

**Information note to the Press**  
**(Press Release No.104/2008/QoS)**  
**Telecom Regulatory Authority of India**

**For Immediate release**

Tel. No.:011-23230404  
Fax: 011-23213036  
E-mail: [advqos@traf.gov.in](mailto:advqos@traf.gov.in)  
Website: [www.traf.gov.in](http://www.traf.gov.in)

**TRAI Releases Report of the independent agency engaged for the Objective Assessment of Quality of Service and Customer Satisfaction Survey of Telecom Services in Bihar including JharKhand service area**

New Delhi, 22<sup>nd</sup> December, 2008 - TRAI engaged independent agencies [M/s. IMRB International](#) as independent agency for (1) conducting an objective assessment of the Quality of Service provided by basic, cellular mobile telephone service and broadband service providers and (2) for conducting subjective customer satisfaction surveys for assessing the customers' perception of the service and to assess the implementation and effectiveness of Telecom Consumers Protection and Redressal of Grievances Regulations, 2007.

**2. Methodology**

2.1 The audit and objective assessment of QoS has been done with the following aspects in view: –

- The scope of the audit and assessment work included a three stage verification process. The first stage consisted of auditing the records of the service providers and verifying the Performance Monitoring Report (PMR) data submitted to TRAI. The second stage involved three days live measurement of all the network parameters and determination of Busy hour. The third stage consisted of collection and verification of one month Quality of Service performance data.
- audit of telephone exchanges for basic service, Mobile Switching Centers (MSCs), network operating centre/point of presence for broadband service spread in the service area on sample basis;
- assessing the network conditions of each cellular mobile service provider through drive tests;
- inter-operator call assessment of cellular mobile operator through inter-network test calls;
- assessing the effectiveness of the customer care help lines of each operator through test calls;

2.2 The subjective assessment of customer perception of service and assessment of implementation and effectiveness of Telecom Consumers Protection and Redressal of Grievances Regulations, 2007 was made through a survey using questionnaire approved by the Authority. The sample size of customers for survey was determined for confidence level of 95% and with a confidence interval of 5% for C category service area for each of the service

provider. All the subscribers in the sample selected in the rural areas were interviewed personally and in the urban areas 75 % were interviewed personally and 25 % interviewed telephonically.

### **Findings of the independent agency report on Quality of Service**

#### **3 Cellular Mobile Telephone Service:**

3.1 In Bihar including Jharkhand service area the audit of quality of service data of service providers, namely, Bharti Airtel, BSNL, Reliance Communications TataTele services, Dishnet and RTL was conducted

3.2 **Objective Assessment/Audit of Quality of Service performance:** Most of the service providers do not meet the benchmarks for some of the parameters. The Time Consistent Busy Hour (TCBH) reported by all the service providers except RCOM matched the network busy hour calculated by IMRB auditors. Service Provider's performance in respect of cellular mobile telephone service based on one month data is given in Annex-`1A'.The areas of concern i.e. parameters, for which benchmark is not met by the service providers, are identified based on analysis of one month QoS performance data and live measurement.

3.3 **Drive Test:** The drive tests were conducted to verify parameters like Call Drop Rate, Call Set-up Success Rate, Blocked Call Rate and Percentage of Connections with Good Voice Quality. The areas of concern (i.e. parameters) are identified as below:

- Connection with Good Voice Quality
- Call Drop Rate.
- Call Setup Success rate.

3.4 **Customer perception of service:** Service Providers' performance in respect to the level of customer perception of service against the specified benchmark is given in Annex-`1B'.

3.5 **Percentage of Customers satisfied:** The gradation on "Satisfaction" score scale i.e. scores of "Very Satisfied" to "Satisfied" is given in Table-1 below. The survey results reveal that there is a need to improve the satisfaction level of subscribers with respect to the Help services, billing performance, Network Performance and maintainability across the service providers.

