$
2	Connection Establishment (Accessibility)	
(i)	Call Set-up Success Rate (within licensee's own network)	$\geq 95\%$
(ii)	SDCCH/ Paging Chl. Congestion	$\leq 1\%$
(iii)	TCH Congestion	$\leq 2\%$
3	Connection Maintenance (Retain ability)	
(i)	Call Drop Rate	$\leq 2\%$
(ii)	Worst affected cells having more than 3% TCH drop (call drop) rate	$\leq 3\%$
(iii)	Connection with good voice quality	$\geq 95\%$
4	Point of Interconnection (POI) Congestion (No. of POIs not meeting the benchmark) (Averaged over a period of quarter)	$\leq 0.5\%$

S. No.	Parameters	Benchmark
II.	<i>Customer Service Quality Parameters</i>	
5	Metering and Billing	
(i)	Metering and billing credibility - post paid	≤ 0.1%
(ii)	Metering and billing credibility - pre paid	≤ 0.1%
(iii)	Resolution of billing/charging/validity complaints	100% within 4 weeks
	Resolution of billing/charging/validity complaints	98% within 4 weeks
	Resolution of billing/charging/validity complaints	100% within 6 weeks
(iv)	Period of applying credit/waiver/ adjustment to customer's account from the date of resolution of complaints	within 1 week of resolution of complaint
6	Response time to the customer for assistance	
(i)	Accessibility of call centre/ customer care	≥ 95%
(ii)	%age of calls answered by the operators (voice to voice) within 60 seconds	≥ 90%
	%age of calls answered by the operators (voice to voice) within 90 seconds	≥ 95%
7	Termination / closure of service	
(i)	%age requests for Termination / Closure of service complied within 7 days	100% within 7 days
(ii)	Time taken for refund of deposits after closures	100% within 60 days

QoS Summary - 3G Wireless Service

S. No.	Parameters		Bench mark
1	Network Availability	Node-B's Accumulated downtime (not available for service) (%age)	$\leq 2\%$
		Worst affected Node-B's due to downtime (%age)	$\leq 2\%$
2	Connection Establishment (Accessibility)	Call Set-up Success Rate (within licensee's own network)	$\geq 95\%$
		SDCCH/Paging Channel and RRC Congestion (%age)	$\leq 1\%$
		TCH and Circuit Switched RAB Congestion (%age)	$\leq 2\%$
3	Connection Maintenance (Retainability)	Call Drop and Circuit Switched Voice Drop Rate: (%age)	$\leq 2\%$
		Worst affected cells having more than 3% TCH drop (call drop) and Circuit Switched Voice Drop Rate:-CBBH	$\leq 3\%$
		Connections with good voice quality and Circuit Switch Voice Quality (CSV quality)	$\geq 95\%$
4	Point of Interconnection	Point of Interconnection (POI) Congestion	$\leq 0.5\%$

QoS Summary - Wireline Service

S. No.	Parameters	Benchmark Dec- 2014
(i)	Fault incidences per 100 subs/month	≤ 7
(ii) a	% Fault repaired by next working day for urban areas	$\geq 85\%$
(ii) c	% Fault repaired within 5 days <i>(for urban areas)</i>	$\geq 100\%$
(iii)	Mean Time to Repair (MTTR)	$\leq 10\text{Hs}$
(iv)	Point of Interconnection (POI) Congestion (No. of POIs not meeting benchmark)	$\leq 0.5\%$
(v)	Metering & billing credibility – Post-paid	$\leq 0.1\%$
(vii) (a)	Resolution of billing/ charging/ Credit & validity complaints	98% within 4 weeks
(ix)	Response time to the customer for assistance-	
(ix) a	Accessibility of call centre/ customer care	$\geq 95\%$
(ix) c	%age of calls answered by the operators (voice to voice) within 90 seconds	$\geq 95\%$
(x)	Termination / closure of service	100% within 7 days
(xi)	Time taken for refund of deposits after closures	100% within 60 days

Broadband Service Providers against Quality of Service parameters

S.No.	Parameter	Benchmark
1	Service Provisioning	100% in= \leq 15 working days
(i)	%age of connections provided within 15 days of registration of demand	100%
2	Faults Repair	
(i)	% of faults repaired by next working day ($>90\%$)	$>90\%$
(ii)	% of faults repaired within 3 working day	$\Rightarrow 99\%$
(iii)	No. of customers to whom rent rebate is given in minumum monthly charges or equivalent usage allowance for delay in fault repair.	In nos.
3	Billing Performance	
(i)	%age of bills disputed	$<2\%$
(ii)	%age of billing complaints resolved within 4 weeks	100% within 4 weeks
(iii)	%age of cases to whom refund of deposits is made within 60 days of closures	100% within 60 weeks

S.No.	Parameter	Benchmark
4	Response Time to the Customer for assistance	
(i)	%age of calls answered by operator (Voice to voice) within 60 sec	>60%
(ii)	%age of calls answered by operator (Voice to voice) within 90 sec	>80%
5	Bandwidth utilisation/ throughput	
(i)	No. of Intra network links having Bandwidth utilisation >90% during peak hours (TCBH)	
(ii)	No. of Upstream links for International connectivity having bandwidth utilisation >90% during peak hours (TCBH)	
(iii)	% International bandwidth utilization during peak hours (TCBH) (Enclose MRTG) <90%	
(iv)	Broadband Connection Speed available (download) from ISP node to user	>80%
6	Service availability/uptime (for all users) in %age	
(i)	Service availability /uptime (for all users) in %age	>98%
7	Packet loss (for wired broadband access) in %age	<1%
8	Network latency (for wired broadband access)	
(i)	User reference point at POP/ISP Gateway node to IGSP/NIXI	<120 ms
(ii)	User reference point at ISP Gateway node to International nearest NAP port abroad (terrestrial)	<350 ms
(iii)	User reference point at ISP Gateway node to International nearest NAP port abroad (satellite)	<800 ms