

Report On QoS Parameters Related to Network Congestion of CMSPs

In a multi operator environment, an efficient and adequate interconnection between various operator is of utmost importance. In the previous “Regulation on QOS of Basic and Cellular Mobile Telephone Services, 2000”, there were no parameters to measure and monitor the congestion in either the radio network of the CMSPs or at their “Point of Interconnect “ with other operators.

With the exponential increase in the number of subscribers in last two years and the number of operators in each service area, the issue of efficient and adequate interconnection between operators has become very important. Though TRAI has been monitoring the provision of interconnection between various operators, however, considering its effect on Quality of service, TRAI specified additional parameters i.e. “ POI Congestion” and “Blocked call Rate” in its revised QoS Regulation issued in July 2005. The operators are required to submit the data regarding this parameter on monthly basis.

The benchmarks for these parameters are :

POI Congestion: < 0.5%

Blocked Call Rate: (i) SDCCH Congestion < 1%
(ii) TCH Congestion < 2%

The network congestion report of all CMSPs for the month of July is placed below along with a comparison of the previous six months. **The report is only for those parameters and places where the prescribed benchmark is not met.**

From the perusal of the report, the following observation emerges:

1. In a number of major and minor cities, the level of congestion between the networks of private operators and the BSNL network is far more than this benchmark and the number of such places are increasing.
2. In the month of January 2005, there were about 24 places having congestion level more than 10% i.e. twenty times worse than the benchmark. In July 2005, the number of such places has increased to 86.
3. In some of the major cities viz. Patna, Agra and Lucknow, the level of congestion between the POIs of private CMSPs and BSNL TAXs continues to be very high since last few months.

In case of BSNL, in a number of service areas, there is congestion in its radio network. Against the benchmark of < 2% for the TCH Congestion, the figures for the service areas of Orissa, Haryana, UP-W, Bihar and Rajasthan are 15.3%, 15.1% 14.0% 12.1% and 11.0% respectively.