**Table-1 (Cellular Mobile Telephone Service)  
Bihar including Jharkhand Service Area**

S. No.	Customer Satisfied	Bharti Airtel	BSNL	RCOM	Dishnet (Aicel)	TATA	RTL
1	% satisfied with the provision of service	82%	75%	86%	94%	94%	83%
2 a	% satisfied with the billing performance (Postpaid customers)	75%	74%	83%	-	93%	79%
2 b	% satisfied with the billing performance (Prepaid customers)	83%	86%	86%	89%	90%	84%
3	% satisfied with help services	66%	44%	55%	47%	82.%	56%

4	% satisfied with network performance, reliability and availability	87%	62%	78%	51%	88%	71%
5	% satisfied with maintainability	88%	60%	76%	47%	85%	67%
6	Overall customer satisfaction	88%	59%	75%	41%	85%	64%
7	Customer satisfaction with offered supplementary services % satisfied	84%	62%	86%	61%	91%	73%

#### 4. Basic Service (wire line)

**4.1 Objective Assessment/Audit of QOS performance:** Basic (Wire line) services audit for Bihar including Jharkhand Service area broadly indicates that the service providers are not meeting the benchmarks for most of the Parameters. Service Provider's performance in respect of basic service (wire line) based on one month data is given in Annex-`2A'. The areas of concern i.e. parameters, for which benchmark is not met by the service providers, are identified based on analysis of one month QoS performance data and live measurement as below:

- Fault incidences (No. of faults/100 subscribers/month).
- Fault repaired within 24 hours and mean time to repair (MTTR).
- Call compilation of rate (CCR)
- Time taken for refunds of deposit after closure

**4.2 Customer perception of service:** Service Providers' performance in respect to the level of customer perception of service against the specified benchmark is given in Annex-`2B'.

**4.3 Percentage of Customers satisfied:** The gradation on "Satisfaction" score scale i.e. scores of "Very Satisfied" to "Satisfied" is given in Table-2 below. The survey results reveal that there is a need to improve the satisfaction level of subscribers with respect to the help services, Network performance and maintainability.

**Table-2 {Basic Service (Wire line)}  
Bihar including Jharkhand Service Area**

S. N.	Customer Perception of Services	BSNL Jharkhand	BSNL Bihar	TATA
1	%age subscribers satisfied with the provision of service	85%	87%	83%
2	%age subscribers satisfied with the billing performance (Post paid customers)	75%	70%	95%
	%age subscribers satisfied with the billing performance (Pre paid customers)	-	-	-
3	%age subscribers satisfied with help services	44%	40%	71%
4	%age subscribers satisfied with network performance, reliability and availability	76%	70%	90%
5	%age subscribers satisfied with maintainability	56%	54%	79%

6	Overall customer satisfaction	60%	65%	82%
7	%age subscribers satisfied with offered supplementary services	82%	89%	87%

## 5. Broadband Service

**5.1 Objective Assessment/Audit of QOS performance:** The audit for Broadband Service Providers was conducted at their respective network operating centre/point of presence (POPs) in the Bihar including Jharkhand circle. Service Provider's performance based on one month data is given in Annex -`3A'. The area of concern (i.e. parameters) for which benchmark is not met by the service providers is identified based on analysis of one month QoS performance data and live measurement as below:

- Percentage connection provided within 15 days
- Billing complaints resolved within 4 weeks
- Time taken for refund of deposits after closure

**5.2 Customer perception of service:** Service Providers' performance in respect to the level of customer perception of service against the specified benchmark is given in Annex-`3B'.

**5.3 Percentage of Customers satisfied:** The gradation on "Satisfaction" score scale i.e. scores of "Very Satisfied" to "Satisfied" is given in Table-3 below. The survey results reveal that Help Services, Network Performance, Maintainability are areas where all service providers have scored relatively lower score as compared to other parameters.

