Operator Assisted Drive Test Report

For

Amravati
15th to 18th November 2022

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 TSPs have met the Rx Quality except BSNL 2G, BSNL 3G, JIO 4G, and VIL 4G.

The Operator Assisted Drive Test has been carried out by Regional Office, Bangalore with the help of Service Providers from 15-11-2022 To 18-11-2022 The drive test covered route of 450 KMs & 6 hotspots. Approximately 350 calls were made for each of the 7 networks: three 2G networks, one 3G network and three LTE networks covering four TSPs.

Overview   Voice Summary   Data Summary

Overview

Regional Office, TRAI Bengaluru conducted Operator Assisted Drive Test from 15th Nov 2022 To 18th Nov 22 covering various locations in **Amravati** City & 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 wait time of 10 sec between calls in all technologies. The drive test covered a drive route of approximately 450 KMs over a period of 4 days from 15th Nov 2022 To 18th Nov 22. Approximately 350+ calls were made for each of the 7 networks: three 2G (Lock Mode) networks, one 3G (Dual mode) networks and three 4G network covering 4 unique TSPs.

Data Tests: Dynamic data test (Test Data on Move) was conducted for 450 kms over a period of 3 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) networks and three 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
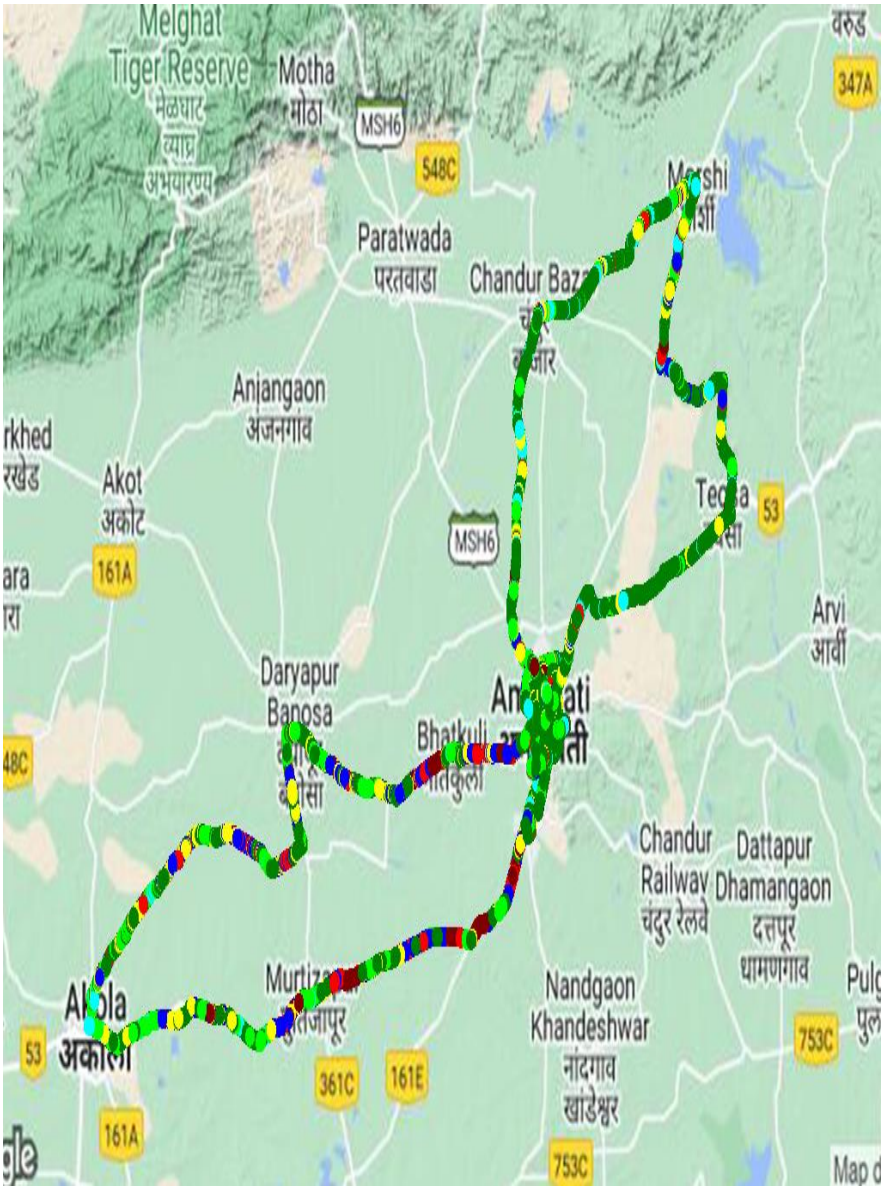
Areas covered	
Amravati	Peth
Nandgaon	Lehgaon
Teosa	Akola
Badnera	Apatapa
Murtizapur	Lekhpuri
Bhatkuli	Nagzari
Chandur bazar	

	Areas covered
DAY 1	Amaravathi – Nandgaon peth – Teosa – Lehgaon – Morshi – Chandur Bazar – Daryabad - Amaravati
DAY 2	Amaravati – Nagzari – Murtizapur -Akola -Apatapa – Lakhpuri -Amarathi
DAY 3	Amarathi City Drive
DAY 4	Static Locations

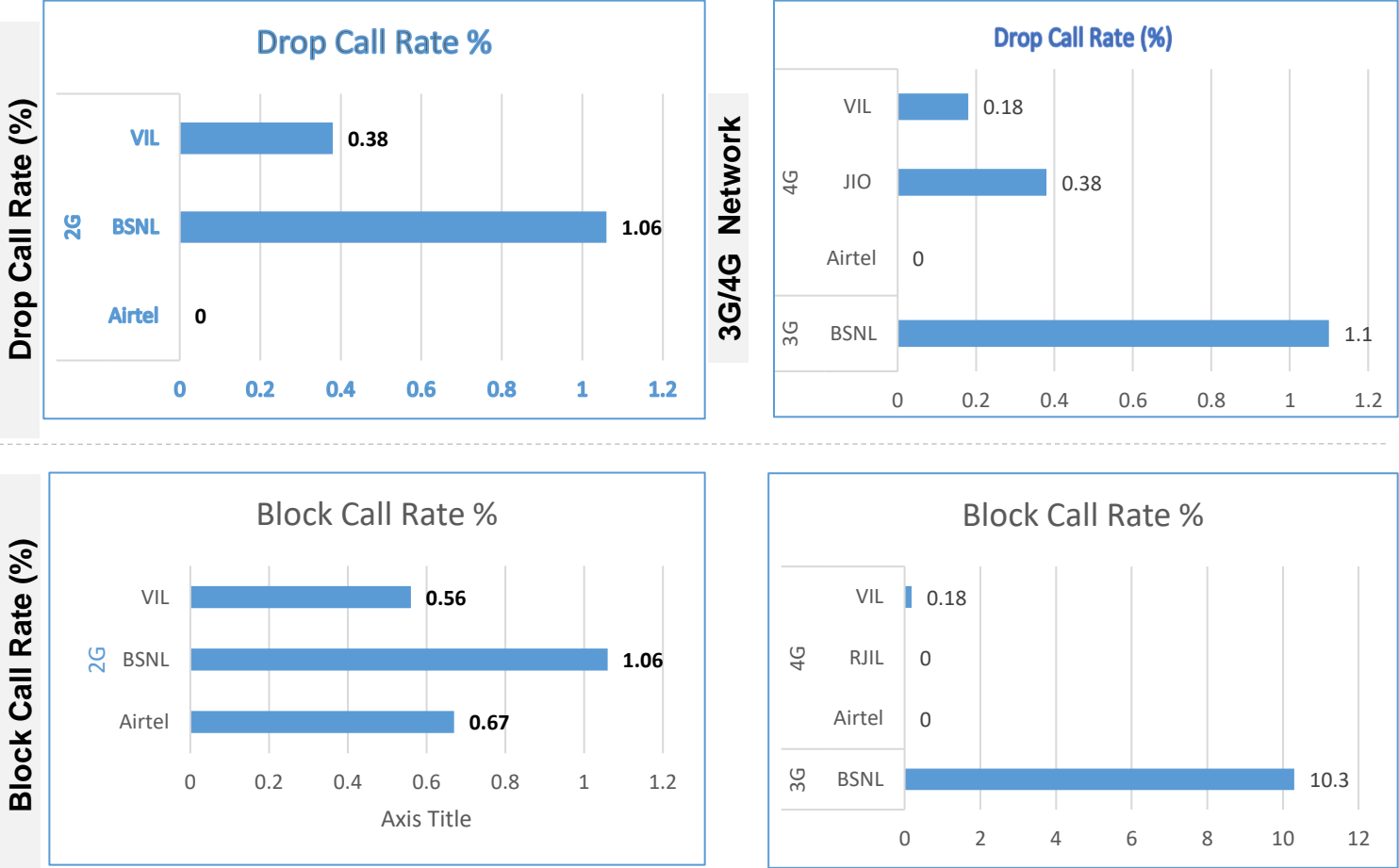## Data Service Test- Static Locations

1. Badnera Bus Stand
2. Prof Ram Meghe Institute of Technology
3. Amaravati District Collector Office
4. Nagpuri Gate Police Station
5. RTO Office
6. Amravati Railway Station

