Operator Assisted Drive Test Report

For

Nanded

16th to 19th Jan 2024
Nanded – Latur (NH/SH) - 135 Kms
(16th Jan 2024)
Nanded & Surrounding Area - 300 Kms
(17th to 19th Jan 2024)

TRAI RO, Bengaluru

Key Performance Indicators:

- All TSPs have met the 2% QOS benchmark of Drop Call Rate.
- All TSPs have met the 3% QOS benchmark of Call Block Rate except BSNL 3G.
- All 2G/3G/4G TSPs have met the ≥95 % benchmark of Rx Quality except BSNL 3G, JIO 4G and VIL 4G.
- All 2G/3G/4G TSPs have met the ≥95 % benchmark of Mobility HOSR.

The Operator Assisted Drive Test has been carried out by the Regional Office, Bangalore with the help of Service Providers from **16th to 19th Jan 2024**. The drive test covered the route of **435 Kms** including NH/SH of **135 Kms** & **6** hotspots. Approximately **450** calls were made for each of the **8** networks: three 2G networks, one 3G network, and four LTE networks covering four TSPs (BSNL 4G only at Static locations).

| Overview | Voice Summary | Data Summary |

Overview

Regional Office, TRAI Bengaluru conducted Operator Assisted Drive Test from **16th to 19th Jan 2024** covering various locations in **Nanded & Surrounding Region**. The performance of Airtel, BSNL, Vodafone Idea, and Jio were monitored across various technologies (2G, 3G, and 4G/4G). The test results obtained from these drive tests were utilized to assess the network quality for Voice and Data services in terms of

Voice: Coverage, Quality, Hand Over Success Rate, Call Setup Success Rate, Drop Call Rate and Block Call Rate.

Data: Download and Upload Throughputs, Web Browsing Delay and Latency

Drive Test Details:

Voice Tests: Calls were made for 90 sec duration with a wait time of 10 sec between calls in all technologies. The drive test covered a drive route of approximately **435 KMs** including **NH/SH** of **135 Kms** over a period of 4 days from **16th to 19th Jan 2024**. Approximately 450 calls were made for each of the 8 networks: three 2G (Lock Mode) networks, one 3G (Dual mode) network, and four 4G networks covering 4 unique TSPs (BSNL 4G only at Static locations).

Data Tests: Dynamic data test (Test Data on Move) was conducted for **435 KMs** including **NH/SH** of **135 Kms** over a period of 4 days for download throughput for 3G & 4G technology. Data Tests were performed at 6 static locations; three 2G (Lock mode) networks, one 3G (Dual mode) network, and four 4G (Free mode) networks covering 4 unique TSPs were tested. **All the data through put figure mentioned in the report are based on the average value.**

* For Voice and Data KPI's, 2G measurement is done with UE locked on 2G, 3G measurement is done with UE in Dual mode (2G & 3G) and 4G measurement is done with UE in Free Mode.
* 3G KPI's which are calculated from UE in Dual Mode (2G & 3G) includes samples and events of 2G.
* 4G KPI's which are calculated from the UE in Free Mode included samples and events of 2G & 3G.

Service	Specifications
Download	2G (Locked) - 500KB, 3G (Dual) - 20 MB, 4G (Free) - 40 MB
Upload	2G (Locked) - 100KB, 3G (Dual) - 5 MB, 4G (Free) - 10 MB
Web Browsing	3 links of e/m commerce website www.amazon.in, www.flipkart.com and PayTm
Latency	32 Bytes on www.google.com
Video Streaming	130 secs clip

Overview

Voice & Dynamic Data Test (Data Test on Move) Drive Route
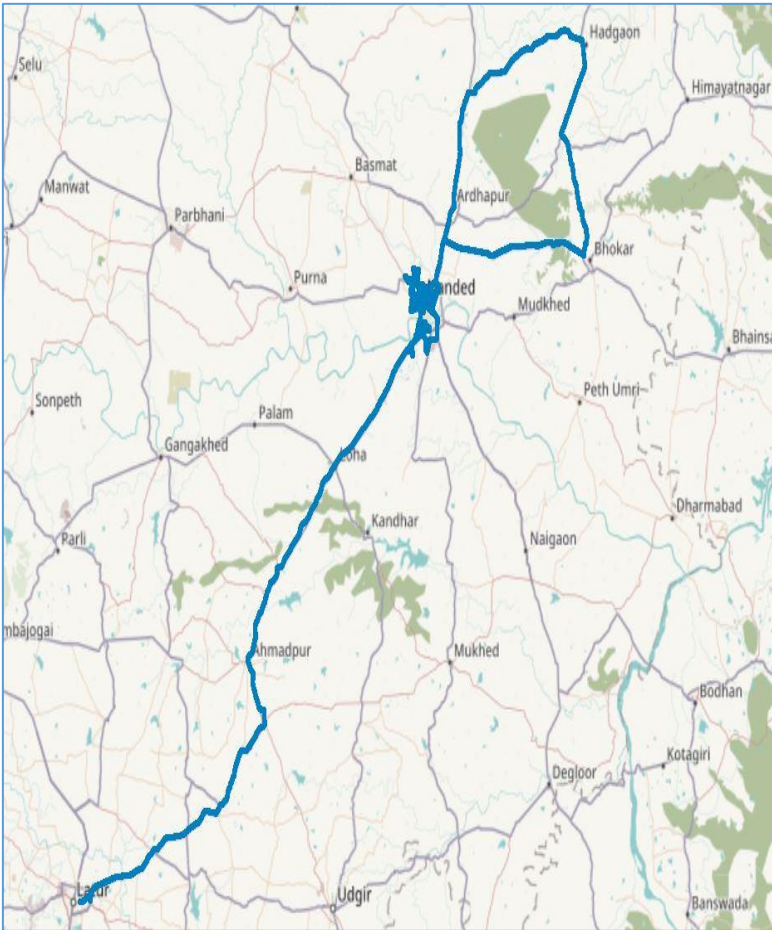
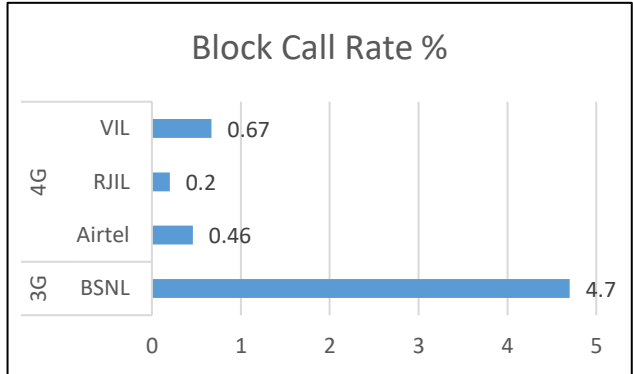| Areas covered	
NANDED	TAMSA
MAHADEV P -GAON	SHIVPURI
DABHAD	BORGAON
ARDHAPUR	BHOKAR
WARANGA PHATA	BHOSHI
DONGARGADA	BARAD
BARAD SHEVLA	BHOKAR PHATA
PALSA	SURYANAGAR
HADGAON	

Data Service Test- Static Locations

1. R.T.O. Office
2. Govt Medical College
3. Collector Office
4. Nanded Railway Station
5. Nanded Bus Stand
6. MGM College

Voice Calls

QoS compliance of the TSPs for Voice across technologies 2G/3G/4G-4G:

Drop Call Rate (%)

Drop Call Rate % (2G)
- VIL: 0.47
- BSNL: 0.6
- Airtel: 0.24

Drop Call Rate (%) (3G/4G)
- VIL (4G): 0.67
- RJIL (4G): 0
- Airtel (4G): 0.23
- BSNL (3G): 1.6

Block Call Rate (%)

Block Call Rate % (2G)
- VIL: 1.62
- BSNL: 2.5
- Airtel: 0.7

Block Call Rate % (3G/4G)
- VIL (4G): 0.67
- RJIL (4G): 0.2
- Airtel (4G): 0.46
- BSNL (3G): 4.7
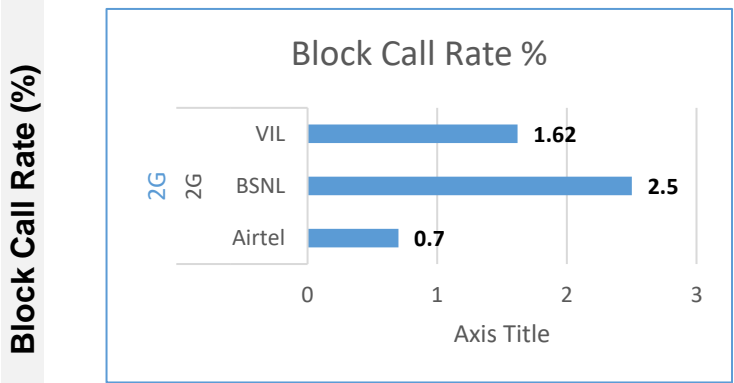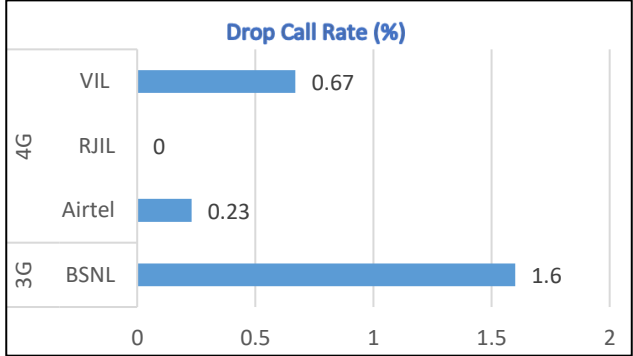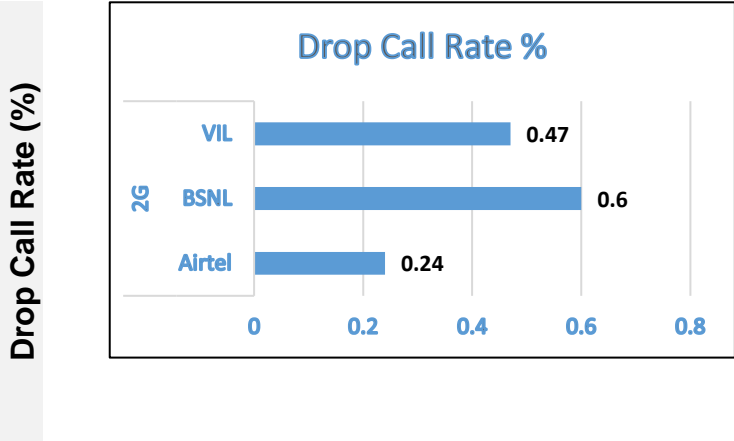
KPIs	2G			3G	4G		
	Airtel	**BSNL**	**VIL**	**BSNL**	**Airtel**	**RJIL**	**VIL**
Drop Call Rate %	0.24	0.6	0.47	1.6	0.23	0	0.67
Block Call Rate %	0.7	2.5	1.62	4.7	0.46	0.2	0.67

a) All TSPs have met the 2% QOS benchmark of Drop Call Rate.
b) All TSPs have met the 3% QOS benchmark of Call Block except BSNL 3G.

Voice Calls

Coverage

a) Percentage of coverage samples for 2G ≥ -85 dBm.

TSPs	2G		
	Airtel	**BSNL**	**VIL**
Coverage%	70.40	60.70	73.29

b) Percentage of coverage samples for 3G ≥ -90 dBm & LTE ≥ -110 dBm.

TSPs	3G	4G		
	BSNL	**Airtel**	**JIO**	**VIL**
Coverage %	55.04	97.10	96.20	91.53

c) Percentage of time spent on 3G/4G network

TSPs	3G	4G			
	BSNL	**Airtel**	**BSNL**	**JIO**	**VIL**
Time Spent on 3G/4G%	7.89	100	20.5	100	98.75

Summary

Voice Call	2G		
	Airtel	**BSNL**	**VIL**
Call Attempt	429	513	433
Blocked Call Rate (%)	0.7	2.5	1.62
CSSR% (Accessibility)	99.3	97.5	98.38
Drop Call Rate (%)	0.24	0.6	0.47
Rx Quality (%)	95.61	97	95.2
Mobility HOSR (%)	99.48	95.76	99.52

Voice Call	3G/4G			
	BSNL 3G	**Airtel 4G**	**JIO 4G**	**VIL 4G**
Call Attempt	527	431	498	450
Blocked Call Rate (%)	4.7	0.46	0.2	0.67
CSSR% (Accessibility)	95.3	99.54	99.8	99.33
Drop Call Rate (%)	1.6	0.23	0	0.67
Rx Quality (%)	91.81	97.48	88.5	84.54
Mobility HOSR (%)	97.84	100	99.1	99.63