**Table-3 (Broadband Service)  
Bihar including Jharkhand Service Area**

S. N.	Customer Perception of Services	Sify	BSNL Jharkhand	BSNL Bihar
1	% satisfied with the provision of service	96%	79%	81%
2a	% satisfied with the billing performance (Prepaid customers)	92%	89%	100%
2b	% satisfied with the billing performance (Postpaid customers)	86%	85%	84%
3	% satisfied with help services	60%	58%	57%
4	% satisfied with network performance, reliability and availability	62%	74%	77%
5	% satisfied with maintainability	74%	73%	83%
6	% satisfied Overall customer satisfaction	57%	72%	62%
7	% satisfied with customer satisfaction with offered supplementary services such as allocation of static / fixed IP addresses, email ids etc.	96%	94%	96%

**6. Telecom Consumers Protection and Redressal of Grievances score:**

The Authority noted with concern that the awareness of subscribers of all the service providers regarding the three stage grievance redressal mechanism is still very low. The summary of survey results for assessment of implementation and effectiveness of Telecom Consumer Protection and Redressal of Grievances Regulations in respect of Cellular Mobile Service, Basic (Wire line) Service and Broadband Service is given in Annex-`1C', Annex '2C' and Annex "3C' respectively.

***7. The detailed Report on Quality of Service – Audit/Objective Assessment and Customer Satisfaction Survey, including grievance redressal mechanism, conducted during the period April, 2008 to August, 2008 is placed at TRAI Website ([www.trai.gov.in](http://www.trai.gov.in)).***

---

**Contact Address in case any clarification required:**

**M.C.Chaube,  
Advisor (QOS), TRAI  
Mahanagar Door Sanchar Bhawan,  
Jawahar Lal Nehru Marg (Old Minto Road),  
New Delhi -110002, Tel. No. 23230404/23220708**

**Authorized to issue: Advisor (QOS)**

**Annex-1A'**  
**Objective Assessment of Quality of Service - Service Provider's Performance in  
respect of Cellular Mobile Telephone Service  
Bihar including Jharkhand Service Area**

Parameters	Benchmark	Bharti	BSNL	RCOM	TATA	Dishnet	RTL
Accumulated downtime for community isolation	< 24 hrs.	3.48	0.00	0.75	0.00	0.00	17.60
Call Set Up Success Rate (CSSR)	> 95%	94.80%	91.58%	98.03%	97.77%	98.23%	96.00%
Service Access Delay*	9 to 20 seconds (< = 15 seconds for 100 calls)	20.60	12.00	4.00	11.62	13.20	Complied
<b>Blocked Call Rate</b>							
<i>SDCCH/Paging Channel Congestion</i>	<1%	7.53%	0.69%	0.00%	0.00%	3.74%	0.97%
<i>TCH Congestion</i>	< 2%	7.34%	0.39%	0.56%	0.00%	3.90%	1.79%
Call drop rate	< 3%	2.30%	2.51%	2.21%	0.98%	5.51%	2.00%
Percentage connections with good voice quality*	> 95%	79.26%	84.71%	98.92%	98.55%	92.91%	95.07%
<b>Service coverage*</b>							
<i>In door</i>	>-75dbm	Complied	Complied	Complied	Complied	Complied	Complied
<i>In vehicle</i>	>-85dbm						
<i>Out door - in city</i>	>-95dbm						
POI congestion	< 0.5%	Complied	Complied	Complied	Complied	Complied	Complied
<b>Calls answered electronically</b>							
Percentage calls answered within 20 seconds	80%	100%	97.64%	97.90%	DNP – Operator claimed no data is present at circle level	100.00%	Details not available as call centre is outsourced
Percentage calls answered within 40 seconds	95%	100%	99.21%	97.90%		100.00%	
<b>Calls Answered by the operator</b>							
Percentage calls answered within 60 seconds	80%	84.07%	81.50%	52.10%	DNP – Operator claimed no data is present at circle level	29.00%	100.00%
Percentage calls answered within 90 seconds	95%	88.37%	89.00%	59.73%		Not Measured	DNP – Operator claims that the parameter is not measured
<b>Billing Complaints</b>							
Billing complaints per 100 bills issued	<0.1%	0.00%	0.02%	0.09%	0.06%	Only prepaid subscribers	0.00%
Percentage billing complaints resolved within 4 weeks	100%	No billing complaints received	100%	100%	100%		No billing complaints received
Period of refunds/payments due to customers from the date of resolution of complaints	<4 weeks						