Voice Calls

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

Drop Call Rate (%) — 2G

VIL	0.38
BSNL	1.06
Airtel	0

Drop Call Rate (%) — 3G/4G Network

4G	VIL	0.18
	JIO	0.38
	Airtel	0
3G	BSNL	1.1

Block Call Rate % — 2G

VIL	0.56
BSNL	1.06
Airtel	0.67

Axis Title

Block Call Rate %

4G	VIL	0.18
	RJIL	0
	Airtel	0
3G	BSNL	10.3

KPIs	2G			3G	4G		
	Airtel	BSNL	VIL	BSNL	Airtel	RJIL	VIL
Drop Call Rate %	0	1.06	0.38	1.1	0	0.38	0.18
Block Call Rate %	0.67	1.06	0.56	10.3	0	0	0.18

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%	77.51	66	85.70

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

TSPs	3G	4G		
	BSNL	**Airtel**	**JIO**	**VIL**
Coverage %	62.78	97.27	96.05	93.81

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

TSPs	3G	4G		
	BSNL	**Airtel**	**JIO**	**VIL**
Time Spent on 3G/4G%	65.28	99.01	100	98

Summary

Voice Call	2G		
	Airtel	**BSNL**	**VIL**
Call Attempt	304	753	533
Blocked Call Rate (%)	0.67	1.06	0.56
CSSR% (Accessibility)	99.33	98.94	99.44
Drop Call Rate (%)	0	1.06	0.38
Mobility HOSR (%)	100	99.48	99.64
Rx Quality (%)	95.21	**91.43**	95.00

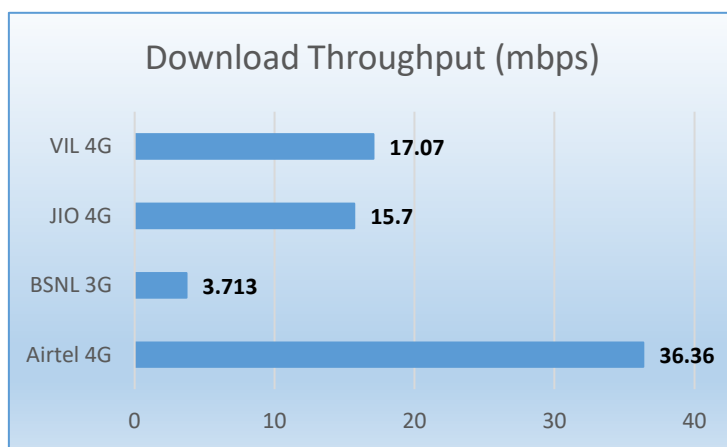| Voice Call	3G/4G			
	BSNL 3G	**Airtel 4G**	**JIO 4G**	**VIL 4G**
Call Attempt	816	317	529	549
Blocked Call Rate (%)	10.3	0	0	0.18
CSSR% (Accessibility)	**89.7**	100	100	99.82
Drop Call Rate (%)	1.1	0	0.38	0.18
Mobility HOSR (%)	99.77	100	98.33	99.73
Rx Quality (%)	**82.28**	95.71	**87.03**	**89.24**

Data Services Static

Data was tested at 6 locations .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	17.07
JIO 4G	15.7
BSNL 3G	3.713
Airtel 4G	36.36

Upload Throughput (mbps)

Network	Value
VIL 4G	9.05
JIO 4G	4.7
BSNL 3G	1.12
Airtel 4G	8.25

Web Browsing Delay (sec)

Network	Value
VIL 4G	4.97
JIO 4G	4.6
BSNL 3G	15.93
Airtel 4G	5.76

Video Streaming Delay (sec)

Network	Value
VIL 4G	0.58
JIO 4G	1.7
BSNL 3G	8.86
Airtel 4G	0.35

Latency (msec)

Network	Value
VIL 4G	89
JIO 4G	58
BSNL 3G	61.4
Airtel 4G	34
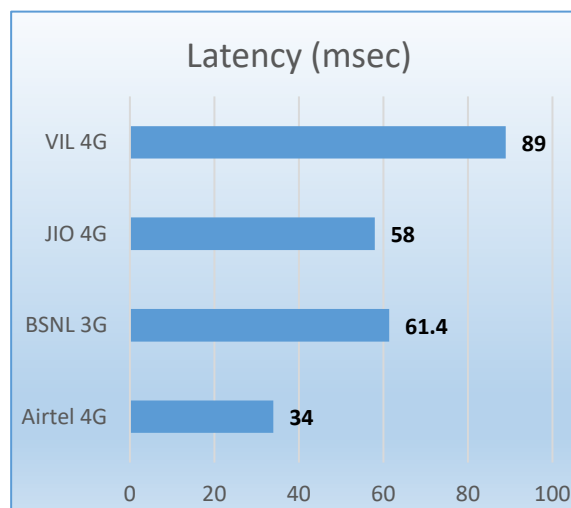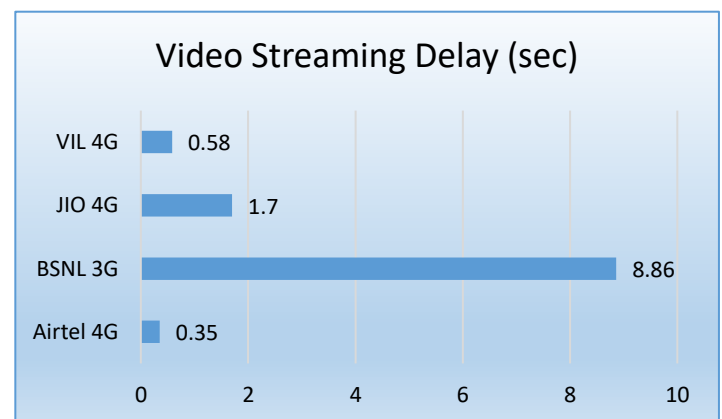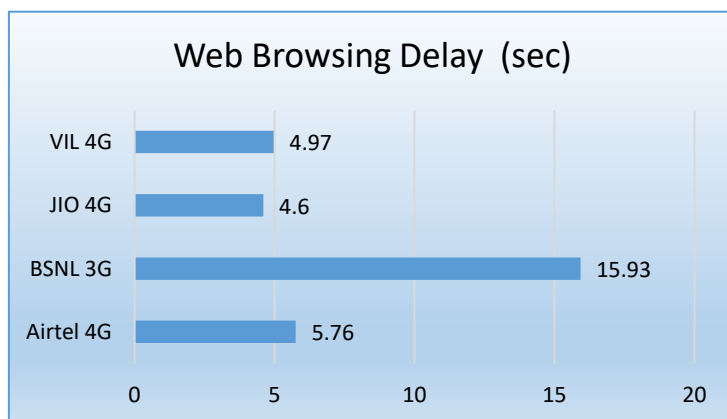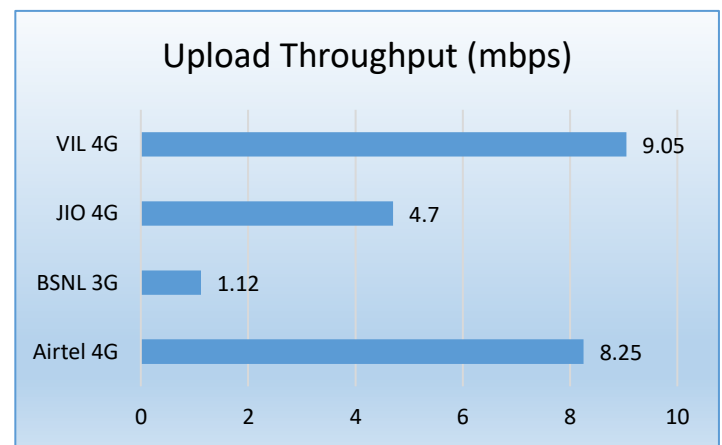
Summary

Data Services Static	2G		
	Airtel	**BSNL**	**VIL**
Download Throughput (kbps)	24.1	146.74	166.47
Upload Throughput (kbps)	19.76	85.47	77.34
Web Browsing Delay (sec)	33.81	68.84	26.66
Latency (msec)	244	145.37	174

Data Services Static	3G/4G			
	BSNL 3G	**Airtel 4G**	**JIO 4G**	**VIL 4G**
Download Throughput (mbps)	3.713	36.36	15.7	17.07
Upload Throughput (mbps)	1.12	8.25	4.7	9.05
Web Browsing Delay (sec)	15.93	5.76	4.6	4.97
Video Streaming Delay (sec)	8.86	0.35	1.7	0.58
Latency (msec)	61.4	34	58	89

Data Services Dynamic (Data Test on Move)	3G/4G			
	Airtel 4G	**BSNL 3G**	**JIO 4G**	**VIL 4G**
Download Throughput (mbps)	22.91	1.94	13.16	9.01
Upload Throughput (mbps)	7.18	1.02	2.02	-

Summary

Data Services Static – Amravati Railway Station	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	22.43	136.8	173.1
Upload Throughput (kbps)	13.94	86.07	80.88
Web Browsing Delay (sec)	37.02	53.5	31.11
Latency (ms)	249	99	202