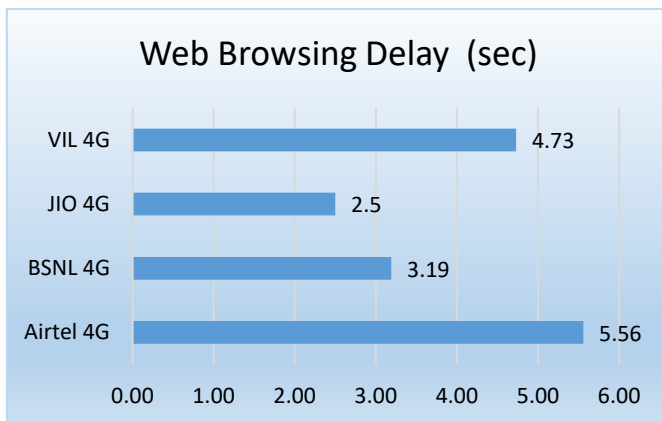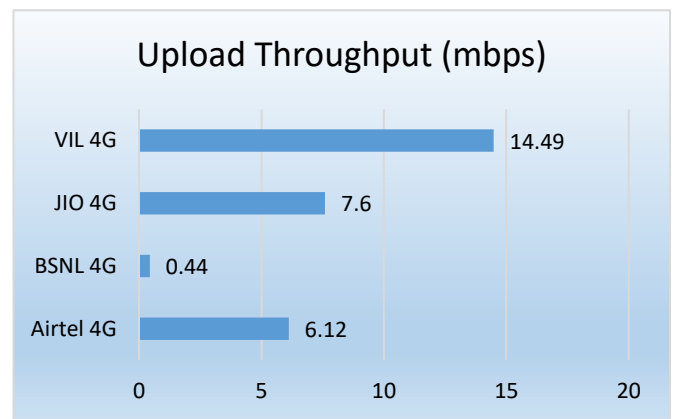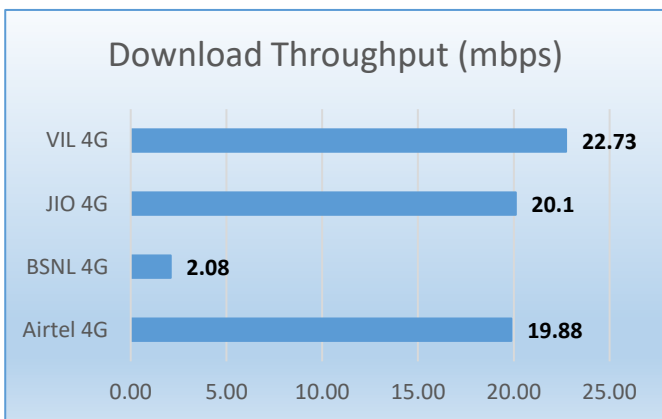# Data Services Static

Data was tested at 6 locations. The following services were tested: Data Download/Upload, Latency (www.google.com), and Web browsing (Flipkart, Amazon, Paytm)

Data Download, Upload Performance (Mbps), Web Browsing delay, Video Streaming and Latency
3G/4G

3G/4G/ Network:

Download Throughput (mbps)

Network	Value
VIL 4G	22.73
JIO 4G	20.1
BSNL 4G	2.08
Airtel 4G	19.88

Upload Throughput (mbps)

Network	Value
VIL 4G	14.49
JIO 4G	7.6
BSNL 4G	0.44
Airtel 4G	6.12

Web Browsing Delay (sec)

Network	Value
VIL 4G	4.73
JIO 4G	2.5
BSNL 4G	3.19
Airtel 4G	5.56

Video Streaming Delay (sec)

Network	Value
VIL 4G	1.18
JIO 4G	0.2
BSNL 4G	0
Airtel 4G	0.55

Latency (msec)

Network	Value
VIL 4G	72.5
JIO 4G	47
BSNL 4G	117.3
Airtel 4G	34.5
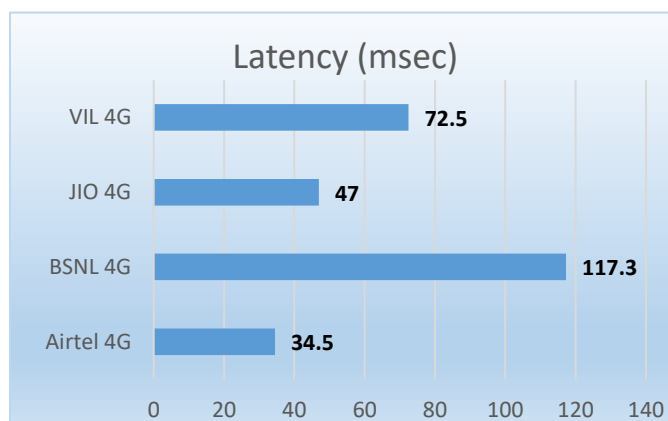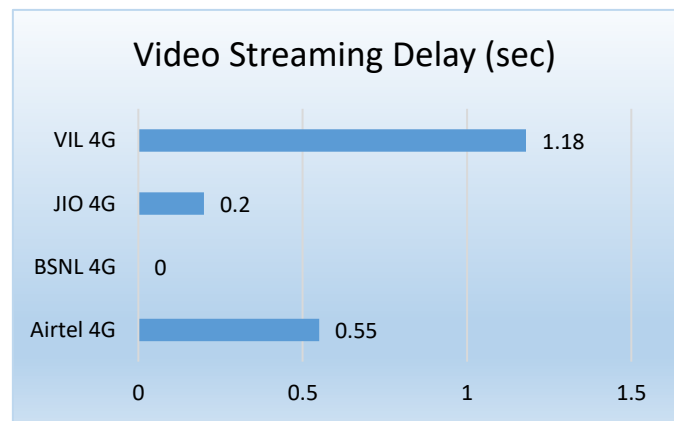
Summary

Data Services Static	2G	
	Airtel	VIL
Download Throughput (kbps)	13.454	96.53
Upload Throughput (kbps)	11.4073	60.53
Web Browsing Delay (sec)	31.672	32.75
Latency (msec)	240	213.73

Data Services Static	Airtel 4G	BSNL 4G	JIO 4G	VIL 4G
Download Throughput (mbps)	19.88	2.08	20.10	22.73
Upload Throughput (mbps)	6.12	0.44	7.60	14.49
Web Browsing Delay (sec)	5.56	3.19	2.50	4.73
Video Streaming Delay (sec)	0.55	-	0.20	1.18
Latency (msec)	34.50	117.30	47.00	72.50

Data Services Dynamic (Data Test on Move)	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (mbps)	1.65	16.43	10.7	7.39
Upload Throughput (mbps)	0.13	5.76	4.3	4.55

Summary

Data Services Static – RTO Office	2G	
	Airtel	VIL
Download Throughput (kbps)	12.6	45.66
Upload Throughput (kbps)	9.13	69.07
Web Browsing Delay (sec)	29.97	28.81
Latency (ms)	236.4	217

Data Services Static – RTO Office	4G			
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	3.51	10.76	37.62	29.22
Upload Throughput (Mbps)	1.116	5.37	4.64	29.22
Web Browsing Delay (sec)	3.66	4.94	2.3	4.3
Video Streaming Delay (sec)	0	0.35	0.18	1.08
Latency (ms)	122	35.2	44.6	91.6

Data Services Static – Govt Medical College	2G	
	Airtel	VIL
Download Throughput (kbps)	12.33	45.62
Upload Throughput (kbps)	10.43	56.326
Web Browsing Delay (sec)	31.26	45.7754
Latency (msec)	243	214

Data Services Static - Govt Medical College	4G			
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	1.75	23.74	15.96	11.27
Upload Throughput (Mbps)	0.8	7.41	8.56	15.374
Web Browsing Delay (sec)	1.5	6.11	2.22	4.5816
Video Streaming Delay (sec)	0	0.35	0.18	1.0244
Latency (ms)	79.4	36.6	48	67.4

Summary

Data Services Static – Collector Office	2G	
	Airtel	VIL
Download Throughput (kbps)	14.47	63.29
Upload Throughput (kbps)	13.06	51.112
Web Browsing Delay (sec)	31.9	26.841
Latency (ms)	240	212

Data Services Static – Collector Office	4G			
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	1.94	16.3	20.82	19.33
Upload Throughput (Mbps)	0.37	5.68	6.56	14.86
Web Browsing Delay (sec)	3.71	5.28	2.04	4.74
Video Streaming Delay (sec)	0.00	0.37	0.17	1.28
Latency (ms)	133.40	31	42	78

Data Services Static – Railway Station	2G	
	Airtel	VIL
Download Throughput (kbps)	12.66	194.84
Upload Throughput (kbps)	10.92	47.65
Web Browsing Delay (sec)	31.71	27.54
Latency (msec)	241	299

Data Services Static – Railway Station	4G			
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	0.95	19.39	12.34	6.87
Upload Throughput (Mbps)	0.22	5.97	7.86	8.53
Web Browsing Delay (sec)	4.78	5.37	2.28	5.18
Video Streaming Delay (sec)	0	0.36	0.33	1.8
Latency (ms)	123	34	53	65

Summary

Data Services Static – Bus Stand Nanded	2G	
	Airtel	VIL
Download Throughput (kbps)	12.96	171.32
Upload Throughput (kbps)	12.09	72.81
Web Browsing Delay (sec)	32.13	26.8
Latency (ms)	238	178

Data Services Static – Bus Stand Nanded	4G			
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	2.27	20.72	11.12	29.37
Upload Throughput (Mbps)	0.09	6.3	6.6	14.05
Web Browsing Delay (sec)	3.28	5.3	3.54	4.35
Video Streaming Delay (sec)	0	0.41	0.08	0.99
Latency (ms)	122	37	53	58.2

Data Services Static – MGM College of Engg	2G	
	Airtel	VIL
Download Throughput (kbps)	15.7	58.44
Upload Throughput (kbps)	12.83	66.23
Web Browsing Delay (sec)	33.07	40.73
Latency (msec)	239.4	162

Data Services Static – MGM College of Engg	4G			
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	1.76	28.37	25.4	40.24
Upload Throughput (Mbps)	0.06	6.46	11.08	4.91
Web Browsing Delay (sec)	2.2	6.35	2.5	5.23
Video Streaming Delay (sec)	0	1.46	0.16	0.89
Latency (ms)	124	34	44	75

RF Coverage relates to the geographical footprint within the system that has sufficient RF signal strength to provide for a call session. The Coverage rate is calculated on the basis of % of samples in which the Rx level ≥ -85 dBm, RSCP is ≥ -90 dBm & RSRP ≥ -110dBm. The details are as follows.

TSP	Coverage Rate %
Airtel 2G	70.40
BSNl 2G	60.70
VIL 2G	73.29
BSNL 3G	55.04
Airtel VoLTE	97.10
Jio VoLTE	96.20
VIL VoLTE	91.53

Coverage Distribution %

	Airtel 2G	BSNl 2G	VIL 2G	BSNL 3G	Airtel 4G	Jio 4G	VIL 4G
2G:[Max, >=-75] / 3G:Max, >=-70 / VoLTE: >=-80	35.52	53	47.31	9	19.38	24.2	13.44
2G:[-75, >=-85] / 3G:[-70,>=-80] / VoLTE:[-80,>=-90]	34.88	7.7	25.98	21	28.6	24.99	24.68
2G:[-85, >=-95) / 3G:[-80,>=-90] / VoLTE:[-90,>-=-110]	27.03	32	19.98	25	49.13	47.01	53.45
2G:[-95, >=-Min] / 3G:[[-90,>=Min] / VoLTE:[[-110,>=Min]	2.57	7.3	6.73	45	2.9	3.77	8.43
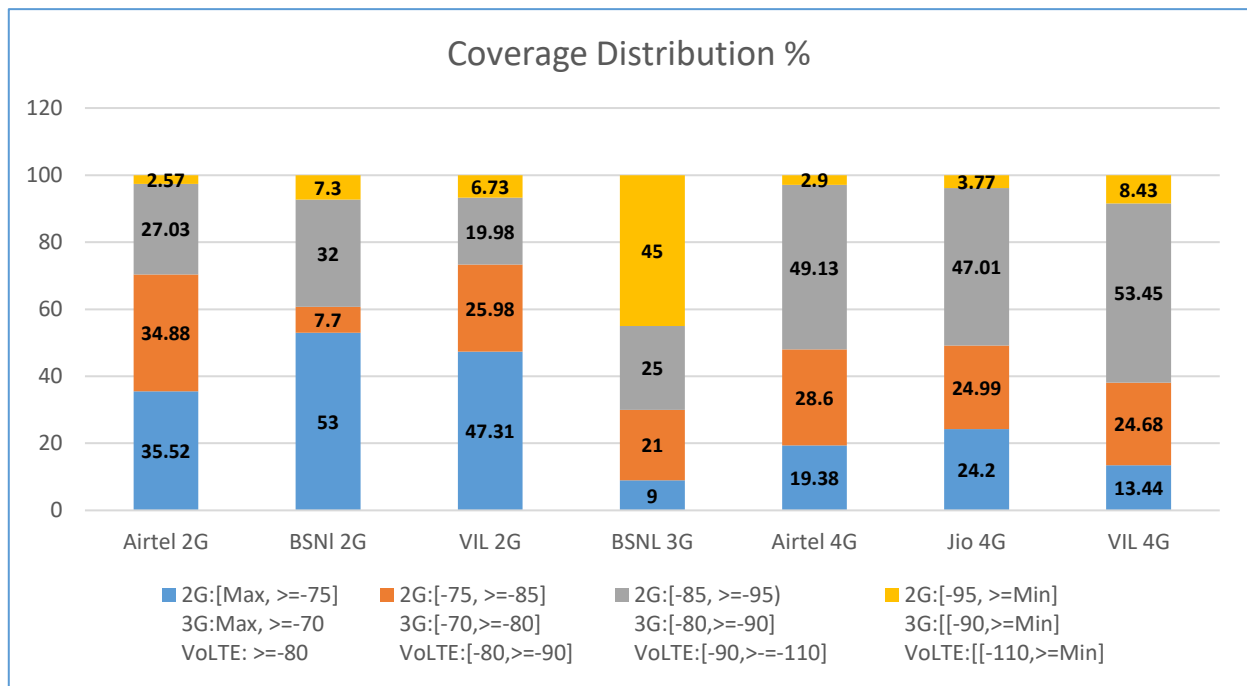
AIRTEL