POI Congestion Report of M/s Hutchison for the month of Jan - July, 2005

Sr. No.	Name of POIs	Traffic Failed for all POIs <0.5%						
		Jan	Feb	March	April	May	June	July
I	Andhara Pradesh							
	Hutch_Idea	0.00%	0.00%	0.00%	0.10%	14.5	29.63%	19.17%
II	Punjab							
	POI with BSNL							
	JALANDHAR	0.14%	10.42%	0.00%	0.00%	10.29%	25.63%	82.00%
III	Rajasthan							
	POI with BSNL							
	Pali	4.00%	6.48%	6.48%	11.00%	29.60%	31.58%	12.56%
	Nagaur	0.92%	0.99%	12.00%	12.00%	41.00%	53.00%	53.23%
	Sw Madhopur	10.08%	33.29%	37.12%	59.00%	NA	60.00%	63.00%
	Bharatpur (Added in Feb 05)	-	0.00%	8.12%	19.00%	99.00%	52.00%	41.00%
	Sikar	34.00%	23.00%	36.00%	46.00%	93.00%	93.00%	36.00%
IV	UP East							
	POI with BSNL							
	Lucknow	21.00%	24.00%	14.00%	87.00%	50.00%	13.00%	19.00%
	Jaunpur	70.00%	63.00%	38.00%	93.00%	98.00%	90.00%	57.00%
	Orai_out	0.00%	0.00%	0.00%	16.00%	16.00%	24.00%	24.00%
V	West Bengal (ROB)							
	POI with BSNL							
	BERHAMPUR TAX	10.62%	36.00%	44.00%	13.00%	19.00%	50.00%	25.00%
	ASANSOL TAX	53.00%	52.00%	51.00%	18.00%	52.00%	55.00%	55.00%
	KHRAGPORE TAX	45.00%	50.00%	10.00%	6.00%	40.00%	57.00%	57.00%
	= Service Providers not meeting the benchmarks			NA =	Data not available			
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POIs Congestion Report of M/s Reliance Telecom Limited for the months of Jan - July, 2005								
Sr. No.	Circle	Traffic Failed/Congestion on Individual POIs (%age)						
	POI Name	JAN	FEB	MAR	APR	MAY	JUN	JUL
I	Madhya Pradesh							
	POI with BSNL							
1	BHOPAL	2.93%	3.00%	3.18%	4.21%	16.09%	16.59%	17.28%
2	KHANDWA	2.71%	3.03%	0.33%	0.73%	2.02%	1.41%	0.67%
3	KHARGONE	0.09%	0.00%	3.23%	1.02%	1.07%	1.56%	1.61%
4	CHINDWARA	0.00%	0.00%	1.94%	0.96%	0.45%	1.74%	1.79%
5	VIDISA	0.15%	0.00%	0.00%	0.59%	0.18%	1.93%	1.98%
6	DURG	3.25%	8.01%	9.74%	11.63%	6.30%	7.17%	4.46%
ii	Bihar							
	POI with BSNL							
1	PATNA	12.76%	23.37%	18.21%	12.40%	13.22%	14.99%	4.54%
2	GAYA	12.32%	19.14%	19.50%	14.24%	15.04%	18.02%	18.53%
3	MUZAFFARPUR	3.54%	12.19%	12.20%	13.96%	14.90%	15.31%	10.77%
4	BHAGALPUR	3.27%	9.96%	11.99%	13.88%	13.09%	16.74%	18.74%
6	DARBHANGA	10.16%	10.76%	12.86%	12.88%	13.69%	5.45%	0.00%
7	SAHARSA	3.56%	11.56%	14.08%	12.49%	13.54%	12.10%	14.10%
8	MOTIHARI	3.93%	11.61%	12.25%	13.41%	15.87%	6.13%	5.38%
9	MUNGER	4.13%	12.19%	12.87%	12.53%	11.24%	17.52%	18.75%
10	JAMSHEDPUR	3.92%	11.88%	6.35%	12.67%	13.55%	13.84%	19.00%
11	DHANBAD	7.40%	10.32%	9.35%	10.11%	16.75%	15.05%	17.00%
12	HAZARIBAGH	8.36%	10.21%	7.20%	11.30%	13.67%	14.98%	19.00%
iii	West Bengal							
	POI with BSNL							
1	COOCHBEHAR	0.00%	1.31%	1.57%	15.23%	16.59%	14.56%	1.08%
2	RAIGANJ	0.00%	0.70%	0.75%	1.40%	1.90%	3.78%	2.97%
3	ASANSOL	0.00%	3.93%	3.09%	11.46%	3.52%	4.15%	8.87%
iv	Himachal Pradesh							
	POI with BSNL							
1	SHIMLA	5.14%	9.77%	10.90%	12.15%	18.30%	17.80%	20.07%
2	SOLAN	0.00%	0.00%	0.00%	0.51%	1.38%	0.71%	2.30%
3	DHARAMSHALA	8.48%	12.62%	12.12%	12.59%	11.00%	17.26%	18.97%
4	KULLU	0.78%	0.00%	1.69%	5.91%	11.61%	9.28%	5.64%
5	HAMIRPUR	5.27%	9.35%	9.73%	12.78%	14.28%	13.50%	14.27%
v	Assam							
	POI with BSNL							
1	GUWAHATI	2.27%	2.84%	2.35%	1.72%	5.02%	9.60%	10.61%

POIs congestion Report of M/s Reliance Infocom Limited for the months of Jan - July, 2005