Data Services Static –Amravati Railway Station	3G/4G			
	BSNL 3G	Airtel	JIO	VIL
Download Throughput (Mbps)	4.62	50.11	13.36	15.52
Upload Throughput (Mbps)	1.27	9.19	3.9	4.11
Web Browsing Delay (sec)	17.27	5.8	4.44	5.746
Video Streaming Delay (sec)	22.51	0.42	1.64	0.624
Latency (ms)	60	37.2	62.6	140

Data Services Static – Nagpuri Gate Police Station	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	27.75	196.58	188.74
Upload Throughput (kbps)	29.68	107.71	70.26
Web Browsing Delay (sec)	26.84	80.04	29.388
Latency (msec)	252.2	99	173

Data Services Static - Nagpuri Gate Police Station	3G/4G			
	BSNL 3G	Airtel	JIO	VIL
Download Throughput (Mbps)	5.5	26.33	19.22	14.32
Upload Throughput (Mbps)	1.3	11.49	5.34	5.65
Web Browsing Delay (sec)	22.66	5.64	4.8	4.56
Video Streaming Delay (sec)	7.42	0.35	1.46	0.61
Latency (ms)	60	33.6	55	86.8

Summary

Data Services Static – Amravati RTO Office	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	21.07	200.83	88.42
Upload Throughput (kbps)	15.78	80.60	68.94
Web Browsing Delay (sec)	32.26	60.00	24.592
Latency (ms)	241	264.60	150

Data Services Static - Amravati RTO Office	3G/4G			
	BSNL 3G	Airtel	JIO	VIL
Download Throughput (Mbps)	2.41	36.98	17.04	27.85
Upload Throughput (Mbps)	0.90	7.04	3.64	7.6
Web Browsing Delay (sec)	21.66	5.88	4.46	5.1
Video Streaming Delay (sec)	4.37	0.29	2.96	0.52
Latency (ms)	68.20	32	57	59

Data Services Static - Amravati District Collector Office	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	26.18	91.27	128.64
Upload Throughput (kbps)	24.46	61.66	75.24
Web Browsing Delay (sec)	34.84	96.22	23.218
Latency (msec)	243	171	180

Data Services Static – Amravati District Collector Office	3G/4G			
	BSNL 3G	Airtel	JIO	VIL
Download Throughput (Mbps)	3.89	35.33	22.02	8.66
Upload Throughput (Mbps)	1.08	7.36	6.84	7.1
Web Browsing Delay (sec)	9	5.6	4.36	4.52
Video Streaming Delay (sec)	5.23	0.35	1.04	0.48
Latency (ms)	60	33	56	92

Summary

Data Services Static – Prof Ram Meghe Institute of Technology	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	29.38	196.76	202.02
Upload Throughput (kbps)	20.32	55.34	71.4
Web Browsing Delay (sec)	35.78	64.72	29.95
Latency (ms)	242	176.60	172

Data Services Static – Prof Ram Meghe Institute of Technology	3G/4G			
	BSNL 3G	Airtel	JIO	VIL
Download Throughput (Mbps)	4.41	29.31	9.8	20.25
Upload Throughput (Mbps)	1.36	8.33	4.18	17.82
Web Browsing Delay (sec)	14.86	5.64	5.02	5.09
Video Streaming Delay (sec)	6.28	0.37	1.6	0.53
Latency (ms)	61	32	54	94

Data Services Static –Badnera Bus Stand	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	17.83	58.23	217.9
Upload Throughput (kbps)	14.43	121.44	97.32
Web Browsing Delay (sec)	36.16	58.60	21.73
Latency (msec)	238.4	61.00	166

Data Services Static – Badnera Bus Stand	3G/4G			
	BSNL 3G	Airtel	JIO	VIL
Download Throughput (Mbps)	1.46	40.15	12.68	15.79
Upload Throughput (Mbps)	0.83	6.08	4.24	11.99
Web Browsing Delay (sec)	10.18	6.04	4.74	4.78
Video Streaming Delay (sec)	7.37	0.37	1.72	0.71
Latency (ms)	59	36	63	63

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	77.51
BSNl 2G	66
VIL 2G	85.7
Airtel 4G	97.27
BSNL 3 G	62.78
Jio 4G	96.05
VIL 4G	93.81

Coverage Distribution %

TSP	2G:[Max, >=-75] / 3G:Max, >=-70 / VoLTE: >=-80	2G:[-75, >=-85] / 3G:[-70,>=-80] / VoLTE:[-80,>=-90]	2G:[-85, >=-95) / 3G:[-80,>=-90] / VoLTE:[-90,>-=-110]	2G:[-95, >=Min] / 3G:[[-90,>=Min] / VoLTE:[[-110,>=Min]
Airtel 2G	51.32	26.19	17.34	5.15
BSNl 2G	32.75	33.25	25.64	8.36
VIL 2G	44.25	41.44	10.87	3.42
Airtel 4G	56.87	13.45	26.96	2.73
BSNL 3G	15.19	21.99	25.6	37.23
Jio 4G	29.86	37.41	28.78	3.95
VIL 4G	15.2	29.2	49.41	6.19
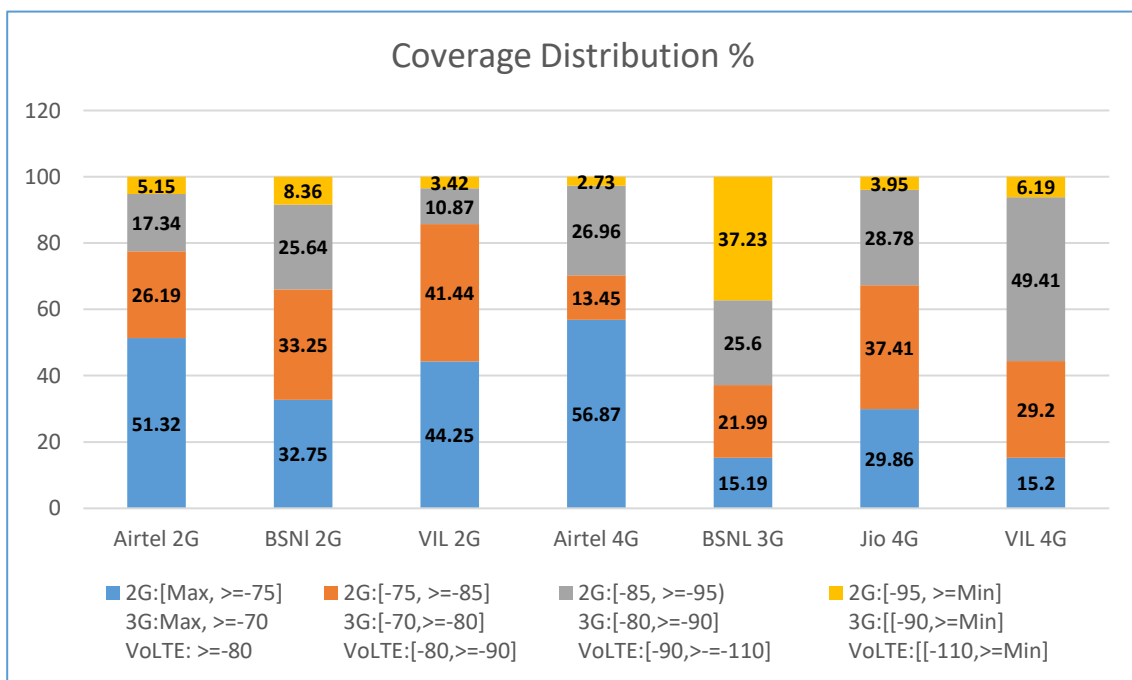
AIRTEL