Technology	Coverage Rate %
2G	70.4
4G	97.1

2G

4G
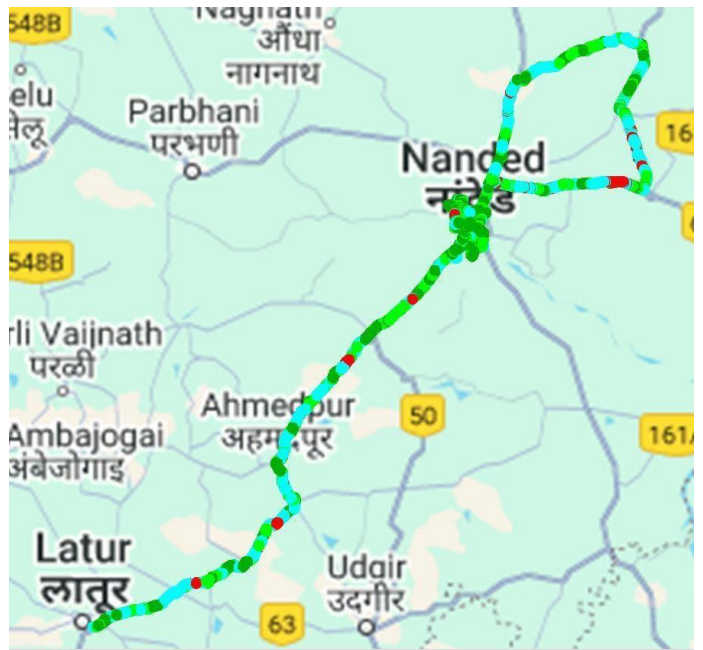
2G		
Overall RxLevel	**# Samples**	**% PDF**
[Max, >=-75]	2301697	35.52
[-75, >=-85)	2259977	34.88
[-85, >=-95)	1751271	27.03
[-95, >=Min)	166267	2.57
Total	6479212	100.00

4G/VoLTE		
Overall RSRP	**# Samples**	**% PDF**
[Max, >=-80]	1830818	19.38
[-80, >=-90)	2702150	28.60
[-90, >=-110)	4642080	49.13
[-110, >=Min)	274285	2.90
Total	9449333	100.00

BSNL

Technology	Coverage Rate %
2G	60.7
3G	55.4
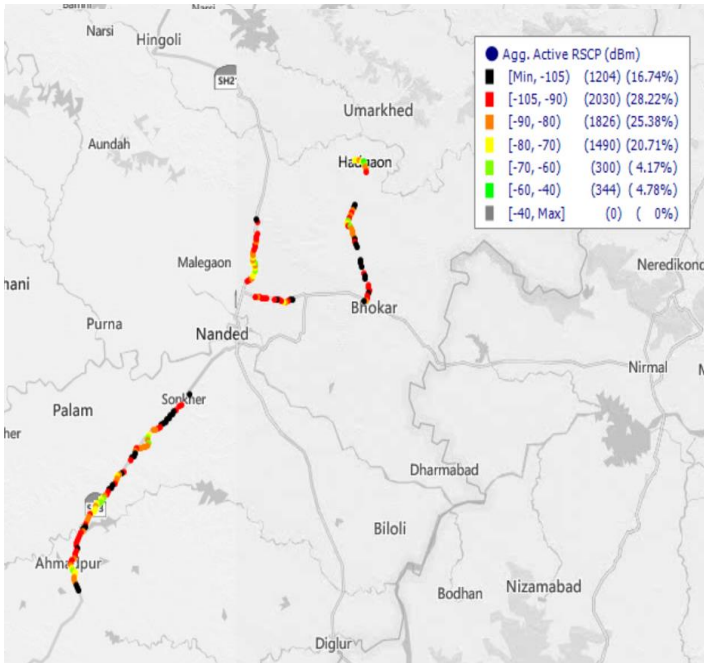
2G	**3G**
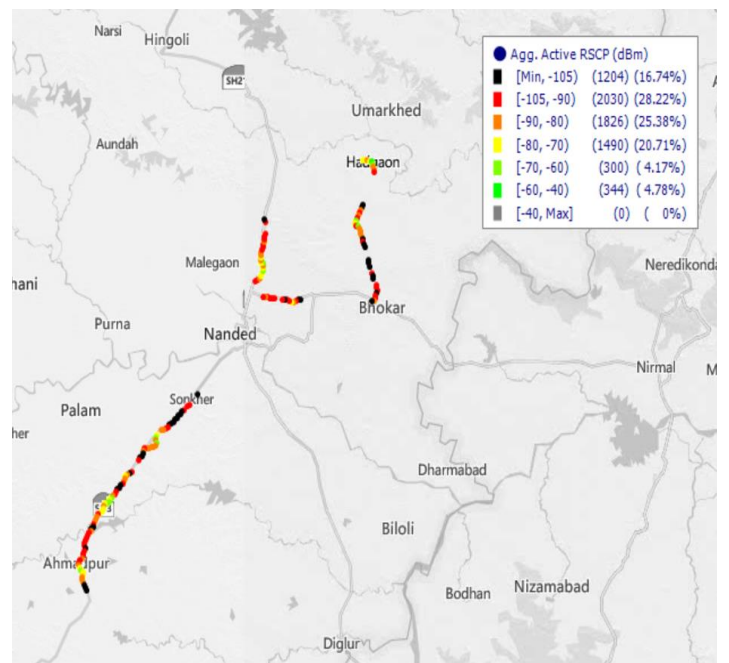
2G		
Overall RxLevel	**# Samples**	**% PDF**
[Max, >=-75]	28185	53
[-75, >=-85]	9452	7.7
[-85, >=-95]	11520	32
[-95, >=Min]	5818	7.3
Total	54975	100

3G		
Overall RSCP	**# Samples**	**% PDF**
[Max, >=-70]	644	9
[-70, >=-80]	1490	21
[-80, >=-90]	1826	25
[-90, >=Min]	3234	45
Total	7194	100

JIO

Technology	Coverage Rate %
4G	96.20
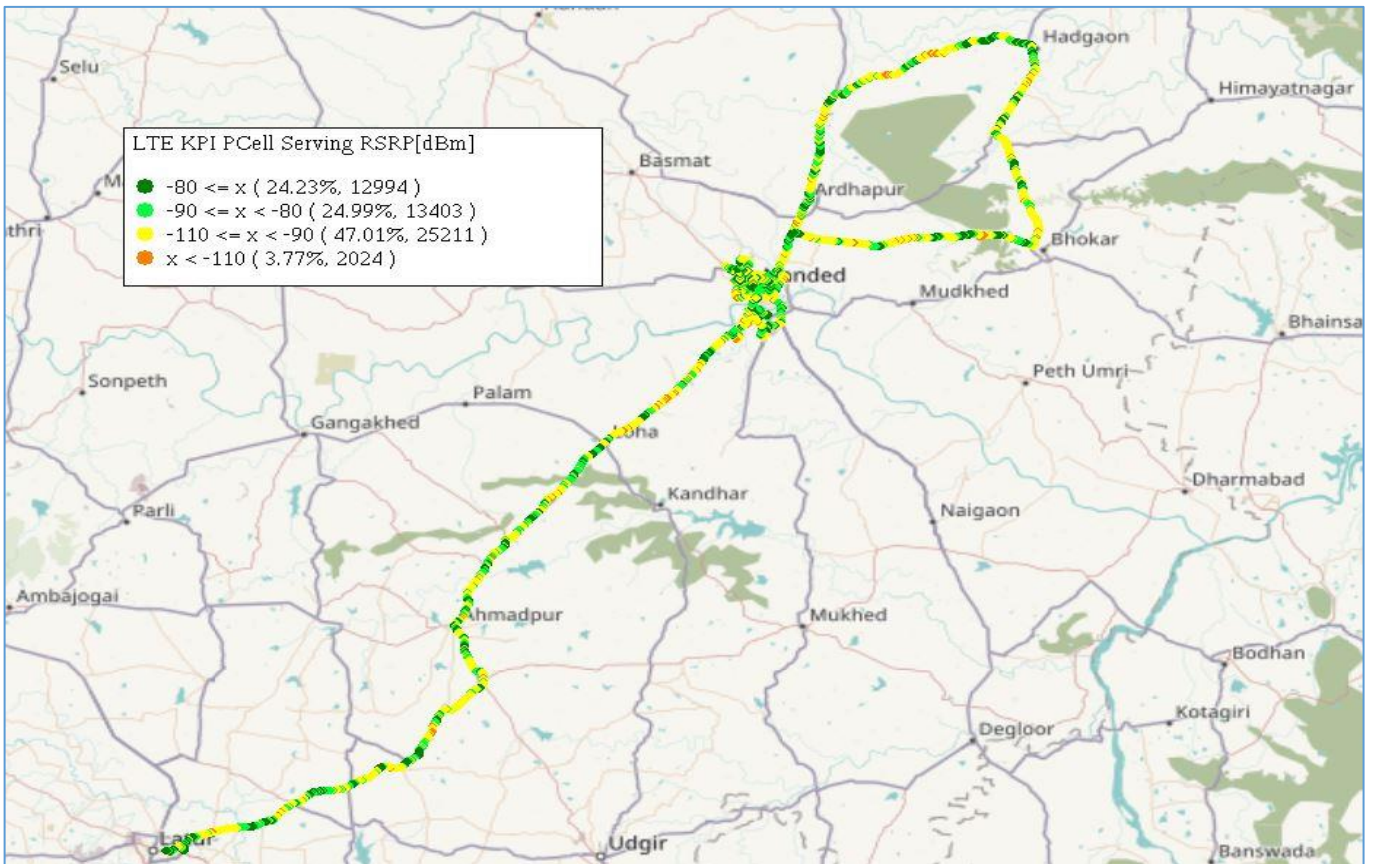
4G/VoLTE		
Overall RSRP	**# Samples**	**% PDF**
[Max, >=-80]	12,994	24.23
[-80, >=-90)	13,403	24.99
[-90, >=-110)	25,211	47.01
[-110, >=Min)	2,024	3.77
Total	**53,632**	**100**

VIL

Technology	Coverage Rate %
2G	73.29
4G	91.53

2G

RxLevSub (dBm)
- [Min, -95] [275728] [6.73%]
- [-95, -85] [818962] [19.98%]
- [-85, -75] [1064662] [25.98%]
- [-75, Max] [1939431] [47.31%]

4G

Serving cell RSRP (dBm)
- [Min, -110] [906385] [8.43%]
- [-110, -90] [5749639] [53.45%]
- [-90, -80] [2655079] [24.68%]
- [-80, Max] [1446400] [13.44%]
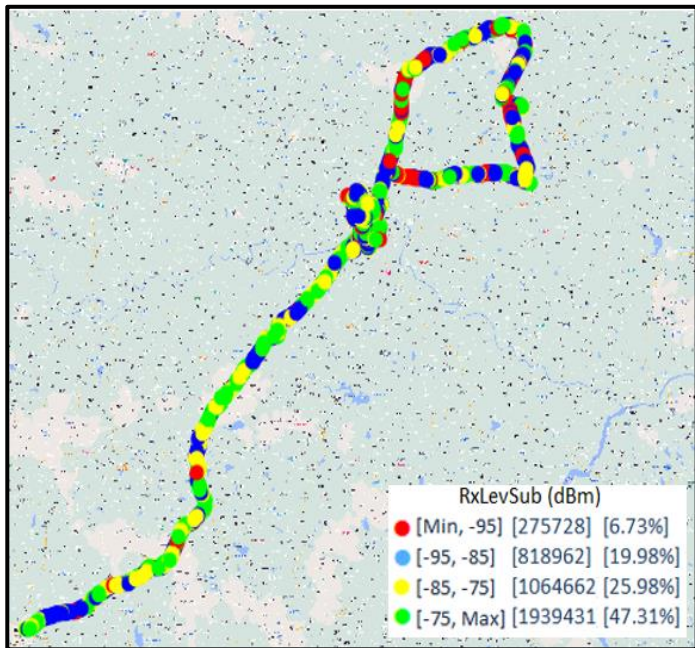
2G		
Overall RxLevel	# Samples	% PDF
[Max, >=-75]	1939431	47.31
[-75, >=-85)	1064662	25.98
[-85, >=-95)	818962	19.98
[-95, >=Min)	275728	6.73
Total	4098783	100
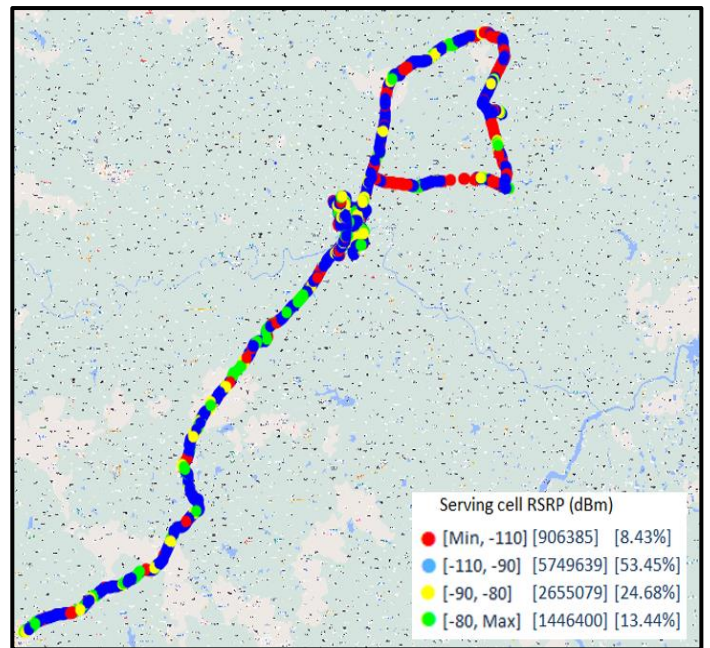
4G/VoLTE		
Overall RSRP	# Samples	% PDF
[Max, >=-80]	1446400	13.44
[-80, >=-90)	2655079	24.68
[-90, >=-110)	5749639	53.45
[-110, >=Min)	906385	8.43
Total	10757503	100

For measuring voice quality, as per the QoS norms, RxQual <=5 for GSM TSPs, EcNo >= -14 dBm for 3G TSP sand SINR >0 in case of 4G is considered to be good, where as quality beyond this benchmark is considered to be bad. The benchmark should usually be ≥ 95%.