\*Details pertaining to these are obtained through operator assisted drive tests. Results of the drive tests are explained in greater detail in critical findings

\*\* Methodology not in line with QoS

Figures provided on All India basis

Not meeting the benchmark

B'mark = TRAI Benchmark, DNA = Details not available, NA: Not Applicable

**Annex-1B'**  
**Customers Perception of Service for Cellular Mobile Telephone Service  
through Survey Bihar including Jharkhand Service Area**

S. N.	Customer Perception of Services	B'mark	Airtel	BSNL	Rel Comm	Aircel	TATA	RTL
1	%age subscribers satisfied with the provision of service	>95%	65%	62%	68%	74%	72%	67%
2	%age subscribers satisfied with the billing performance (postpaid)	>90%	63%	57%	62%	No postpaid subscribers	66%	61%
3	%age subscribers satisfied with the billing performance (prepaid)	>90%	63%	63%	64%	64%	66%	62%
4	%age subscribers satisfied with help services	>90%	55%	46%	50%	47%	62%	51%
5	%age subscribers satisfied with network performance, reliability and availability	>95%	65%	53%	61%	49%	67%	58%
6	%age subscribers satisfied with maintainability	>95%	65%	52%	59%	48%	66%	56%
7	Overall customer satisfaction	>95%	66%	52%	59%	44%	65%	55%
8	%age subscribers satisfied with offered supplementary services	>95%	66%	52%	63%	52%	66%	57%

**Annex-1C'**  
**Assessment of implementation and effectiveness of Telecom Consumer  
Protection and Redressal of Grievances Regulations in respect of Cellular  
Mobile Telephone Service through Survey  
Bihar including Jharkhand Service Area**

S.N.	Sub Parameter	Airtel	BSNL	Rel Comm	Aircel	TATA	RTL
1	Awareness of three stage grievance mechanism	16%	17%	11%	17%	18%	16%
2	For pre-paid customers, awareness about item-wise call charge details on request	18%	21%	17%	12%	19%	16%
3	If aware (for pre-paid customers), ever denied of item wise usage charge details for pre-paid connection	4%	5%	2%	4%	2%	2%
4	For new customers, provisioning of 'Manual of Practice' while taking the new connection	32%	17%	44%	74%	53%	39%
5	Awareness of Call center for redressing grievances	88%	84%	88%	78%	83%	88%
6	Penetration of consumers made any complaints to the toll free number within last 6 months	32%	18%	17%	27%	15%	19%
7	Call center informing about the action taken on complaints	59%	45%	52%	40%	56%	35%
8	Resolution of complaint by customer care within 4 weeks of lodging complaint	12%	18%	8%	11%	14%	7%
9	percentage satisfied with complaint resolution by call center	52%	43%	46%	42%	51%	48%
10	Awareness of Nodal officer for redressing grievances	1%	2%	2%	4%	2%	1%
11	Awareness of Appellate authority for redressing grievances	0%	0%	0%	0%	0%	0%

**Annex-`2A`**  
**Objective Assessment of Quality of Service - Service Provider's**  
**Performance in respect of Basic Service (Wire line)**  
**Bihar including Jharkhand Service Area**