Technology	Coverage Rate %
2G	**77.51**
4G	**97.27**
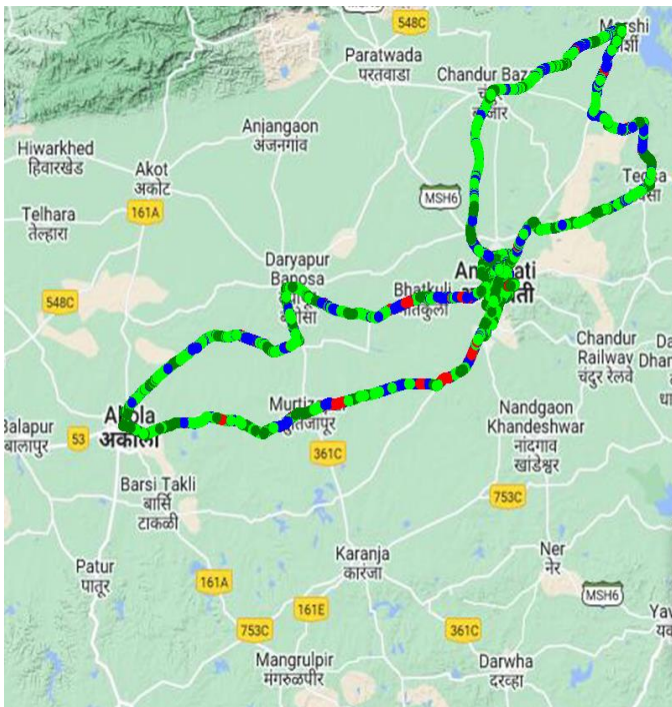
2G	**4G**
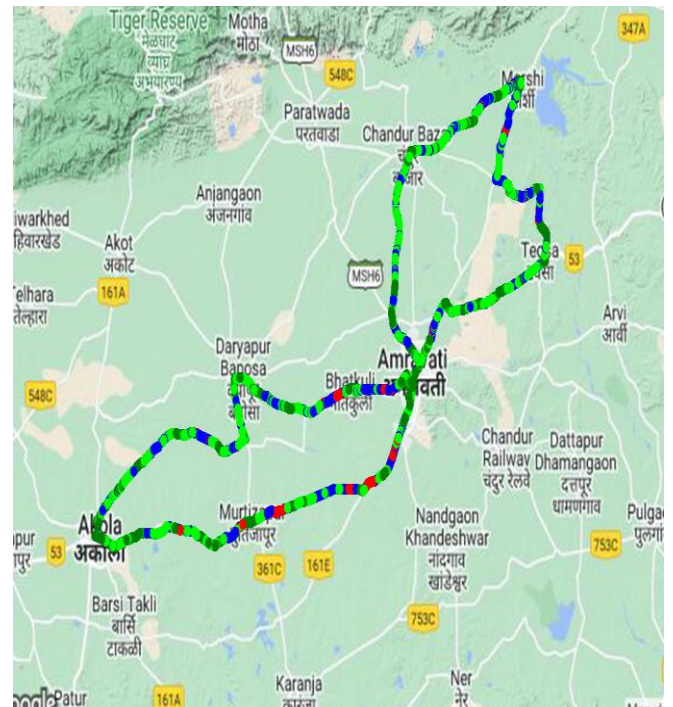
2G			4G/VoLTE		
Overall RxLevel	**# Samples**	**% PDF**	**Overall RSRP**	**# Samples**	**% PDF**
[Max, >=-75]	3504198	51.32	[Max, >=-80]	5596271	56.87
[-75, >=-85)	1788333	26.19	[-80, >=-90)	1323592	13.45
[-85, >=-95)	1183843	17.34	[-90, >=-110)	2653011	26.96
[-95, >=Min)	351577	5.15	[-110, >=Min)	268194	2.73
Total	**6827951**	**100**	**Total**	**9841068**	**100**

BSNL

Technology	Coverage Rate %
2G	66
3G	62.78

2G
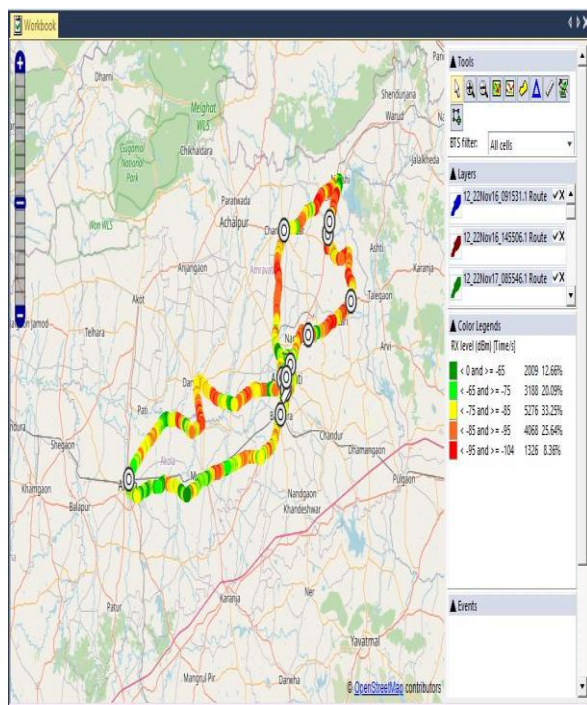
3G
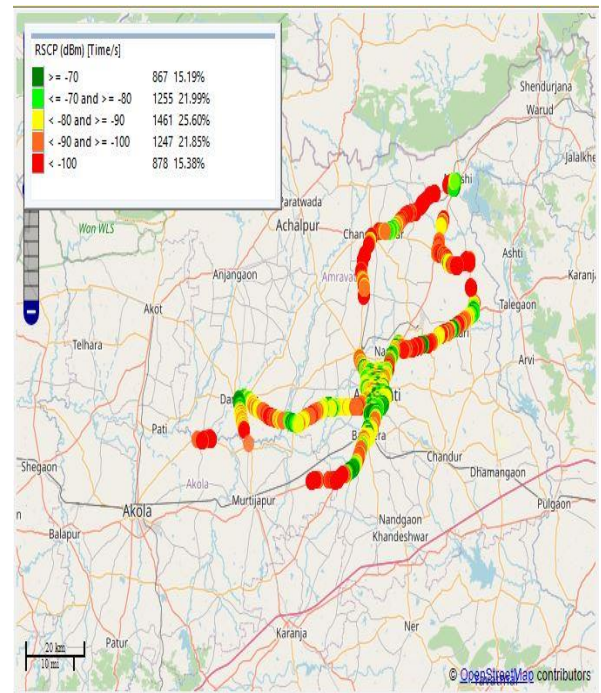
2G		
Overall RxLevel	**# Samples**	**% PDF**
[Max, >=-75]	5197	32.75
[-75, >=-85)	5276	33.25
[-85, >=-95)	4068	25.64
[-95, >=Min)	1326	8.36
Total	**15867**	**100**

3G		
Overall RSCP	**# Samples**	**% PDF**
[Max, >=-70]	867	15.59
[-70, >=-80)	1255	21.99
[-80, >=-90)	1461	25.60
[-90, >=Min)	1247	37.23
Total	**4830**	**100**

JIO

Technology	Coverage Rate %
4G	96.05

LTE KPI PCell Serving RSRP[dBm]

● -80 <= x < -40 (29.86%, 18556)
● -95 <= x < -80 (37.41%, 23253)
● -110 <= x < -95 (28.78%, 17886)
● x < -110 (3.95%, 2456)
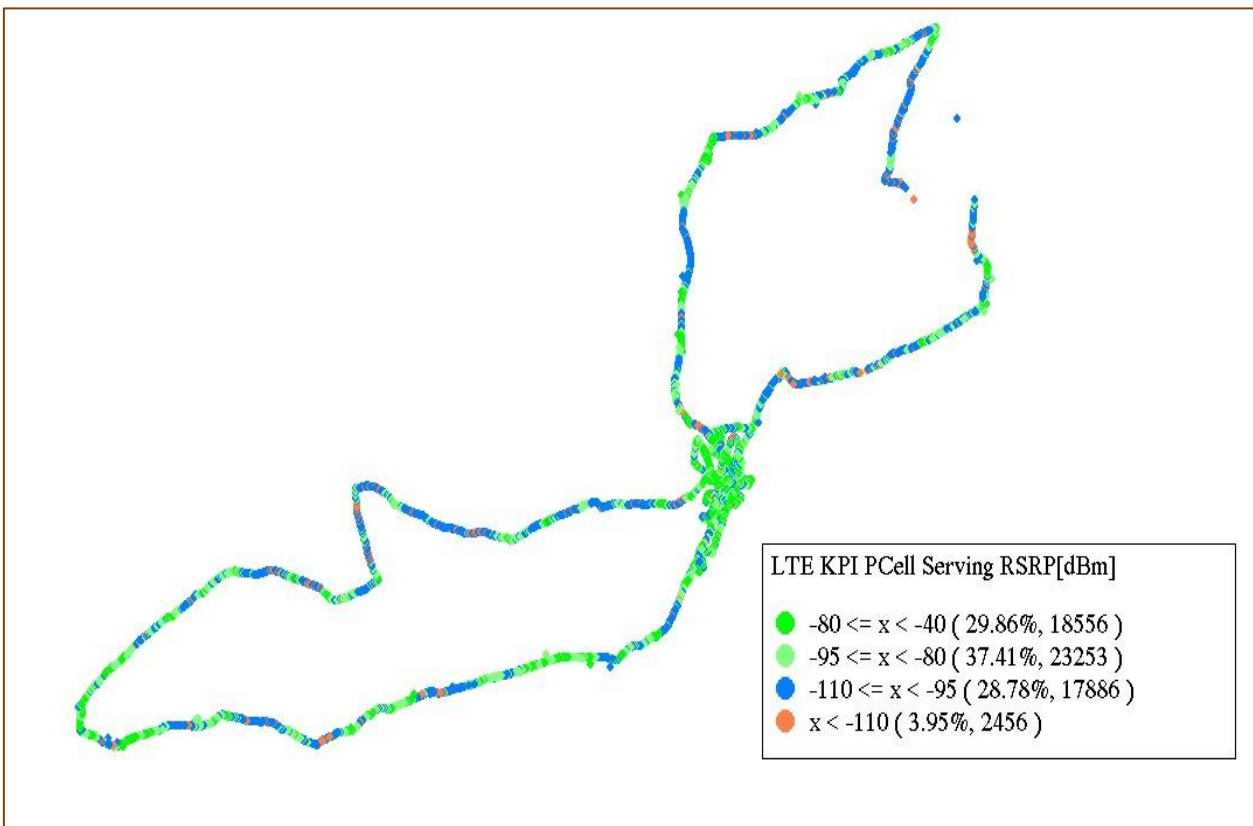
4G/VoLTE		
Overall RSRP	# Samples	% PDF
[Max, >=-80]	18,556	29.86
[-80, >=-90)	23,253	37.41
[-90, >=-110)	17,886	28.78
[-110, >=Min)	2,456	3.95
Total	62,151	100