TSP	Rx Quality %
Airtel 2G	95.61
BSNl 2G	97.00
VIL 2G	95.20
BSNL 3G	91.81
Airtel VoLTE	97.48
Jio VoLTE	88.50
VIL VoLTE	84.54

Rx Quality

Chart legend:
- Rx Quality
- Rx Quality 2G:[>5] 3G:[EcNo<-14 dBm] VoLTE:[SINR<=0]
- Rx Quality 2G:[<=5] 3G:[EcNo>=-14 dBm] VoLTE:[SINR>0]
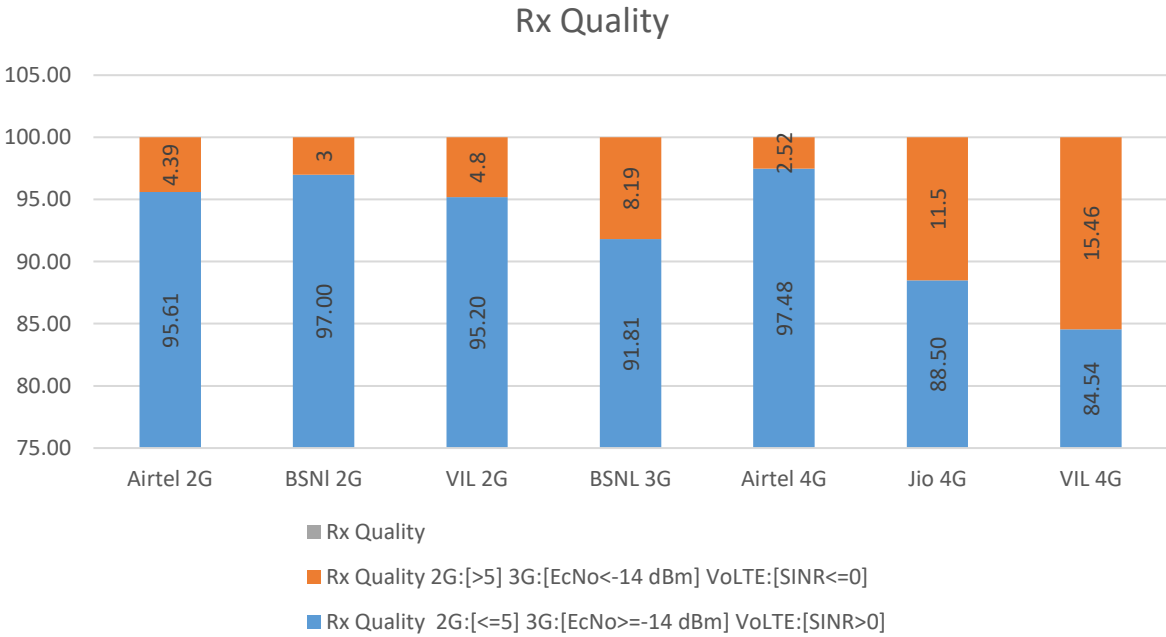
Airtel

Technology	Rx Quality %
2G	95.61
4G	97.48
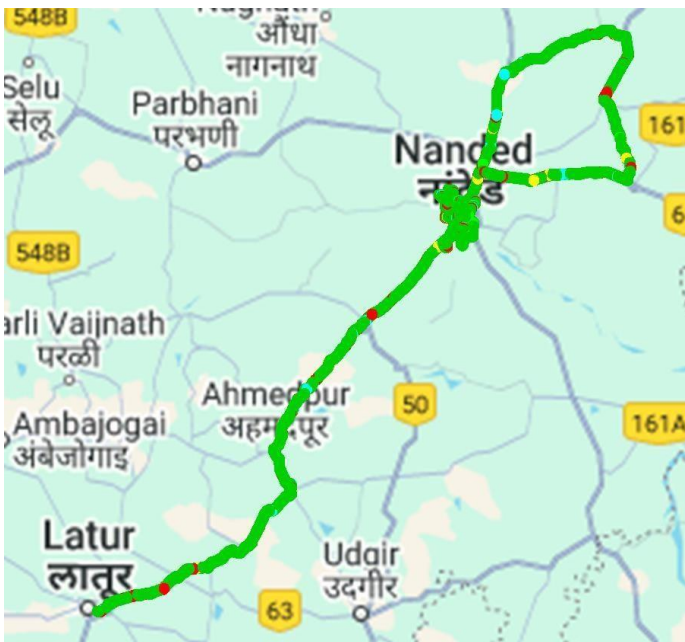
2G	4G

Overall Rx Quality	# Samples	% PDF
(Min, <=2)	5480689	84.59
(2, <=3)	150065	2.32
(3 , <=4)	204825	3.16
(4 , <=5)	359289	5.55
(5 , <=Max)	284436	4.39
Total	6479304	100

Overall SINR	# Samples	% PDF
(Min, <=0)	244209	2.52
(0, <=5)	3921931	40.49
(5, <=10)	2586511	26.70
(10, <=15)	1754350	18.11
(15, <=Max)	1179734	12.18
Total	9686735	100.00

BSNL

Technology	Rx Quality %
2G	97
3G	**91.81**

2G
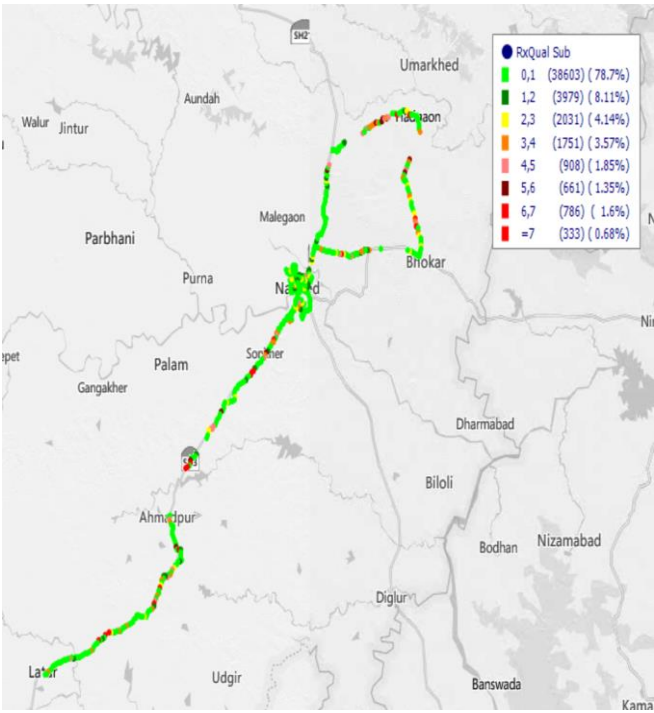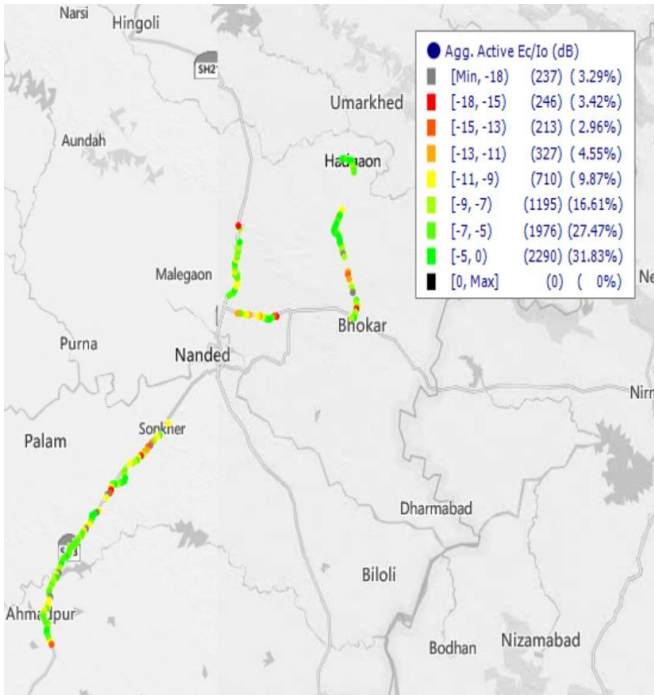
Overall Rx Quality	# Samples	% PDF
(Min, <=2)	42582	87
(2, <=3)	2031	4
(3 , <=4)	1751	4
(4 , <=5)	908	2
(5 , <=Max)	1708	3
Total	**48980**	**100**

3G

Overall EcNo	# Samples	% PDF
(Max, <=-6)	3278	45.6
(-6, <=-9)	2183	30.34
(-9, <=-11)	710	9.87
(-11, <=-14)	434	6.03
(-14, <= Min)	589	8.19
Total	**7194**	

JIO

Technology	Rx Quality (%)
4G/4G	**88.5**

LTE KPI PCell SINR[dB]

- 15 <= x (18.23%, 9254)
- 10 <= x < 15 (19.81%, 10057)
- 5 <= x < 10 (26.60%, 13499)
- 0 <= x < 5 (23.81%, 12084)
- x < 0 (11.55%, 5863)
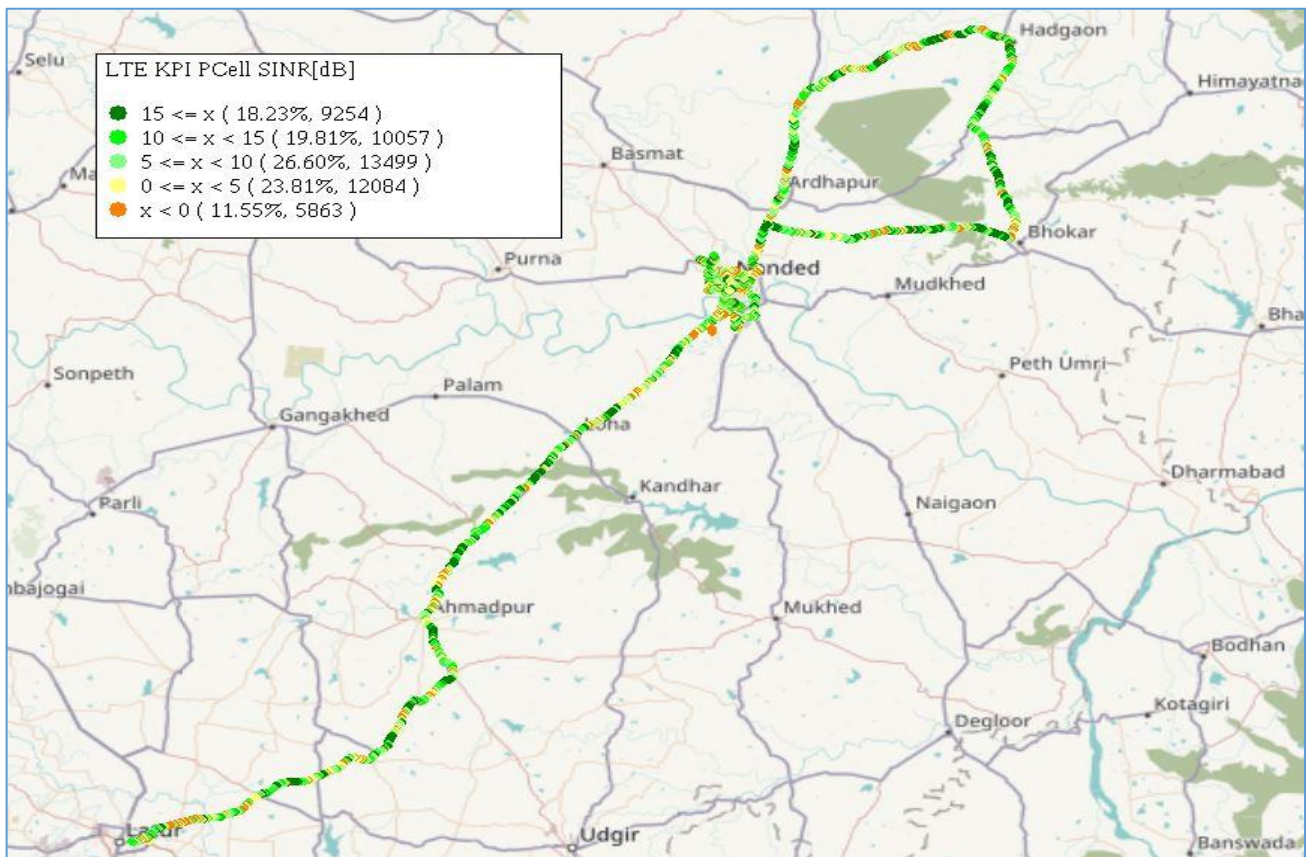
Overall SINR	# Samples	% PDF
(Min, <=0)	9,254	18.23
(0, <=5)	10,057	19.81
(5, <=10)	13,499	26.60
(10, <=15)	12,084	23.81
(15, <=Max)	5,863	11.55
Total	50,757	**100**

VIL

Technology	Rx Quality %
2G	**95.20**
4G	**84.54**

2G	**4G**

RxQual Sub
[Min, 2] [3681560] [89.83%]
[2, 3] [62798] [1.53%]
[3, 4] [80378] [1.96%]
[4, 5] [77132] [1.88%]
[5, Max] [196915] [4.80%]