Sr. No.	Service area and POIs	Traffic Failed on Individual POIs (%age)						
		JAN	FEB	MAR	APR	MAY	JUN	JULY
i	Bihar							
	POI with BSNL							
1	Patna		31.15%	30.23%	31.15%	36.55%	48.05%	61.57%
ii	Haryana							
	POI with BSNL							
1	AMBALA	16.41%	30.77%	27.35%	30.77%	1.55%	2.34%	3.29%
iii	Karnataka							
	POI with BSNL							
1	BELGAUM	0.00%	7.63%	3.03%	7.63%	1.35%	2.10%	2.54%
iv	Maharashtra							
	POI with BSNL							
1	AMRAVATI	7.48%	27.59%	8.35%	27.59%	46.03%	56.86%	26.46%
2	JALNA	19.91%	40.16%	38.90%	40.16%	42.17%	45.96%	38.81%
3	RATNAGIRI	2.80%	11.20%	19.83%	11.20%	5.54%	8.04%	5.78%
v	Orissa							
	POI with BSNL							
1	Cuttack	0.00%	4.20%	10.30%	4.20%	34.92%	31.26%	29.67%
vi	Rajasthan							
	POI with BSNL							
1	ALWAR	0.00%	31.11%	37.72%	31.11%	41.09%	27.83%	28.63%
2	CHITTORGARH	9.83%	37.45%	40.00%	37.45%	29.67%	28.43%	7.87%
3	JAIPUR	0.00%	14.80%	59.07%	14.80%	12.61%	25.36%	24.43%
vii	UP - E							
	POI with BSNL							
1	AZAMGARH		17.02%	7.77%	17.02%	37.86%	64.76%	71.69%
2	Lucknow L1 TAX Indira Nagar		51.82%	49.98%	51.82%	31.69%	8.78%	44.60%
3	LUCKNOW L1 TAX Kiserbagh		6.45%	14.29%	6.45%	15.47%	14.33%	54.20%
viii	UP -W							
	POI with BSNL							
1	AGRA	8.59%	20.86%	26.27%	20.86%	23.06%	27.37%	30.23%
2	NAINITAL	13.81%	9.05%	18.93%	9.05%	30.14%	39.86%	10.58%

POI Congestion Report of M/s Idea Cellular Limited (Jan - July, 2005)

Sr. No.	Name of POIs	Traffic Failed for all POIs (%)						
		January	February	March	April	May	June	July
1	Madhya Pradesh							
(i)	Idea - BSNL							
	Bhopal	21.30	23.40	22.10	2.50	5.10	4.50	6.60
	Khargone	20.10	27.20	29.20	27.40	26.60	29.30	28.40
	Khandwa	3.40	7.00	7.40	7.00	7.60	17.30	13.60
	Raipur	10.30	13.50	19.70	19.00	25.30	6.30	5.40
	Raigarh	19.30	26.80	25.70	24.20	19.30	NA	20.50
	Narsingpur	1.20	1.00	1.00	0.90	1.00	3.40	2.60
	Shahdol	3.90	7.50	13.40	16.20	16.90	18.90	19.10
2	Andhra Pradesh							
	(i) BSNL							
	KARIMNAGAR	29.44	51.73	53.05	24.21	27.39	16.69	2.60
	KURNOOL	9.14	20.75	9.50	22.05	31.27	27.83	30.07
	MAHABOONAGAR	33.27	42.22	44.09	39.58	39.75	35.70	31.85
	NALGONDA	0.73	5.88	9.20	5.44	6.44	6.09	4.91
	CUDDAPAH	0.00	1.45	6.07	6.87	11.55	20.33	4.24
	SRIKAKULAM	2.42	4.82	3.51	2.67	5.33	3.50	1.86
	(ii) Idea - Hutch							
	HUTCH HYD	0.00	10.87	3.45	0.69	18.83	3.61	18.67
	(iii) Idea - Reliance							
	RELIANCE FXD VJA MSC04	0.00	0.00	0.29	0.82	0.90	16.19	50.05
	(iv) NLD / ILD Operators							
	RELIANCE NLD ILD FIXED	0.00	0.00	0.00	0.00	13.78	30.13	23.58
3	Maharashtra							
(i)	Idea - BSNL							
	Ahmednagar	1.40	2.67	7.05	6.62	8.75	6.82	2.10
	Jalna	65.90	72.57	71.69	68.00	61.90	63.10	55.70
	Kalyan	1.50	2.89	8.74	5.80	9.83	3.40	5.10
	Nagpur	2.10	4.00	15.83	6.30	0.52	7.33	2.40
	Ratnagiri	13.10	11.10	18.52	16.95	14.20	16.03	11.60
4	Gujarat							
(i)	Idea - BSNL							
	ANAND	1.18	5.83	3.34	4.75	11.45	7.94	2.40
	BHAVNAGAR	0.00	1.40	2.66	6.30	8.00	8.94	4.45
	AMRELI	11.28	27.35	11.24	3.63	5.80	5.52	5.25
5	Kerala							
	BSNL NLD		50.60	11.72	0.00	2.84	3.02	60.39
6	UP(W)							
(i)	Idea - BSNL							
	Haldwani	1.17	27.35	15.10	4.08	7.01	10.14	3.76
	Haridwar	0.01	0.00	6.89	3.09	5.46	7.61	1.01
	Mainpuri	29.25	71.12	44.71	4.60	0.00	3.01	2.87
	Bijnaur	15.36	74.73	72.26	73.66	73.72	74.85	72.17
	Pilibhit	18.38	6.13	40.51	21.42	28.30	25.67	25.45
	Agra	12.84	61.74	55.29	59.79	30.15	40.86	48.37
	Reliance_Local_MSC-A	1.05	0.00	22.54	3.06	2.36	NA	3.57