S.no	Parameters	B'mark	BSNL – Bihar	BSNL – Jharkhand	TATA*
1	Provision of telephone after registration of demand				
1.1	Connections completed within 7 days	100%	24%	75%	NA
2	Fault incidence/clearance statistics				
3	Fault incidences(No. of faults/100 subscribers/month)	<3	10.6	8.7	2.1
3.1	Faults repaired within 24 hours	>90%	64%	85%	100%
3.2	Faults repaired within three working days	100%	83%	97%	100%
4	Mean time to Repair (MTTR)	<8 hours	29.00	23	<8
5	Call Completion Rate (CCR)	>55%	36%	37%	60%
6	Metering and billing credibility				
6.1	Billing complaints per 100 bills issued	<0.1%	0.11%	0.02%	Details pertaining to billing are not available at exchanges
6.2	%age of billing complaints resolved within 4 weeks	100%	97%	Only 2 complaints, none resolved in time	
7	Customer care/helpline promptness				
7.1	<u>Shift requests attended</u>				
	Shift requests attended within 3 days	95%	26%	64%	No cases
7.2	<u>Closure request attended</u>				
	Closure within 24 hours	95%	52%	53%	No cases
7.3	<u>Supplementary (additional) service requests attended</u>				
	Additional facility provided within 24 hours	95%	26%	64%	No cases
8	Response time to customer for assistance				
8.1	% age call answered through IVR in 20 seconds	80%	100%	100%	Centralized call centre in Hyderabad.
	% age call answered through IVR in 40 seconds	100%	100%	100%	
8.2	% age calls answered by operator in 60 seconds	80%	No call centre for Voice to Voice present in the circle		
	% age calls answered by operator in 90 seconds	95%			
9	Time taken for refund of deposits after closure				
9.1	%age cases where refund received within 60 days	100%	96%	52%	NA

{\*Note: For BSNL data pertains to the sample 5% of exchanges audited during the period of April to July 2008, whereas for rest of the operators figures pertain to all the exchanges present in the circle. TATA teleservices has limited presence in Bihar and Jharkhand and cater only to corporate customers}

\*\* Methodology not in line with QoS ■ Figures provided on All India basis ■ Not meeting the benchmark ■ B'mark = TRAI Benchmark, DNA = Details not available, NA: Not Applicable

**Annex-`2B`  
Customers Perception of Service for Basic Service (Wire line)  
through Survey Bihar including Jharkhand Service Area**

S. N.	Customer Perception of Services	Benchmark	BSNL - Jharkhand	BSNL - Bihar	TATA
1	% subscribers satisfied with the provision of service	>95%	68%	67%	61%
2	% subscribers satisfied with the billing performance (Post paid customers)	>90%	59%	56%	65%
3	% subscribers satisfied with the billing performance (Pre paid customers)		Very few prepaid customers	Very few prepaid customers	Very few prepaid customers
4	% subscribers satisfied with help services	>90%	46%	45%	53%
5	% subscribers satisfied with network performance, reliability and availability	>95%	60%	56%	66%
6	% subscribers satisfied with maintainability	>95%	50%	48%	57%
7	Overall customer satisfaction	>95%	54%	54%	61%
8	% subscribers satisfied with offered supplementary services	>95%	67%	63%	64%

**Annex-`2C`  
Assessment of implementation and effectiveness of Telecom Consumer  
Protection and Redressal of Grievances Regulations in respect Basic  
Service (Wire line) through Survey Bihar including Jharkhand Service Area**

S. N.	Sub-parameter	BSNL - Jharkhand	BSNL - Bihar	TATA
1	Awareness of three stage grievance mechanism	10%	16%	26%
3	Awareness of Call center for redressing grievances	58%	80%	68%
4	Penetration of consumers made any complaints to the toll free number within last 6 months	17%	28%	13%
5	Call center informing about the action taken on complaints	29%	50%	80%
6	Resolution of complaint by customer care within 4 weeks of lodging complaint	9%	17%	0%
7	% subscribers satisfied with the complain resolution by call center	45%	43%	47%
8	Awareness of Nodal officer for redressing grievances	5%	3%	29%
9	Awareness of Appellate authority for redressing grievances	1%	1%	13%

**Annex-`3A`**  
**Objective Assessment of Quality of Service - Service Provider's Performance in respect of Broadband Service Bihar including Jharkhand Service Area**