Serving cell RS SINR (dB)
[Min, -6] [185379] [1.72%]
[-6, 0] [1477938] [13.74%]
[0, Max] [9094186] [84.54%]
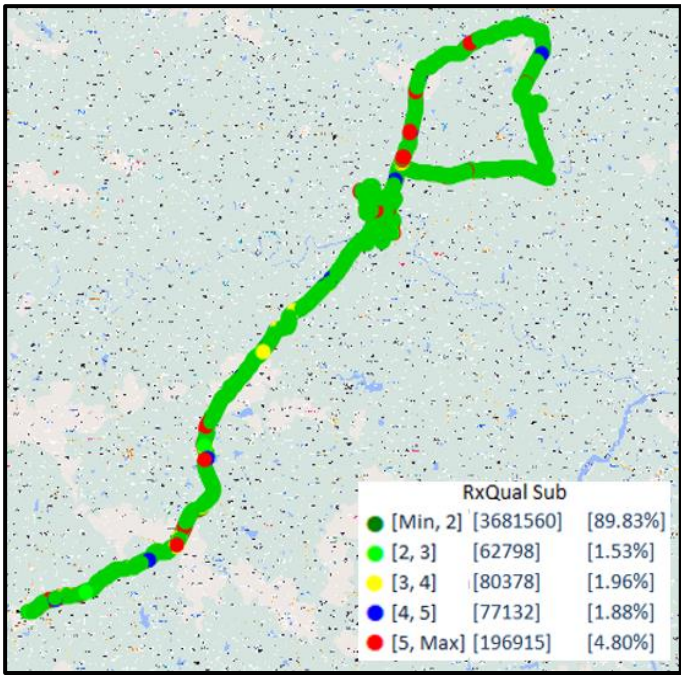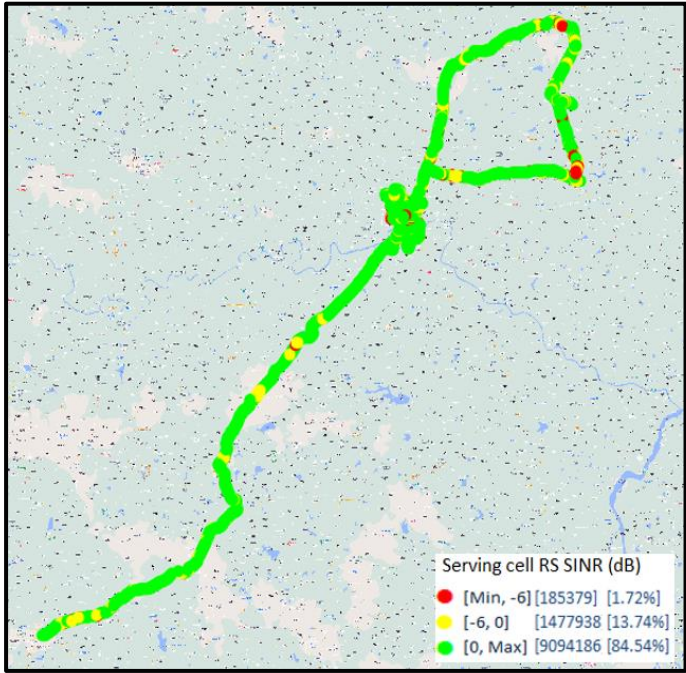
Overall Rx Quality	# Samples	% PDF		Overall SINR	# Samples	% PDF
(Min, <=2)	3681560	89.83		(Min, <=0)	1663317	15.47
(2, <=3)	62798	1.53		(0, <=5)	2489765	23.14
(3 , <=4)	80378	1.96		(5, <=10)	2390041	22.22
(4 , <=5)	77132	1.88		(10, <=15)	1805617	16.78
(5 , <=Max)	196915	4.80		(15, <=Max)	2408763	22.39
Total	4098783	100		**Total**	10757503	100

TSP	Time Spent on 3G/4G %
BSNL 3G	7.89
Airtel VoLTE	100
BSNL 4G	20.05
Jio VoLTE	100
VIL VoLTE	98.75

Percentage of time spent on 3G/4G/4G
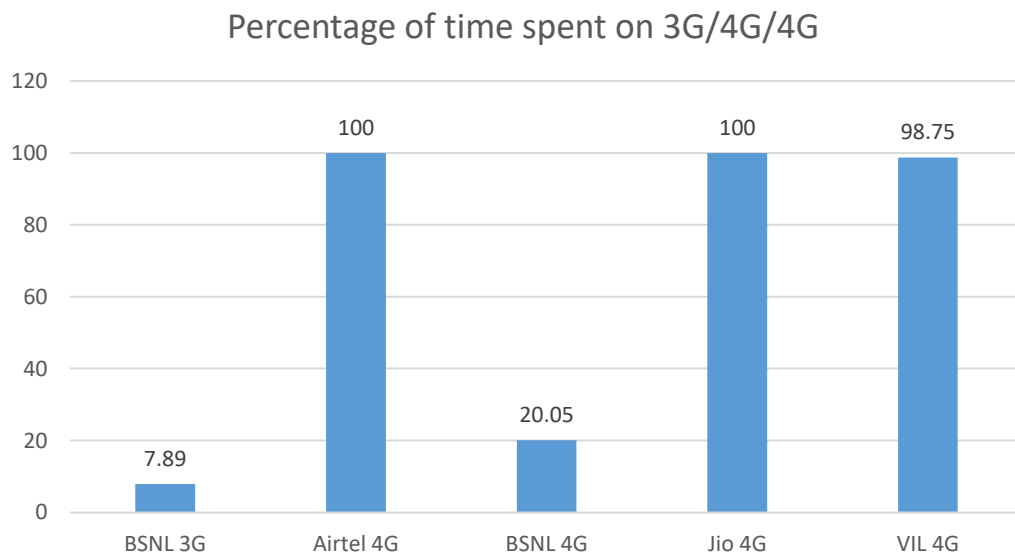
Airtel

Technology	Time Spent %
4G	100
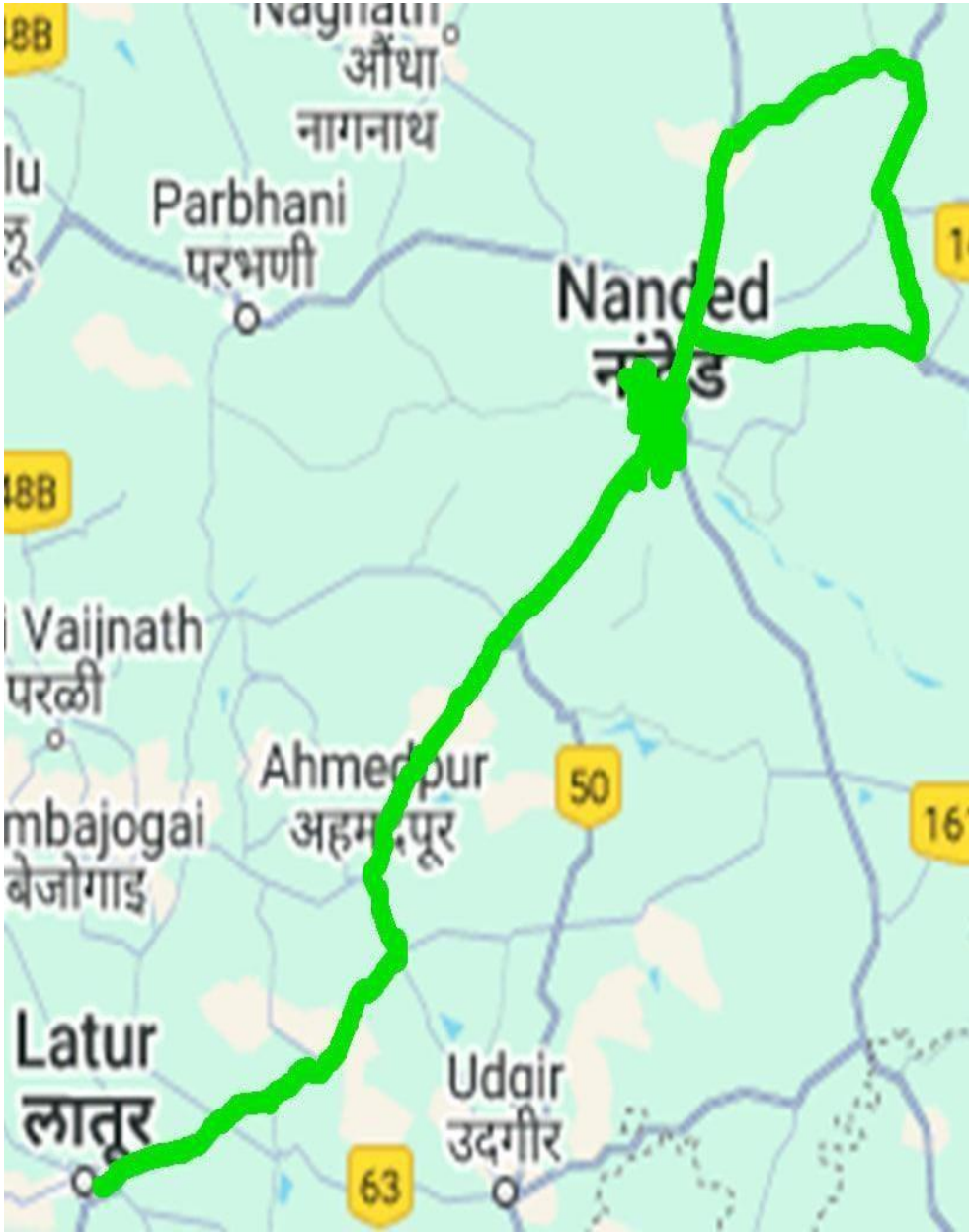
BSNL

Technology	Time Spent %
3G	7.89
4G	20.05

Technology Plot of complete SSA (4G)
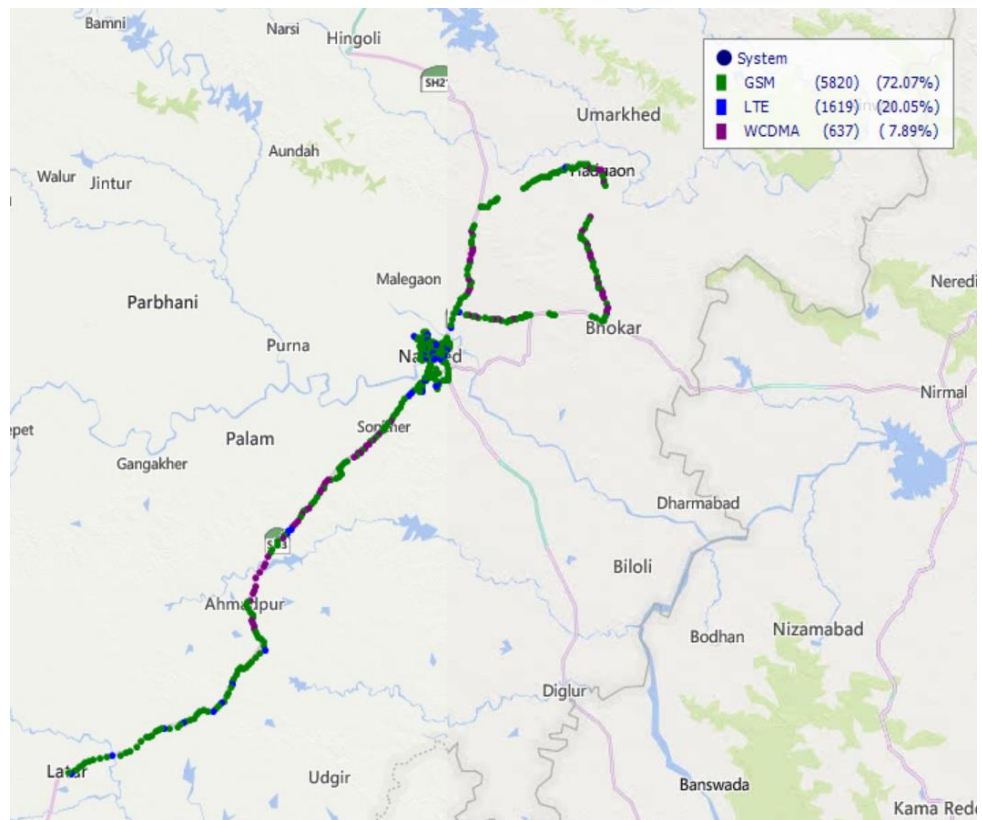
JIO