Comparative POIs Congestion Report of M/s Bharti Tele-ventures Limited for the months of April - July, 2005

Service area	April	May	June	July
ASSAM				
POI with Other CMTO				
Reliance Telecom			69.00	89.65
BIHAR				
POI With BSNL (Level1 Tax)				
Patna level 1 tax	14.47	28.03	23.76	35.40
PATNA Level 1 TAX for ILD	5.31	14.30	33.32	28.80
Patna L1 for National Roamer	77.07	83.73	81.58	74.70
POI With BSNL (Level2 Tax)				
Chapra L2			0.29	30.50
Dharbhanga L2			18.30	36.10
CHENNAI				
POI With Other Operators				
Aircel	8.46	25.59	4.33	18.00
GUJARAT				
POI With BSNL (Level1 Tax)				
Bhadra level 1 tax - Ahmedabad	16.04	0.92	13.57	24.68
POI With BSNL (Level2 Tax)				
Gulbai tekra level 2 TAX_ahd	6.30	14.16	30.00	37.26
Gulbai tekra level 2 TAX_ahd	0.52	9.25	28.11	29.22
Anandlevel 2 TAX	95.58	0.00	21.85	16.58
Palanpur level 2 TAX	1.99	94.76	96.11	95.72
Mehasanal evel 2 TAX	89.44	87.10	89.01	85.19
Bhavanagar level 2 TAX	73.64	91.81	86.44	59.68
JUNAGADH level 2 TAX	0.00	34.94	44.46	39.40
RAJKOT level 2 TAX	1.06	34.63	26.74	28.26
SURENDRANAGAR level 2 TAX	24.43	74.78	85.43	82.17
HIMACHAL PRADESH				
POI With BSNL (Level2 Tax)				
HAMIRPUR	17.60	34.46	23.50	28.00
POI With BSNL (Level1 Tax)				
JAMMU TAX level 1	86.39	88.37	83.20	81.60
KARNATAKA				
POI With BSNL (Level2 Tax)				
TUMKUR	69.98	25.45	2.43	23.86
HASSAN	38.00	40.36	8.09	34.12
KERALA				
POI With Other Operators				
Escotel	10.00	26.92	12.80	11.00
MAHARASHTRA & GOA				
POI With Other CMTO				
Bharti - Cellone	32.28	31.86	44.83	19.07
POI With BSNL (Level2 Tax)				
Jalgaon TAX	2.32	1.36	0.00	18.98
Amravati TAX	9.87	8.89	44.63	44.63
NORTH EAST				
POI With Other NLDO				
Bharti Telesonic NLD			3.40	41.01
RAJASHTAN				
POI With BSNL (Level1 Tax)				
Jaipur TAX Level 1	8.41	23.36	20.93	30.86
POI With BSNL (Level2 Tax)				

Alwar TAX Level 2	1.25	35.13	27.25	47.60
Bharatpur TAX Level 2		0.04	15.39	45.32
Bhilwara TAX Level 2	0.29	1.44	1.62	11.52
Bikaner TAX Level 2	1.72	10.27	16.20	23.18
Bundi TAX Level 2	1.13	22.58	13.54	14.25
Jhalawar TAX Level 2	1.51	41.21	30.01	33.11
Jhunjhunu TAX Level 2	0.86	73.10	62.45	62.15
Kota TAX Level 2	0.95	10.13	23.70	20.09
Sirohi TAX Level 2	1.60	68.03	63.50	62.24
Sikar TAX Level 2	0.79	60.04	63.78	57.06
Pali TAX Level 2	1.53	81.27	78.05	73.04
TAMIL NADU				
POI With BSNL (Level2 Tax)				
Coimbatore	11.16	11.42	10.31	15.00
Dharmapuri	32.00	41.21	30.90	40.00
Ooty	24.00	33.73	24.80	38.00
U.P.(EAST)				
POI With BSNL (Level1 Tax)- Lucknow				
IndraNagar TAX level 1	43.00	36.00	27.50	51.20
IndraNagar AXE TAX level 1	56.00	40.00	50.00	53.20
KesharBagh TAX level 1	60.00	60.00	54.50	71.80
POI With BSNL (Level2 Tax)				
Barabanki Level2	33.00	42.00	38.90	51.20
Mirzapur Level2	0.00	1.40	14.90	22.20
U.P. (WEST)				
Bharti_BSNL Level 1 , Agra	52.04	25.30	45.30	56.90
Haldwani Level 2	90.00	91.00	89.20	73.80