S.No	Parameters	B'mark	BSNL - Bihar	BSNL - Jharkhand	Sify
1	<b>Service provisioning uptime</b>				
1.1	Total connections registered		396	478	No new connections registered in the month of audit
1.2	Percentage connections provided within 15 days	100%	90%	100%	
2	<b>Fault repair restoration time</b>				
2.1	Total number of faults registered/calls made		777	676	No faults reported in the month of Audit. Only fault complaint booked at the call centre are reported in PMR
2.2	Percentage faults repaired by next working days	> 90%	96%	91%	
2.3	Percentage faults repaired within three working days	99%	100%	100%	
3	<b>Billing performance</b>				
3.1	Total bills generated		6804	7541	All prepaid customers
3.2	Billing complaints per 100 bills issued	<2%	0.03%	0.13%	
3.3	%age of billing complaints resolved within 4 weeks	100%	50%	100%	
3.4	Time taken for refund of deposits after closure	100% cases within 60 days	80%	No cases	No cases
4	<b>Customer care/helpline assessment</b>				
4.1	Percentage calls answered within 60 seconds	> 60%	Break up not available	80%	No calls received from Bihar and Jharkhand circle
4.2	Percentage calls answered within 90 seconds	>80%		100%	
5	<b>Bandwidth utilization/Throughput</b>				
5.1	Total number of intra network links tested		BRAS-23,T1-24,T2-610, DSLAM-5456		400
5.2	Total number if intra network links crossing 90%		Uplink Traffic in Chennai BRAS is > 90%		4
	<b>Upstream Bandwidth (ISP Node to NIXI/NAP/IGSP)</b>				
5.3	Total number of upstream links		97	28	
5.4	Number of upstream links > 90%		1	0	
5.5	Percentage bandwidth utilised on upstream links	<80%	75%	74%	
6	<b>Broadband download speed</b>	>80%	Complied		Complied
7	<b>Service availability/uptime</b>	>98%	100.00%		100.00%
8	<b>Packet loss</b>	<1%	<1%		<1%
9	<b>Network Latency</b>				
9.1	POP/ISP Node to NIXI to IGSP	<120msec	Complied		<45 ms
9.2	ISP node to NAP port	<350msec	Complied		<250 ms

**Annex-`3B`  
Customers Perception of Service for Broadband Service through Survey  
Bihar including Jharkhand Service Area**

S. N.	Customer Perception of Services	Benchmark	Sify	BSNL - Jharkhand	BSNL - Bihar
1	% subscribers satisfied with the provision of service	>90%	78%	61%	61%
2	% subscribers satisfied with the billing performance (Prepaid customers)	>90%	65%	63%*	67%*
3	% subscribers satisfied with the Billing performance (Postpaid customers)	>90%	61%*	63%	61%
4	% subscribers satisfied with help services	>90%	53%	50%	51%
5	% subscribers satisfied with network performance, reliability and availability	>85%	54%	60%	61%
6	% subscribers satisfied with maintainability	>85%	58%	58%	61%
7	Overall level of customer satisfaction	>85%	48%	58%	55%
8	% subscribers satisfied with offered supplementary services	>85%	65%	65%	67%

**Annex-`3C`  
Assessment of implementation and effectiveness of Telecom Consumer  
Protection and Redressal of Grievances Regulations in respect Broadband  
Service through Survey Bihar including Jharkhand Service Area**

S. N.	Sub-parameters	Sify	BSNL - Jharkhand	BSNL - Bihar
1	Awareness of three stage grievance mechanism	31%	7%	9%
2	For pre-paid customers, awareness about item-wise call charge details on request	34%	0%	52%
3	If aware (for pre-paid customers), ever denied of item-wise usage charge details for pre-paid connection	19%	1%	1%
4	For new customers, provisioning of 'Manual of Practice' while taking the new connection	34%	15%	52%
5	Awareness of Call center for redressing grievances	85%	70%	89%
6	Penetration of consumers made any complaints to the toll free number within last 6 months	52%	19%	15%
7	Call center informing about the action taken on complaints	46%	29%	39%
8	Resolution of complaint by customer care within 4 weeks of lodging complaint	9%	9%	7%
9	Percentage satisfied with the complaint resolution by call center	50%	49%	61%
10	Awareness of Nodal officer for redressing grievances	2%	6%	3%
11	Awareness of Appellate authority for redressing grievances	1%	2%	2%