VIL

Technology	Coverage Rate %
2G	85.70
4G	93.81

2G

4G
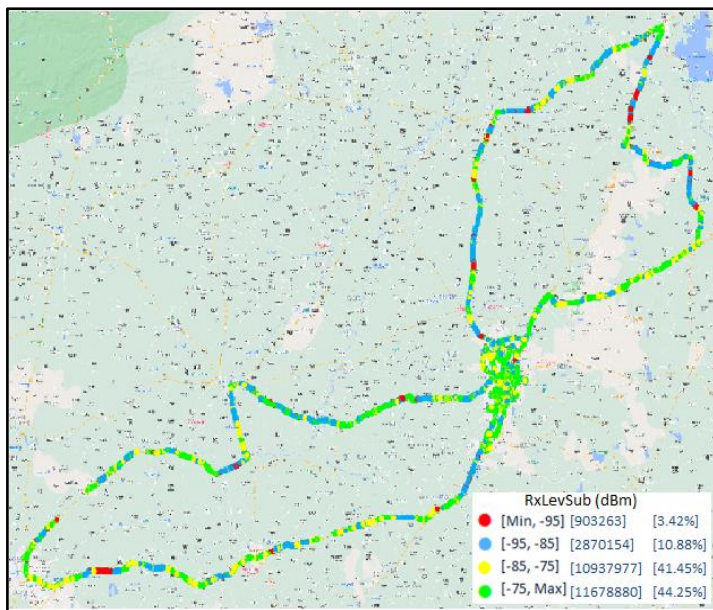
2G		
Overall RxLevel	**# Samples**	**% PDF**
[Max, >=-75]	11678880	44.25
[-75, >=-85)	10937977	41.44
[-85, >=-95)	1014709	10.87
[-95, >=Min)	217171	3.42
Total	26390274	100
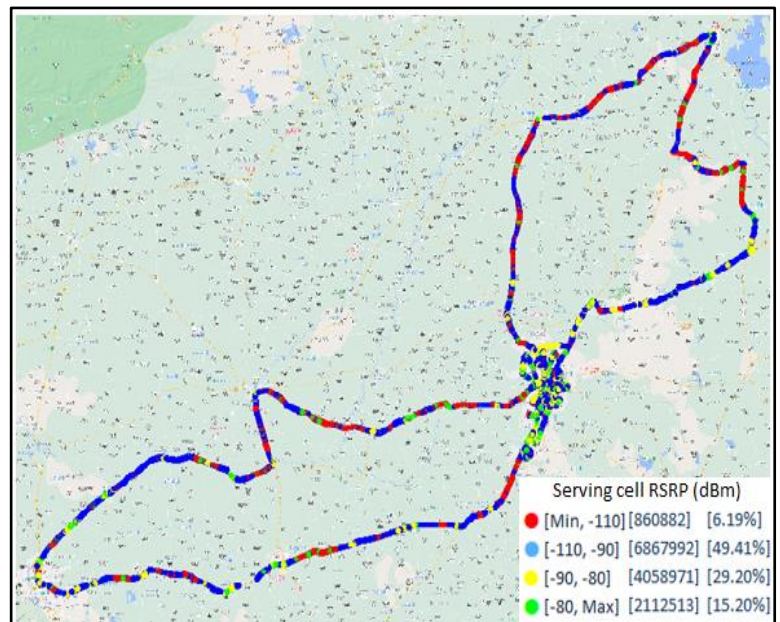
4G/VoLTE		
Overall RSRP	**# Samples**	**% PDF**
[Max, >=-80]	2112513	15.20
[-80, >=-90)	4058971	29.20
[-90, >=-110)	6867992	49.41
[-110, >=Min)	860882	6.19
Total	13900358	100

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	95.21
BSNL 2G	91.43
VIL 2G	95
Airtel 4G	95.71
BSNL 3G	82.29
Jio 4G	87.03
VIL 4G	89.24

Rx Quality

	Airtel 2G	BSNl 2G	VIL 2G	Airtel 4G	BSNL 3G	Jio 4G	VIL 4G
Orange	4.79	8.57	5	4.29	17.71	12.97	10.76
Blue	95.21	91.43	95	95.71	82.29	87.03	89.24

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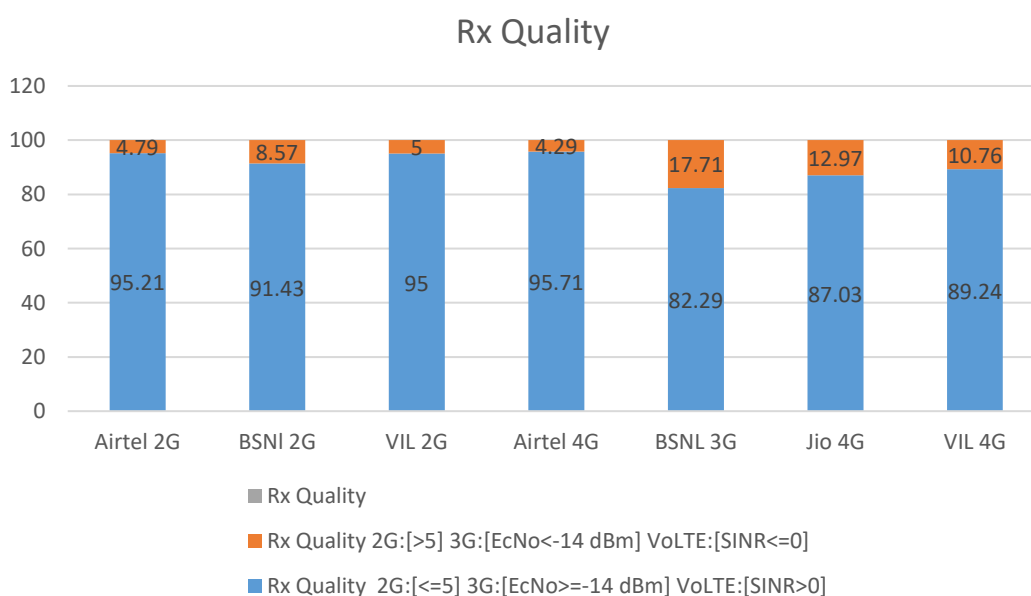
Airtel

Technology	Rx Quality %
2G	95.21
4G	95.71
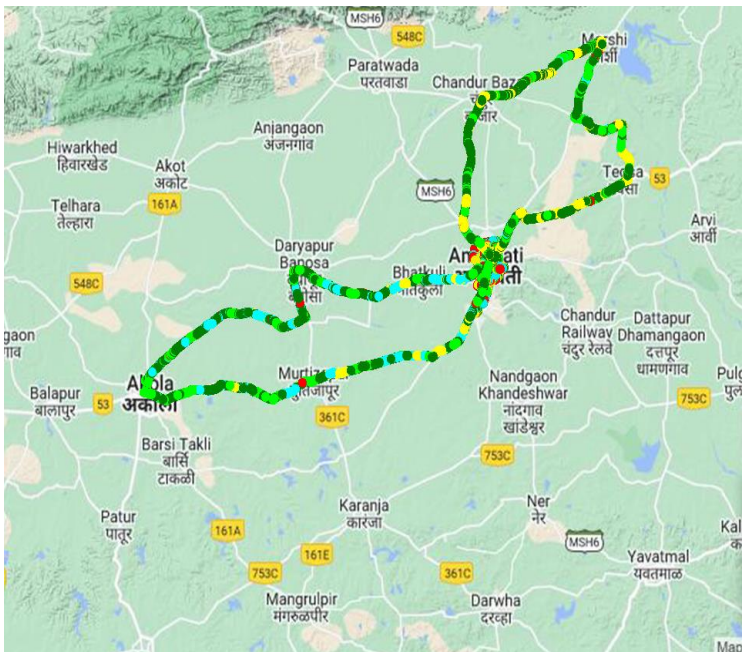
2G	4G
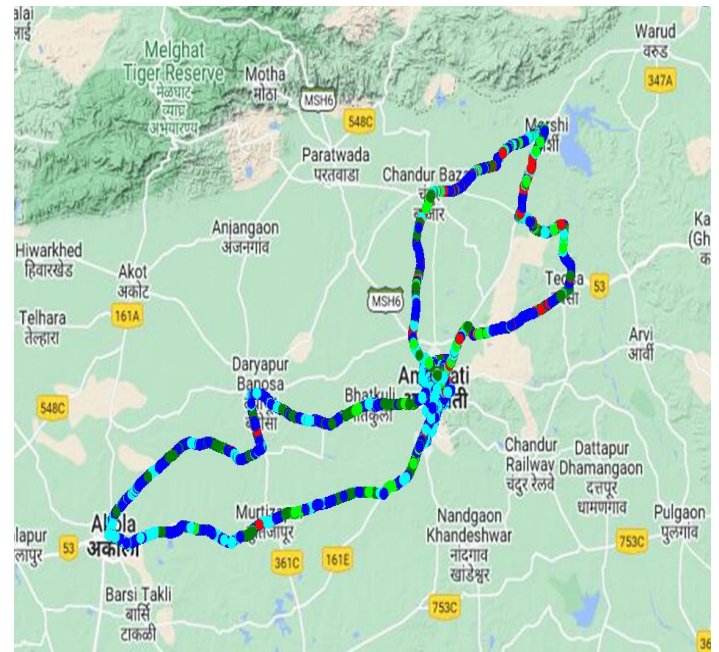
Overall Rx Quality	# Samples	% PDF
(Min, <=2)	5601159	42.09
(2, <=3)	155890	31.82
(3 , <=4)	484232	9.98
(4 , <=5)	123032	11.33
(5 , <=Max)	294430	4.78
Total	6658743	100%