Technology	Time Spent %
4G	100
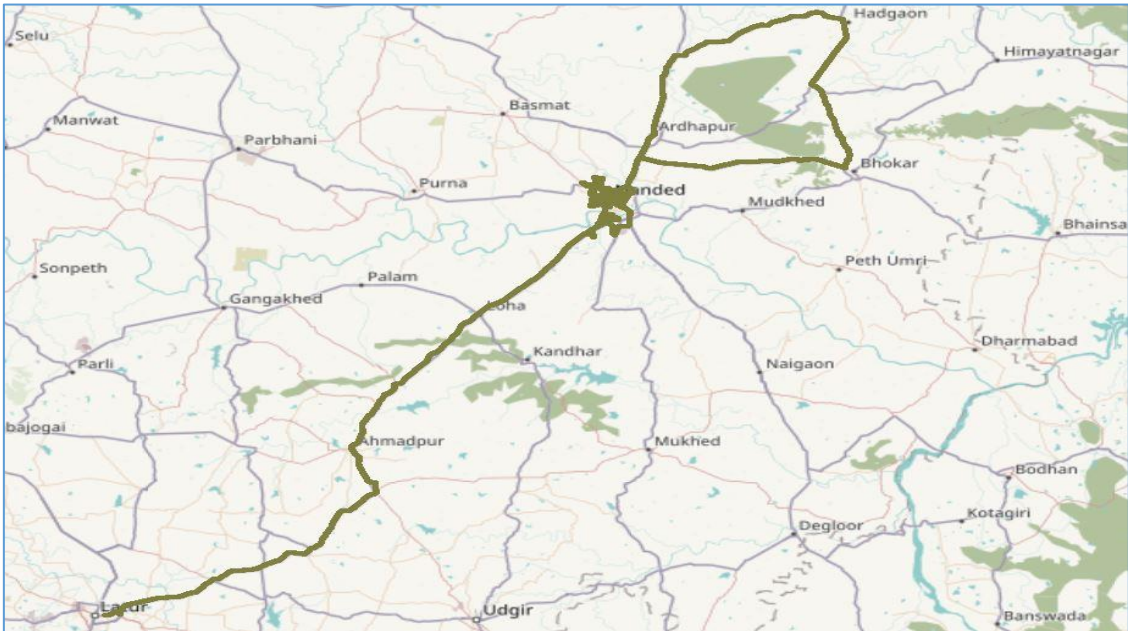
VIL

Technology	Time Spent
4G	98.75
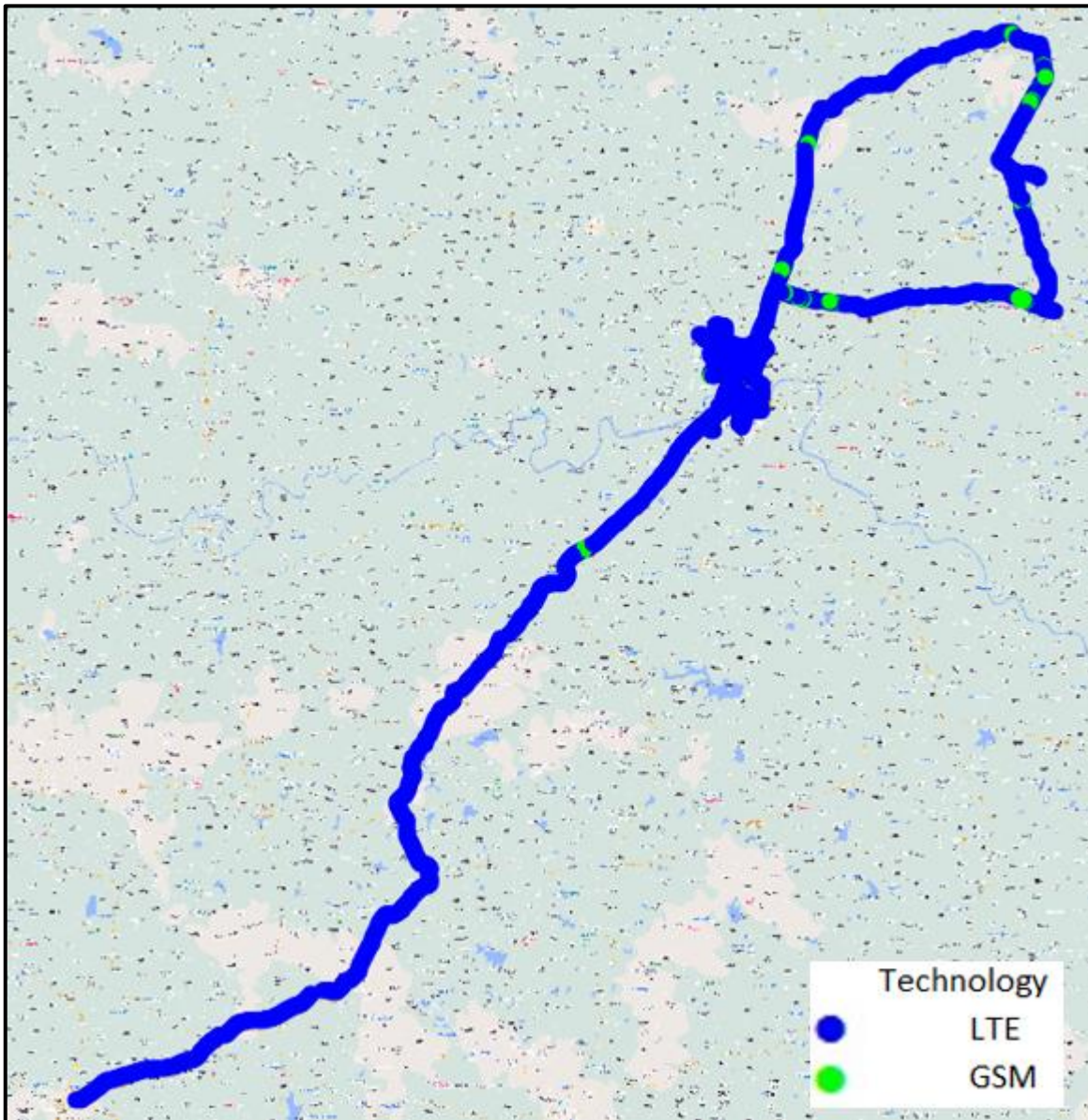
Airtel
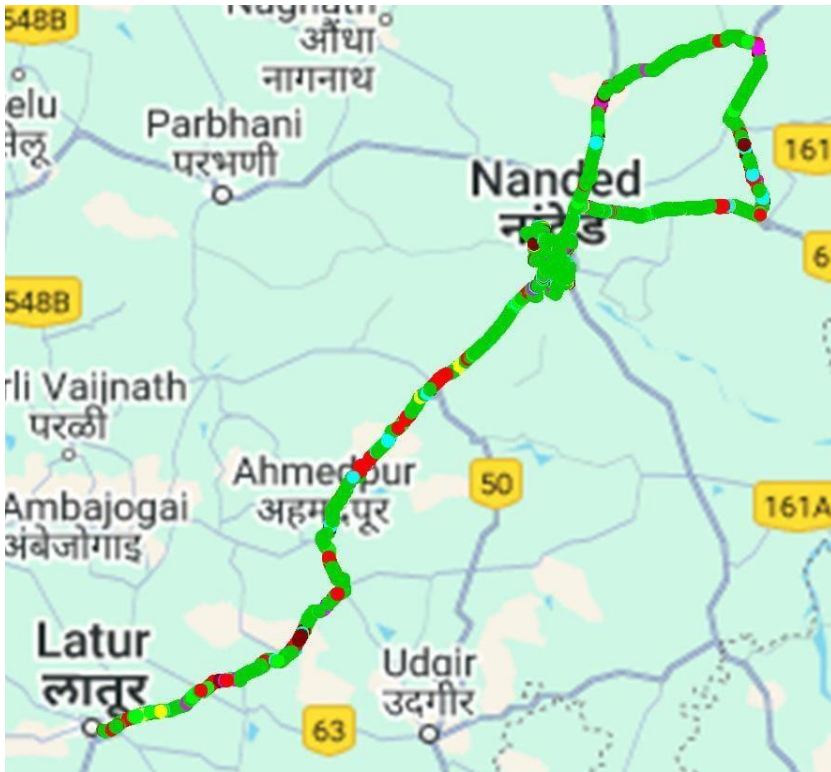
DL throughput	No. of Samples	%
0 to 1 Mbps	7898790	66.96
1 to 2 Mbps	859193	7.28
2 to 3 Mbps	827125	7.01
3 to 4 Mbps	178495	1.51
4 to 8 Mbps	1280061	10.85
8 to 12 Mbps	175117	1.48
>12 Mbps	577585	4.90
Total	11796366	100
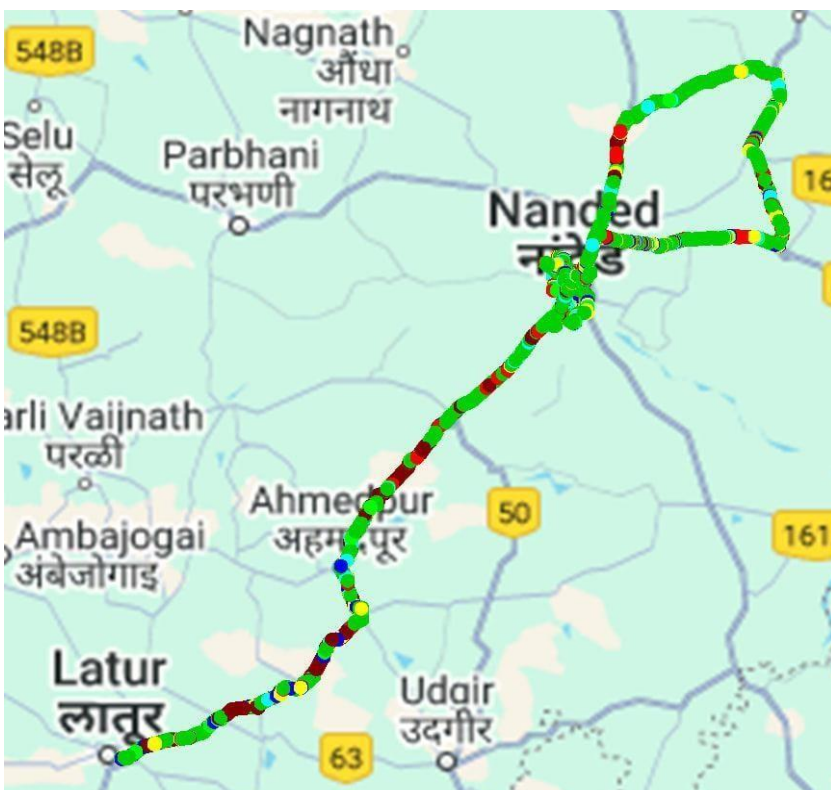
UL throughput	No. of samples	%
0 to 256 Kbps	4410100	54.78
250 to 512 Kbps	513276	6.38
512 Kbps to 1 Mbps	600154	7.45
1 to 2 Mbps	777579	9.66
2 to 3 Mbps	396366	4.92
3 to 4 Mbps	848767	10.54
>4 Mbps	504833	6.27
Total	8051075	100

BSNL
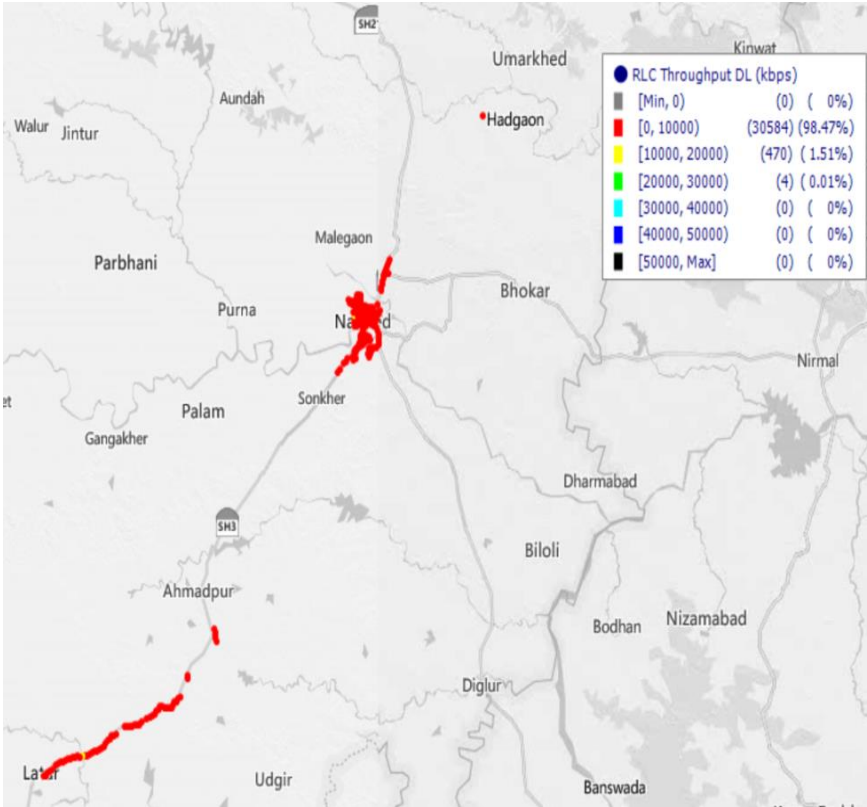
DL throughput	No. of Samples	%
0 to 1 Mbps	10500	34
1 to 2 Mbps	4500	14
2 to 3 Mbps	1520	5
3 to 4 Mbps	9460	30
4 to 8 Mbps	4604	15
8 to 12 Mbps	320	1
>12 Mbps	150	0
Total	31054	100
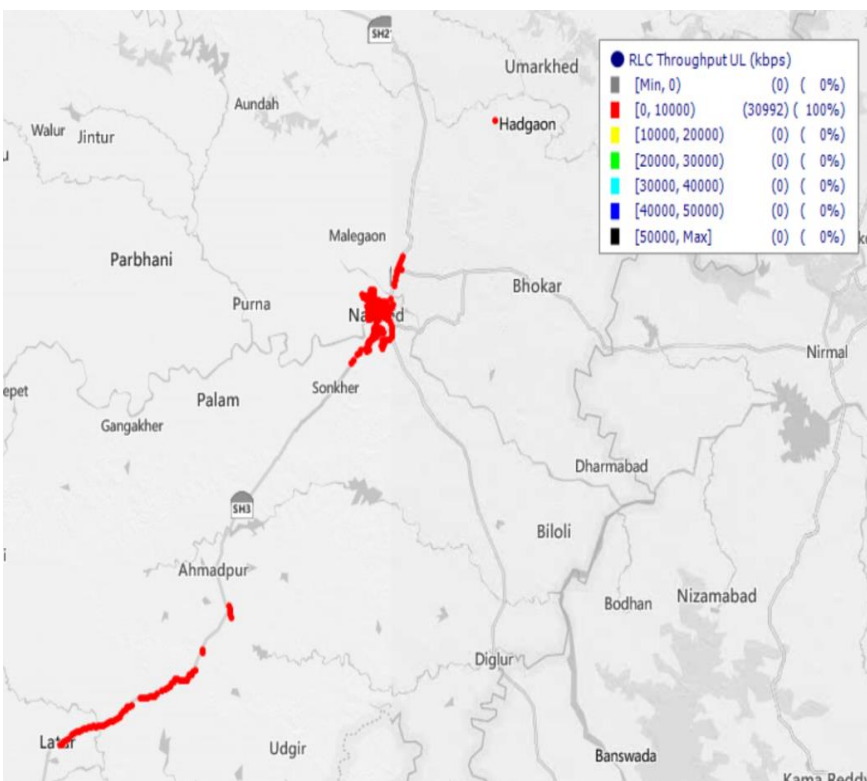
UL throughput	No. of Samples	%
0 to 1 Mbps	12560	41
1 to 2 Mbps	6420	21
2 to 3 Mbps	8420	27
3 to 4 Mbps	1180	4
4 to 8 Mbps	1272	4
8 to 12 Mbps	650	2
>12 Mbps	490	2
Total	30992	100