POI Congestion Report of M/s Spice Communications (Jan - June 2005)				
Sr. No.	Name of POIs			
		May	June	July
1	Punjab			
	POI with BSNL			
1	Hoshiarpur	0.00%	0.00%	2.94%
2	Jalandhar	4.15%	6.33%	10.58%
3	Kotkapura	2.82%	0.00%	3.50%
4	Amritsar	0.00%	0.00%	1.50%
5	Bhatinda	0.00%	0.00%	3.17%
6	Chadigarh	0.00%	0.00%	0.70%
7	Ludhiana	2.82%	0.00%	3.41%
8	Pathankot	1.11%	0.01%	2.18%
9	Patiala	0.00%	0.00%	2.99%
10	Ropar	0.00%	0.00%	2.23%
11	Sangroor	0.00%	0.00%	3.04%
	POI with other Operators			
12	HFCL_Basic	0.00%	0.00%	3.37%
13	BTSOL_NLD	0.10%	0.00%	3.18%
14	VSNL_ILD	0.00%	0.00%	3.81%

POIs Congestion of M/s MTNL for the month of April-July, 2005

Sr. No.	Name Service area and POIs	Traffic Failed for all POIs (%) <.5%			
		April	May	June	July
I	Mumbai				
	MSC - 1 (Prabhadevi)				
1	TAX_FOUNTAIN	1.36%	1.57%	2.00%	2.00%
2	TAX_PRABHADEVI	0.72%	0.57%	0.60%	0.60%
3	TAX_GHATKOPAR	0.54%	0.64%	0.66%	0.66%
4	TAX_GOREGOAN	0.67%	0.91%	0.75%	0.75%
5	LEVEL 2 TENDAM	4.98%	2.81%	1.91%	1.91%
6	LEVEL3 TENDAM	4.57%	6.15%	6.86%	6.86%
7	LEVEL 4TENDAM	7.70%	2.89%	2.02%	2.02%
8	LEVEL 5 TENDAM	2.30%	4.08%	4.12%	4.12%
9	LEVEL 6 TENDAM	2.79%	3.55%	4.33%	4.33%
10	LEVEL 7 TENDAM	1.50%	2.35%	3.22%	3.22%
11	LEVEL 8 TENDAM	1.59%	1.76%	1.54%	1.54%
12	MTNL_AIRTEL	4.88%	4.82%	5.01%	5.01%
13	MTNL_BPL	3.17%	3.97%	4.69%	4.69%
14	MTNL_HUTCH ORANGE	7.45%	5.68%	5.30%	5.30%
15	MTNL_RELIANCE	4.75%	4.82%	5.89%	5.89%
16	MTNL_TATA	3.02%	2.62%	2.34%	2.34%
	MSC - 2 (DKC)				
1	TAX_FOUNTAIN	5.41%	8.05%	8.74%	8.74%
2	TAX_PRABHADEVI	5.99%	8.60%	8.70%	8.70%
3	LEVEL 2 TENDAM	8.68%	3.40%	3.31%	3.31%
4	LEVEL3 TENDAM	8.49%	9.13%	9.88%	9.88%
5	LEVEL 4TENDAM	8.46%	9.33%	10.48%	10.48%
6	LEVEL 5 TENDAM	4.47%	8.57%	11.36%	11.36%
7	LEVEL 6 TENDAM	6.61%	6.93%	6.64%	6.64%
8	LEVEL 7 TENDAM	7.15%	6.77%	9.46%	9.46%
9	LEVEL 8 TENDAM	6.17%	6.27%	6.77%	6.77%
10	MTNL_AIRTEL	9.37%	9.07%	9.03%	9.03%
11	BPL_MTNL	1.11%	0.92%	2.02%	2.02%
12	MTNL_RELIANCE	6.91%	9.71%	9.71%	9.71%
13	MTNL_TATA	6.06%	9.87%	10.64%	10.64%
	MSC - 3 (Cuffe Parade)				
1	TAX_FOUNTAIN	4.72%	7.47%	8.49%	8.49%
2	TAX_PRABHADEVI	6.43%	6.32%	6.68%	6.68%
3	LEVEL 2 TENDAM	1.96%	1.70%	1.42%	1.42%
4	LEVEL3 TENDAM	5.49%	5.98%	5.91%	5.91%
5	LEVEL 4TENDAM	6.14%	7.18%	7.50%	7.50%
6	LEVEL 5 TENDAM	6.89%	7.38%	10.38%	10.38%
7	LEVEL 6 TENDAM	6.75%	6.67%	9.51%	9.51%
8	LEVEL 7 TENDAM	6.72%	7.55%	6.82%	6.82%
9	LEVEL 8 TENDAM	8.01%	9.64%	8.14%	8.14%
10	MTNL_AIRTEL	7.75%	7.93%	8.53%	8.53%
11	MTNL_BPL	7.17%	8.86%	10.05%	10.05%
12	MTNL_HUTCH ORANGE	8.94%	10.55%	10.97%	10.97%