Overall SINR	# Samples	% PDF
(Min, <=0)	782032	4.28
(0, <=5)	5738326	53.51
(5, <=10)	5501407	23.21
(10, <=15)	2132102	11.52
(15, <=Max)	1820805	7.48
Total	15974672	100

BSNL

Technology	Rx Quality %
2G	**91.43**
3G	**82.29**

2G

3G
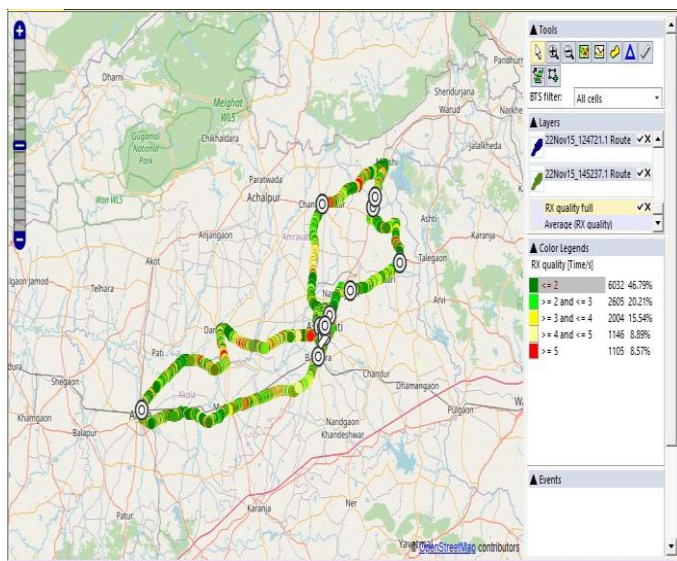
Overall Rx Quality	# Samples	% PDF
(Min, <=2)	6032	46.79
(2, <=3)	2605	20.21
(3 , <=4)	2004	15.54
(4 , <=5)	1146	8.89
(5 , <=Max)	1105	8.57
Total	12892	100
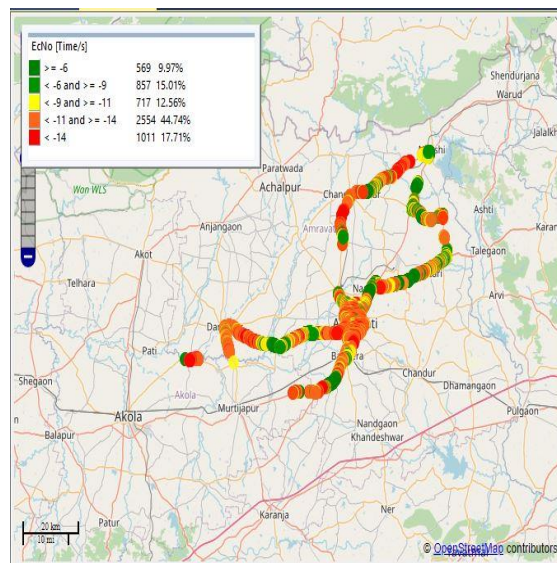
Overall EcNo	# Samples	% PDF
(Max, <=-6)	569	9.97
(-6, <=-9)	857	15.01
(-9, <=-11)	717	12.56
(-11, <=-14)	2554	44.74
(-14, <= Min)	1011	17.71
Total	5708	100

JIO

Technology	Rx Quality (%)
4G/4G	**87.03**

LTE KPI PCell SINR[dB]

- 15 <= x (24.44%, 15187)
- 10 <= x < 15 (20.54%, 12764)
- 5 <= x < 10 (23.13%, 14377)
- 0 <= x < 5 (18.92%, 11761)
- x < 0 (12.97%, 8062)
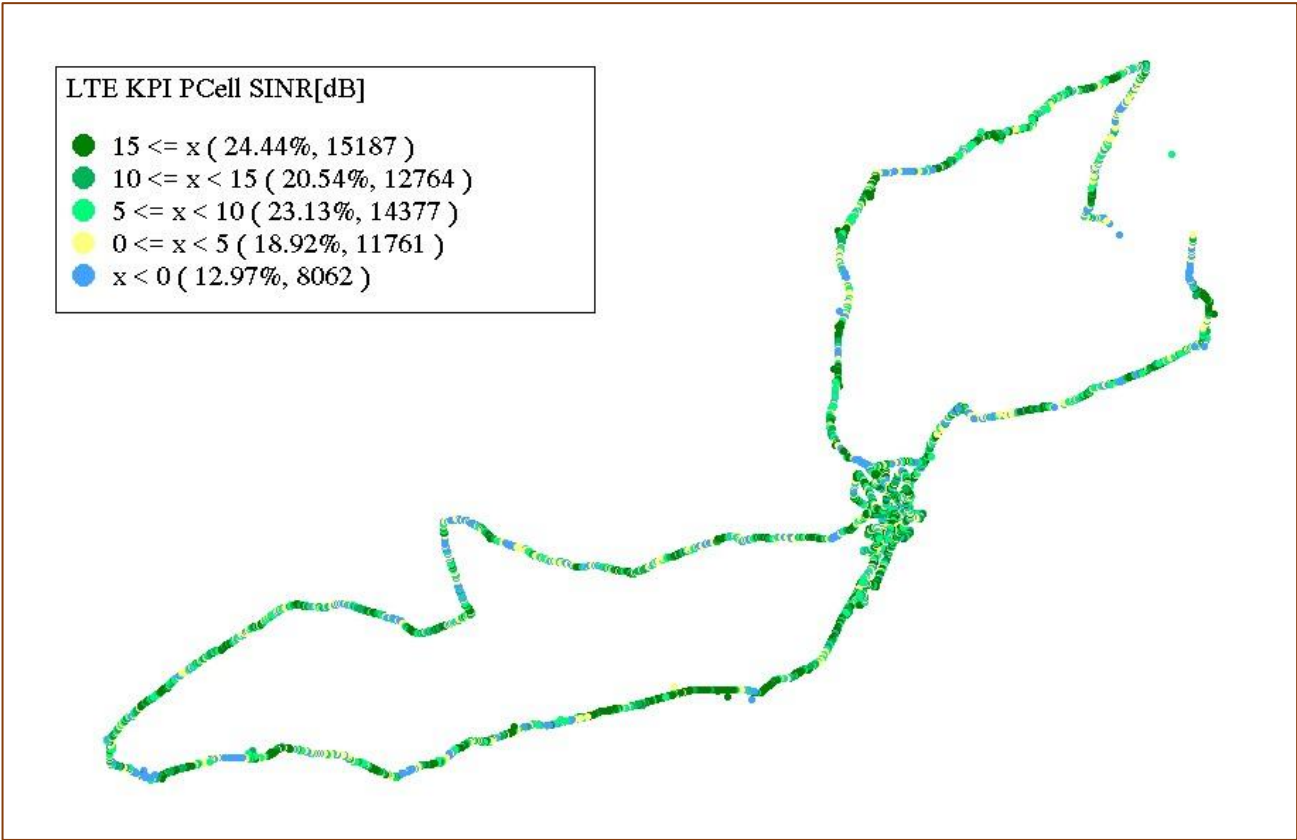
Overall SINR	# Samples	% PDF
(Min, <=0)	8062	12.97
(0, <=5)	11761	18.92
(5, <=10)	14377	23.13
(10, <=15)	12764	20.54
(15, <=Max)	15187	24.44
Total	**62141**	**100**

VIL

Technology	Rx Quality %
2G	**95.002**
4G	**89.24**

2G	**4G**

RxQual Sub
[Min, 2] [12189644] [88.74%]
[2, 3] [229055] [1.67%]
[3, 4] [294148] [2.14%]
[4, 5] [337630] [2.46%]
[5, Max] [686528] [4.99%]