JIO
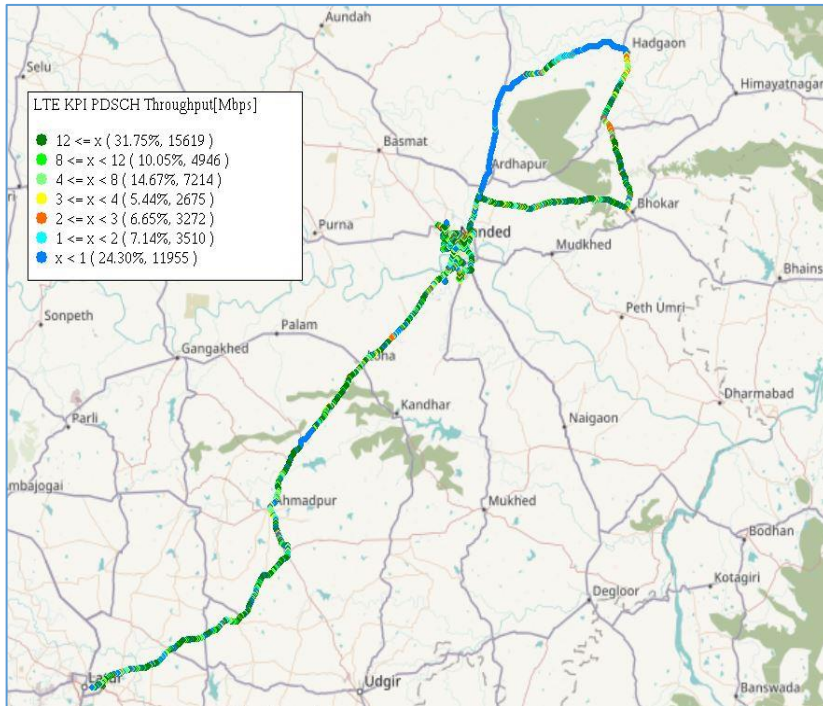
DL throughput	No. of Samples	%
0 to 1 Mbps	15,619	31.8
1 to 2 Mbps	4,946	10.05
2 to 3 Mbps	7,214	14.67
3 to 4 Mbps	2,675	5.44
4 to 8 Mbps	3,272	6.65
8 to 12 Mbps	3,510	7.14
>12 Mbps	11,955	24.30
Total	49,191	100
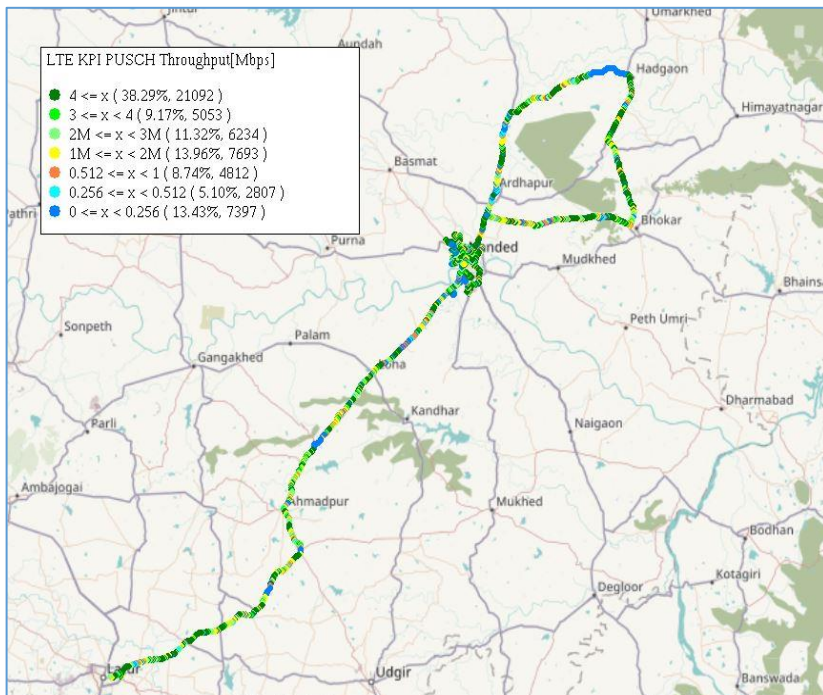
UL throughput	No. of samples	%
0 to 256 kbps Mbps	21,092	38.3
256 to 512 kbps	5,053	9.17
512 Kbps to 1 Mbps	6,234	11.32
1 to 2 Mbps	7,693	13.96
2 to 3 Mbps	4,812	8.74
3 to 4 Mbps	2,807	5.10
>4Mbps	7,397	13.43
Total	55,088	100

VIL
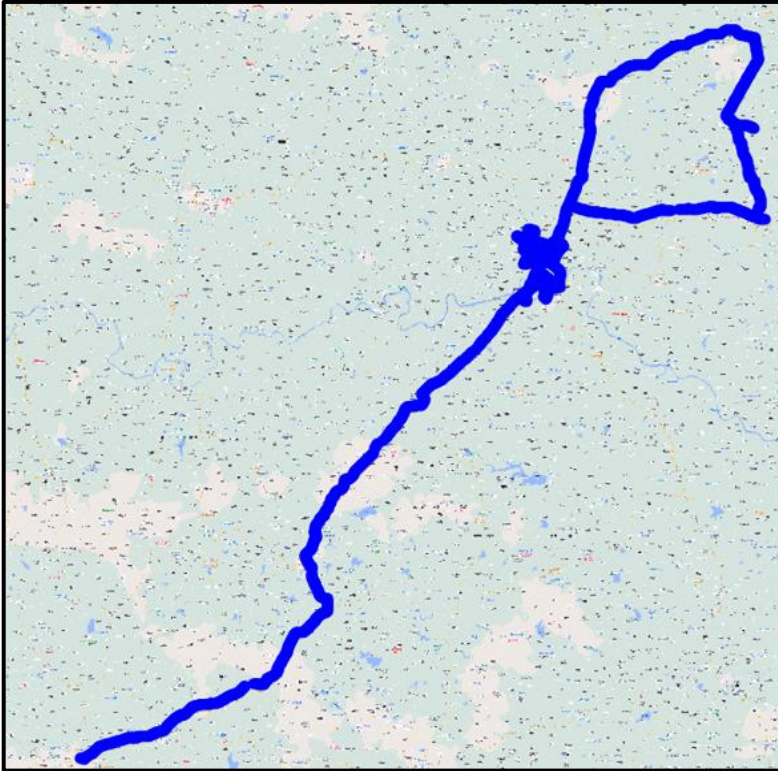
DL throughput	No. of Samples	%
0 to 1 Mbps	5447455	45.6
1 to 2 Mbps	658255	5.51
2 to 3 Mbps	527645	4.42
3 to 4 Mbps	419978	3.52
4 to 8 Mbps	1502139	12.58
8 to 12 Mbps	672380	5.63
>12 Mbps	2715499	22.74
Total	11943351	100
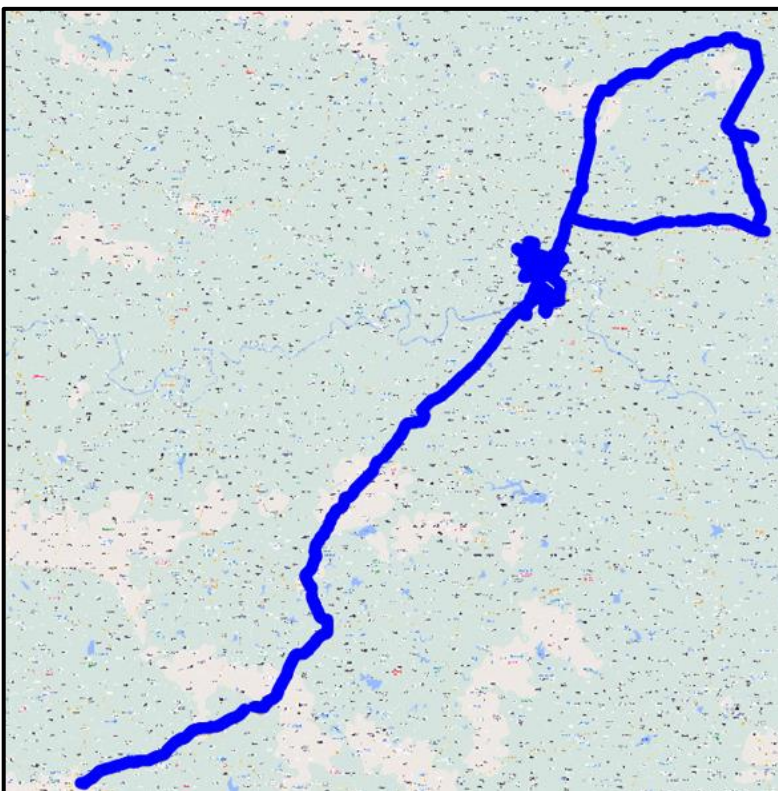
UL throughput	No. of samples	%
0 to 256 Kbps	1279040	29.63
250 to 512 Kbps	156853	3.63
512 Kbps to 1 Mbps	222672	5.16
1 to 2 Mbps	700348	16.22
2 to 3 Mbps	539337	12.49
3 to 4 Mbps	214057	4.96
>4Mbps	1204809	27.91
Total	4317116	100

V. TRAI My Speed App Test Details-2G

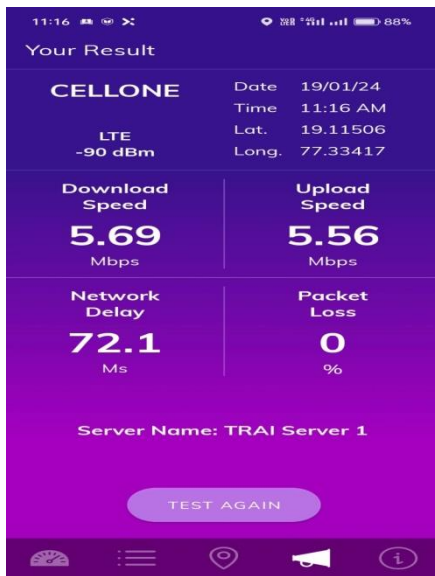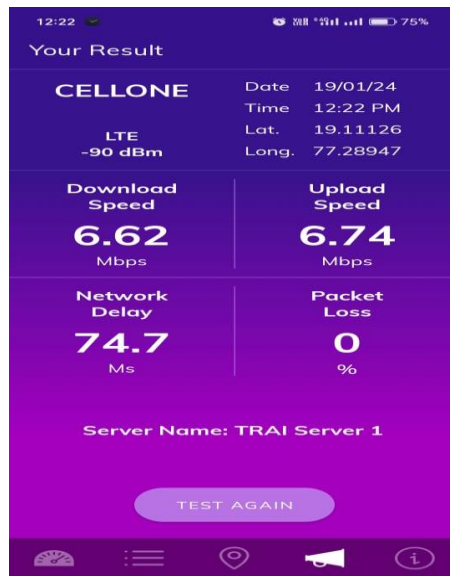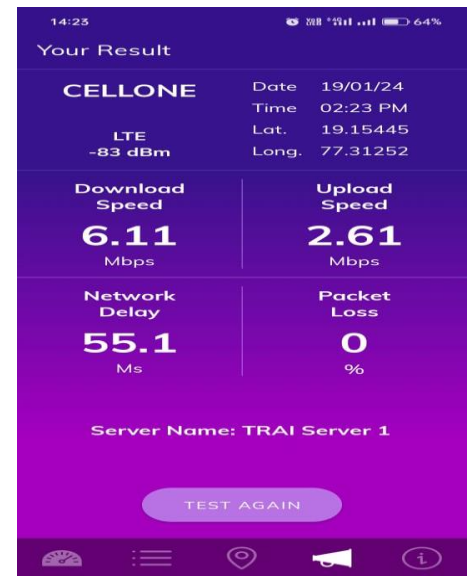| Techology-2G	RTO Office	Govt Medical College	Collector Office	Railway Station	Bus Stand	MGM College of Engg
Download Speed (Mbps)	0.23	0.21	0.10	0.15	0.16	0.23
Upload Speed (Mbps)	0.02	0.18	0.10	0.11	0.12	0.18
Latency	949.9	210.6	180.8	245.9	193.5	151.0