Comparative Statement of Parameters showing the congestion of the network of M/s BSNL for the months of May-July, 2005

Sr. No.	Service area and POI	Parameters to be Monitored	
		1	2
		SDCCH Congestion (%) <.5%	TCH Congestion (%) <2%
1	Andhara Pradesh		
May		1.10%	10.60%
June		0.50%	9.20%
July		0.30%	7.30%
2	Assam		
May		4.60%	13.00%
June		4.20%	18.50%
July		4.60%	5.00%
3	Bihar		
May		3.10%	9.80%
June		3.90%	12.40%
July		3.50%	12.10%
4	Chennai		
May		0.20%	3.50%
June		0.20%	3.90%
July		0.30%	3.60%
5	Gujarat		
May		0.40%	2.00%
June		0.50%	1.80%
July		0.50%	1.60%
6	Haryana		
May		5.90%	11.60%
June		7.40%	13.70%
July		7.90%	15.10%
7	Himachal Pradesh		
May		5.20%	9.20%
June		4.80%	7.50%
July		4.60%	7.30%
8	J & K		
May		3.50%	9.20%
June		1.80%	6.90%
July		1.90%	5.60%
9	Kerala		
May		1.50%	1.90%
June		0.30%	7.70%
July		0.30%	7.10%
10	Karnataka		

May		0.70%	3.30%
June		0.80%	4.90%
July		0.60%	4.50%
11	Kolkata		
May		0.20%	1.10%
June		0.10%	1.90%
July		0.40%	1.70%
12	Maharashtra		
May		4.10%	2.70%
June		0.50%	1.90%
July		6.10%	4.90%
13	Madhya Pradesh		
May		3.60%	9.30%
June		2.90%	10.50%
July		2.20%	9.00%
14	NE		
May		0.50%	1.80%
June		0.50%	1.50%
July		0.50%	1.40%
15	Orissa		
May		3.70%	11.30%
June		3.90%	10.50%
July		4.30%	15.30%
16	Punjab		
May		0.50%	1.60%
June		0.50%	1.30%
July		0.50%	1.60%
17	Rajasthan		
May		1.80%	11.40%
June		1.50%	10.10%
July		1.20%	11.00%
18	Tamilnadu		
May		1.20%	9.10%
June		1.20%	9.30%
July		1.20%	9.30%
19	UP - E		
May		5.00%	2.00%
June		5.00%	2.00%
July		5.00%	3.00%
20	UP - W		
May		8.00%	15.00%
June		4.80%	14.90%
July		7.20%	14.00%
21	West Bengal		
May		0.50%	1.10%
June		0.40%	1.60%
July		0.60%	1.50%