Serving cell RS SINR (dB)
[Min, -6] [214355] [1.54%]
[-6, 0] [1280885] [9.21%]
[0, Max] [12405118] [89.24%]
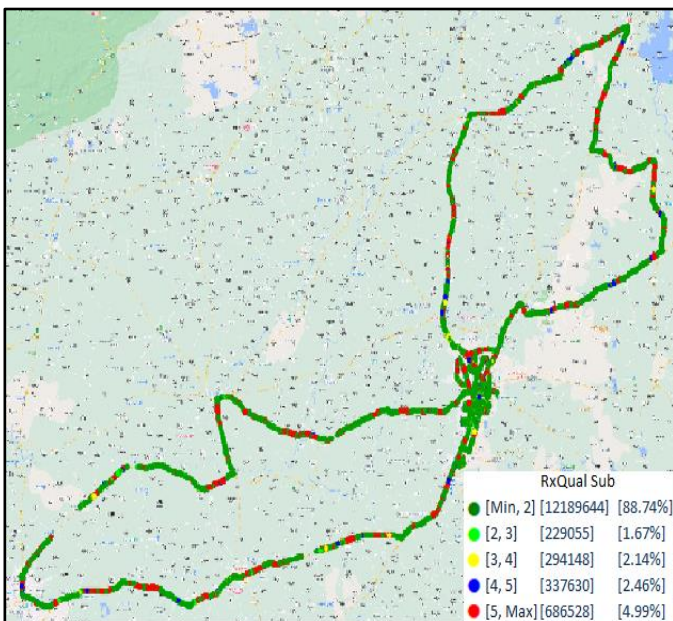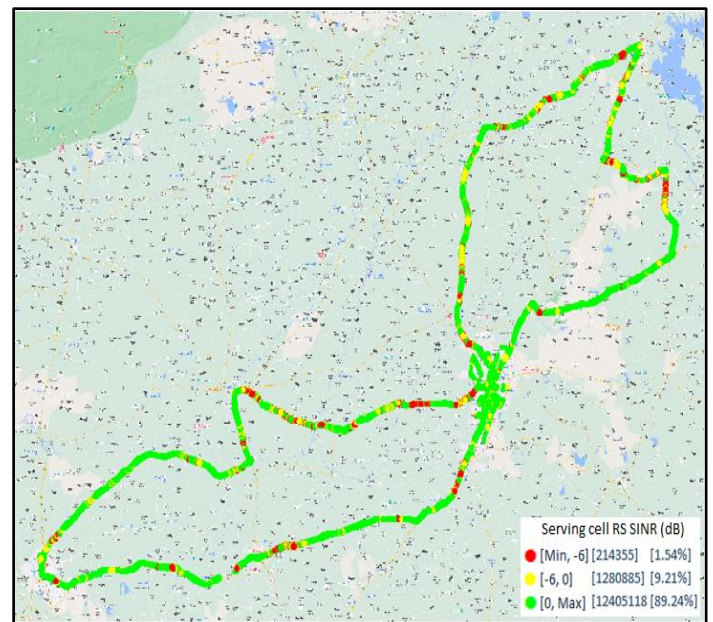
Overall Rx Quality	# Samples	% PDF	Overall SINR	# Samples	% PDF
(Min, <=2)	12189664	88.73	(Min, <=0)	1495240	10.76
(2, <=3)	229055	1.66	(0, <=5)	2729066	19.63
(3 , <=4)	294148	2.14	(5, <=10)	3485143	25.07
(4 , <=5)	337630	2.45	(10, <=15)	2757673	19.84
(5 , <=Max)	686528	4.99	(15, <=Max)	3433236	24.70
Total	13737025	100	Total	13900358	100

TSP	Percentage of time spent on 3G/4G/4G
Airtel 4G	**99.01**
BSNL 3G	**65.28**
Jio 4G	**100**
VIL 4G	**98**

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

TSP	Value
Airtel 4G	99.01
BSNL 3G	65.28
Jio 4G	100
VIL 4G	98
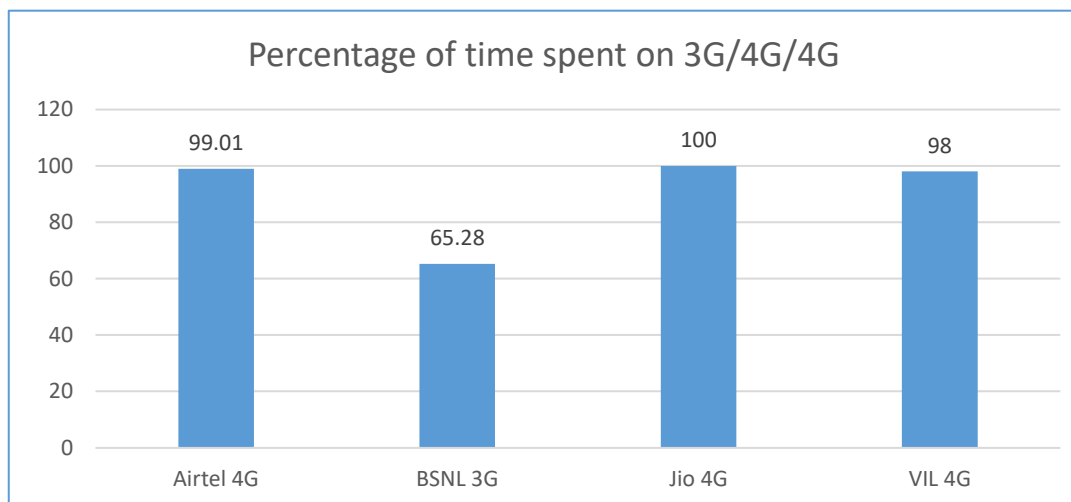
Airtel

Technology	Time Spent on 4G
4G	**99.01**
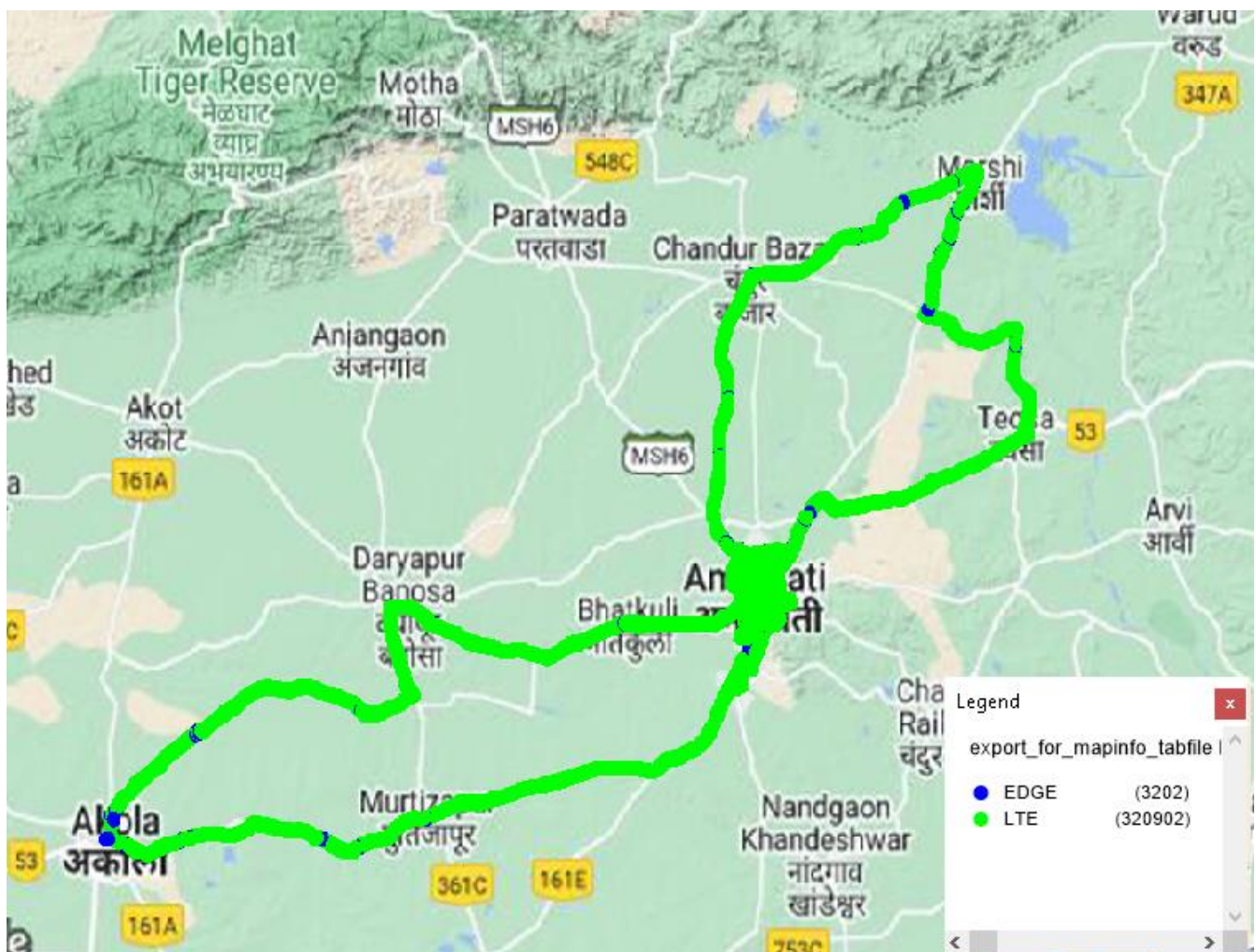
BSNL