RTO Office

Govt Medical College

Collector Office
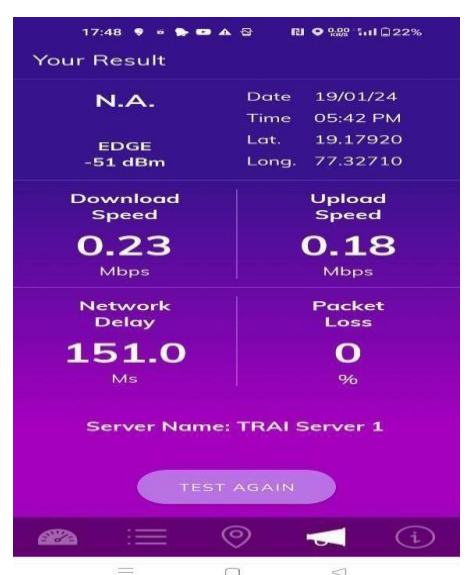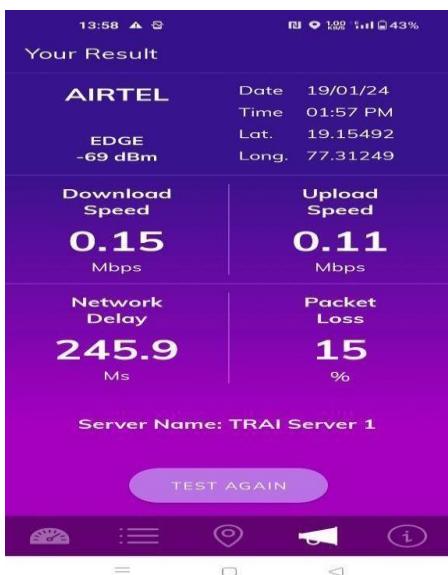
Railway Station

Bus Stand

MGM College of Engg

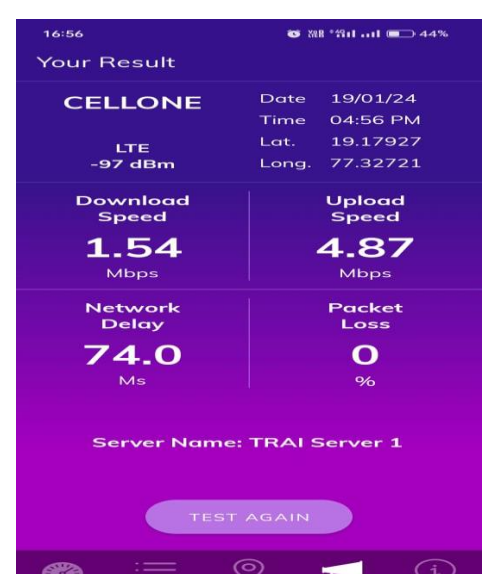| Techology-4G/VoLTE	RTO Office	Govt Medical College	Collector Office	Railway Station	Bus Stand	MGM College of Engg
Download Speed (Mbps)	42.21	16.66	19.55	17.86	12.61	183.51
Upload Speed (Mbps)	19.79	12.93	27.07	7.47	5.75	40.41
Latency	41.3	47.3	43.3	40.5	61.9	33.3

RTO Office　　　　**Govt Medical College**　　　　**Collector Office**
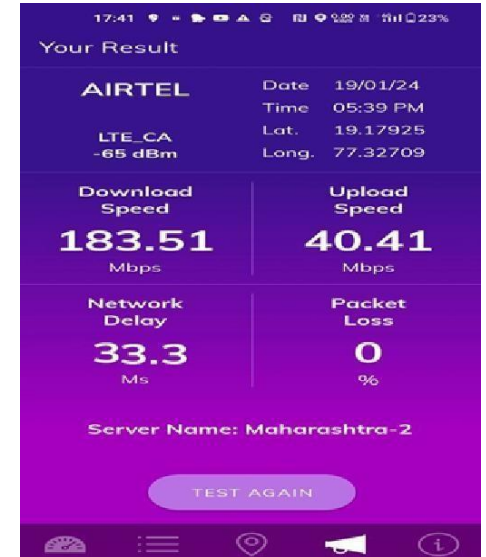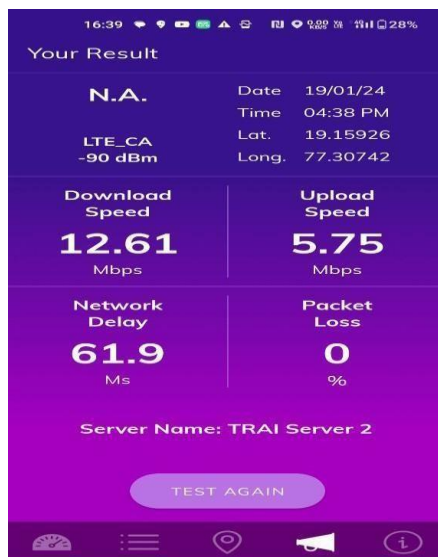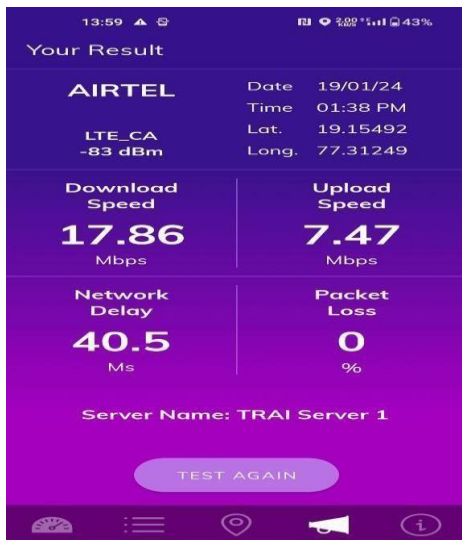
Railway Station　　　　**Bus Stand**　　　　**MGM College of Engg**

Techology-4G/VoLTE	RTO Office	Govt Medical College	Collector Office	Railway Station	Bus Stand	MGM College of Engg
Download Speed (Mbps)	5.69	6.62	6.11	2.93	2.66	1.54
Upload Speed (Mbps)	5.56	6.74	2.61	4.93	0.49	4.87
Latency(ms)	72.1	74.7	55.1	71.3	46.5	74.0

RTO Office

Govt Medical College

Collector Office
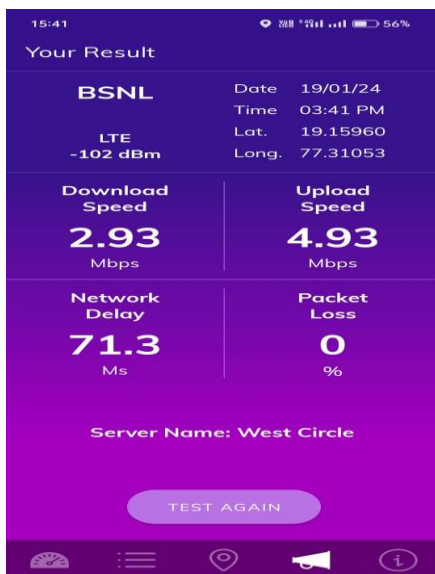
Railway Station
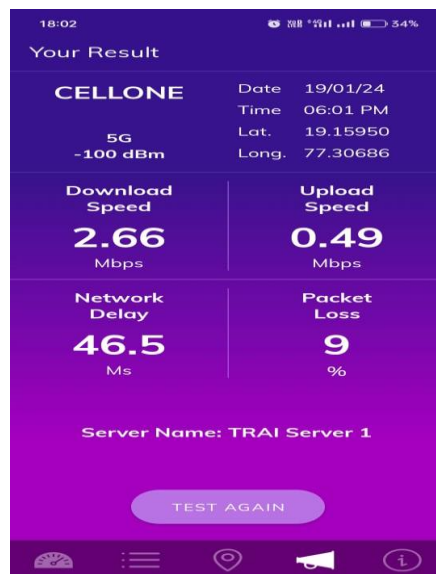
Bus Stand

MGM College of Engg
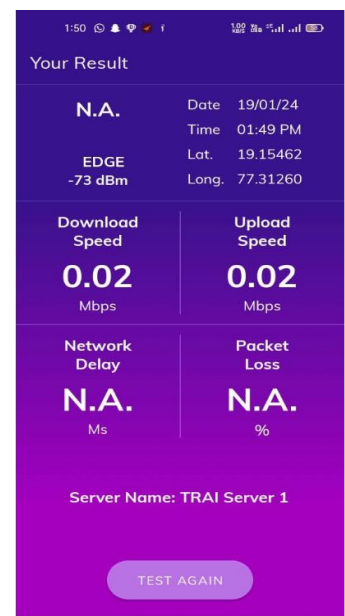
V. TRAI MySpeed App Test Details-4G
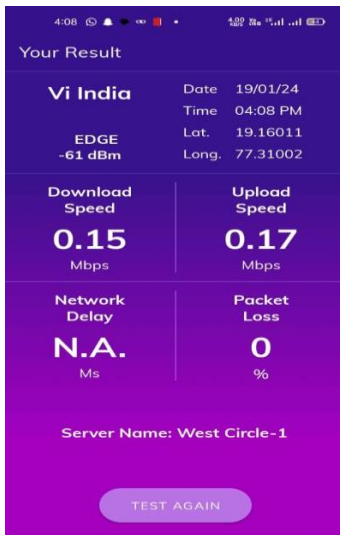
Techology-4G	RTO Office	Govt Medical College	Collector Office	Railway Station	Bus Stand	MGM College of Engg
Download Speed (Mbps)	24.22	17.21	12.96	8.02	6.23	41.33
Upload Speed (Mbps)	10.35	16.49	10.94	13.09	9.14	66.37
Latency	50	29	28	32	30	28

RTO Office

Govt Medical College

Collector Office

Railway Station

Bus Stand

MGM College of Engg

VODAFONE IDEA

Techology-2G	RTO Office	Govt Medical College	Collector Office	Railway Station	Bus Stand	MGM College of Engg
Download Speed (Mbps)	0.04	0.03	0.02	0.15	0.07	0.05
Upload Speed (Mbps)	0.02	0.01	0.02	0.17	0.13	0.06
Latency	192.5	NA	NA	NA	119.8	NA

RTO Office

Govt Medical College
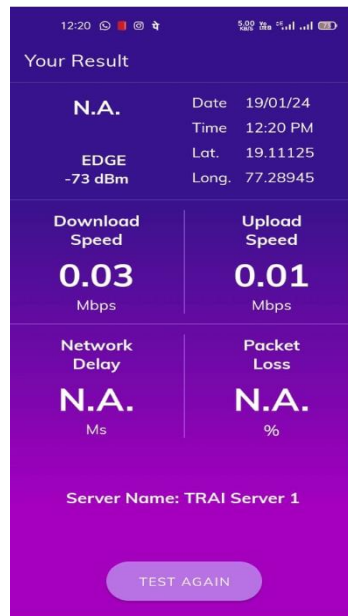
Collector Office

Railway Station

Bus Stand

MGM College of Engg

VODAFONE IDEA

V. TRAI MySpeed App Test Details-4G
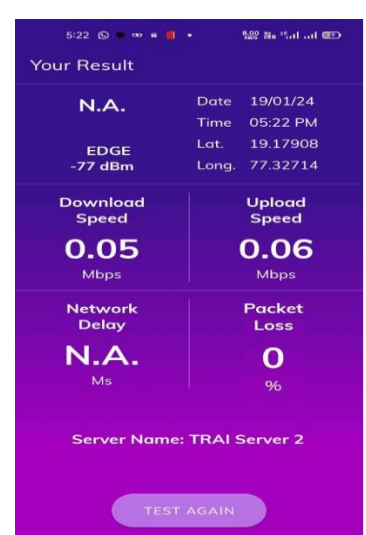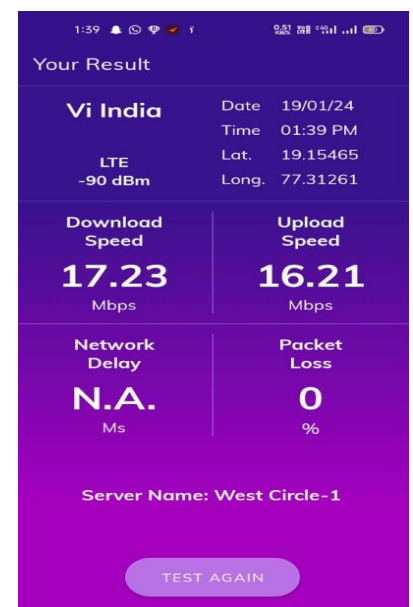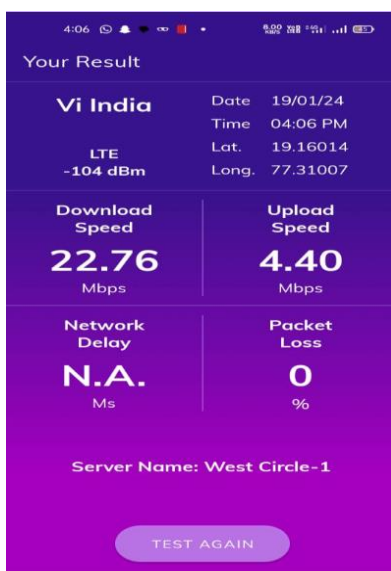
Techology-4G/VoLTE	RTO Office	Govt Medical College	Collector Office	Railway Station	Bus Stand	MGM College of Engg
Download Speed (Mbps)	20.92	12.79	17.23	22.76	29.44	8.13
Upload Speed (Mbps)	22.05	14.32	16.21	4.40	5.00	4.83
Latency	NA	NA	NA	NA	NA	62.9

RTO Office

Govt Medical College

Collector Office

Railway Station

Bus Stand

MGM College of Engg