Technology	Time Spent
3G	**65.28**

Technology Plot of complete SSA (3G)
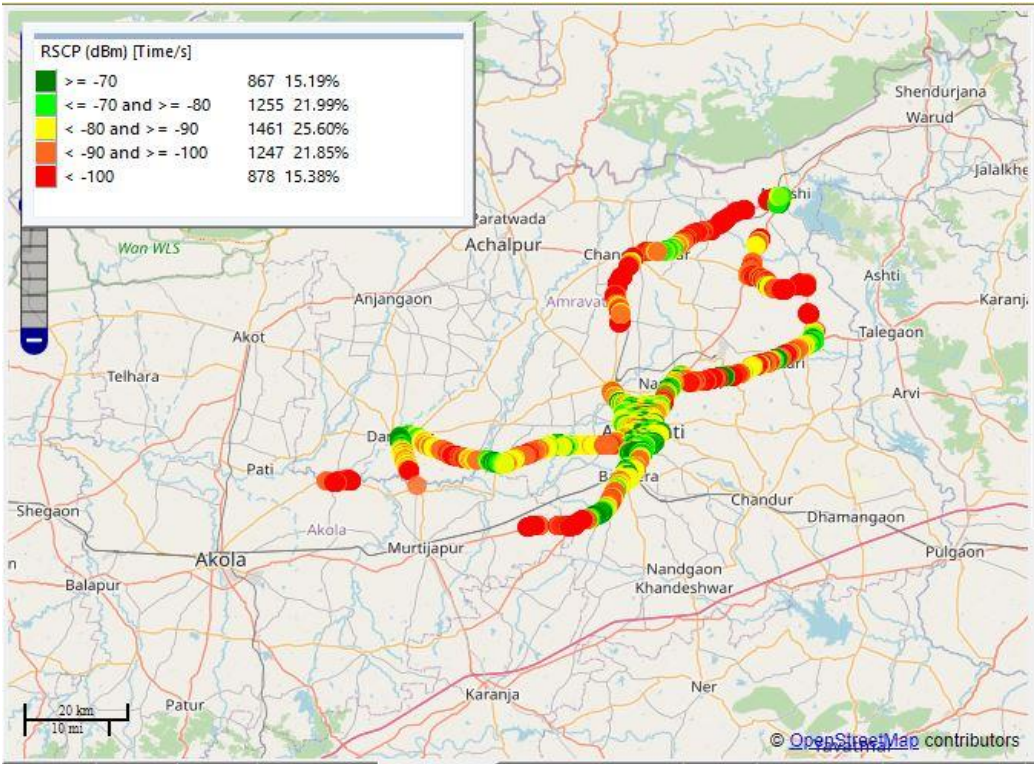
JIO

Technology	Time Spent
4G	**100**
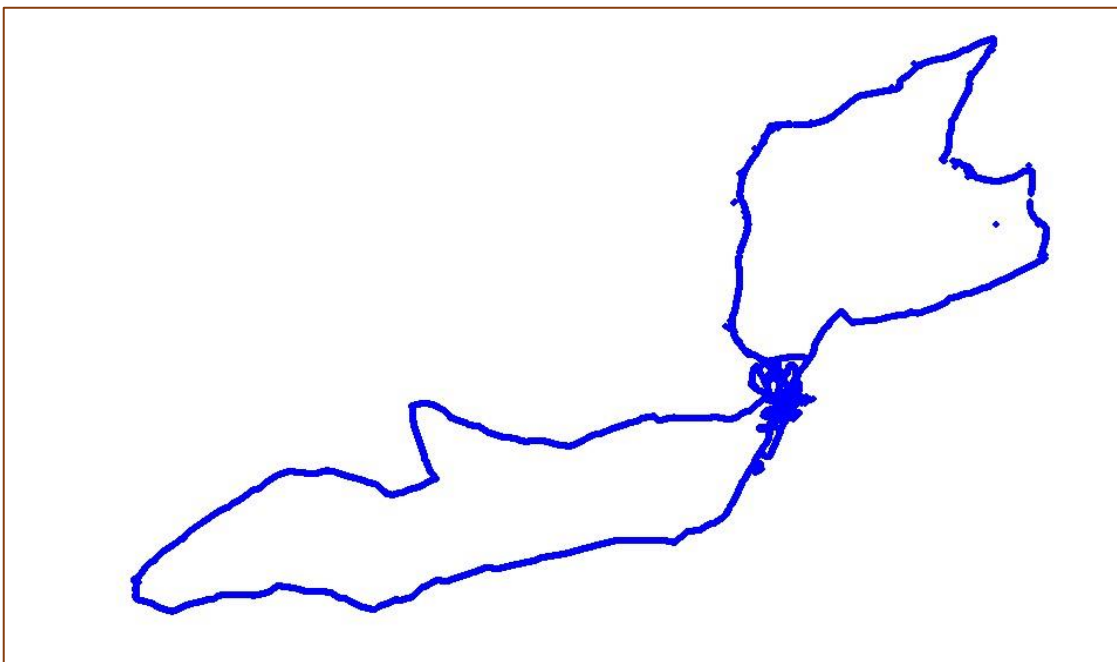
VIL

Technology	Time Spent
4G	**98**
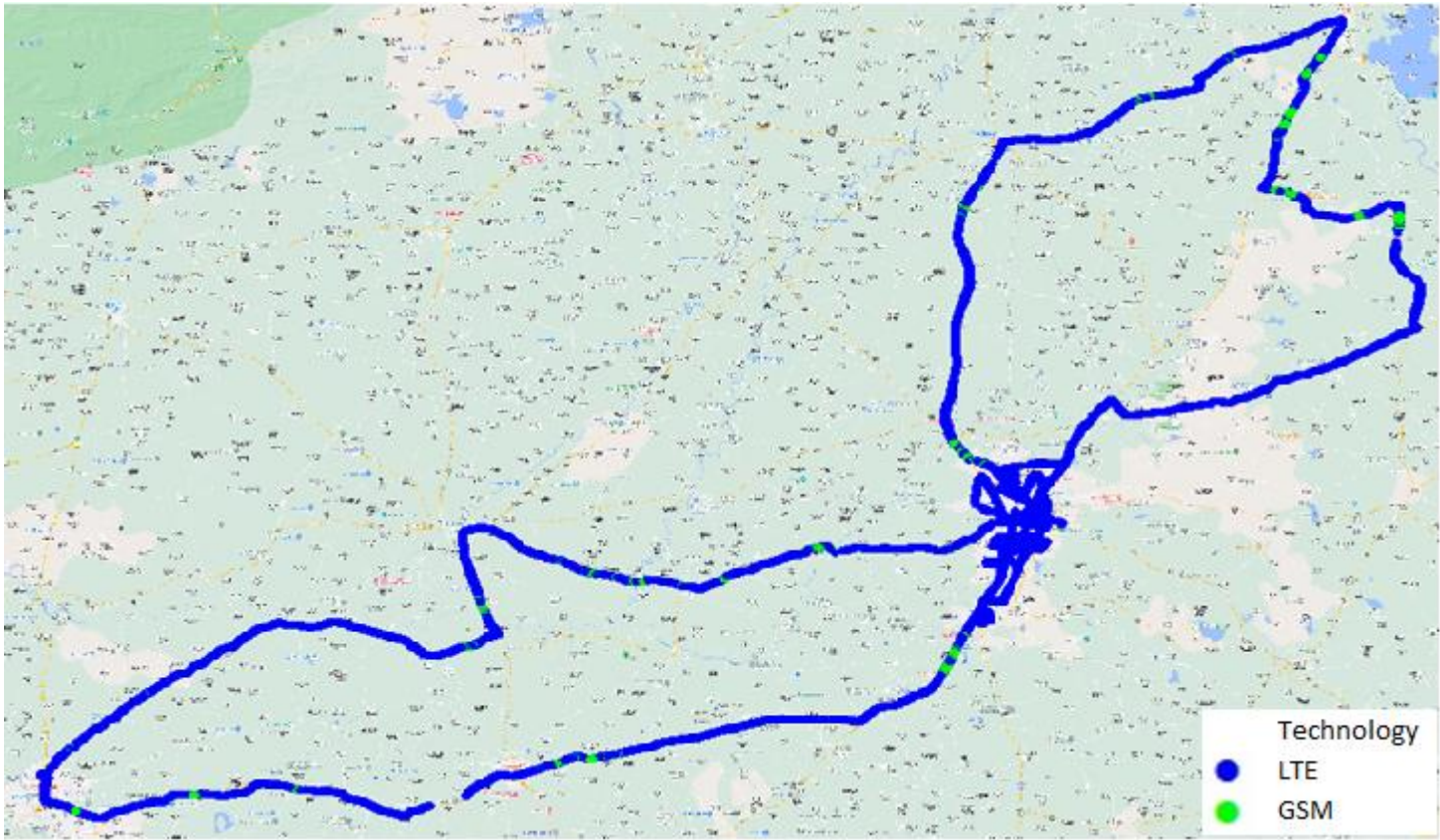
Airtel
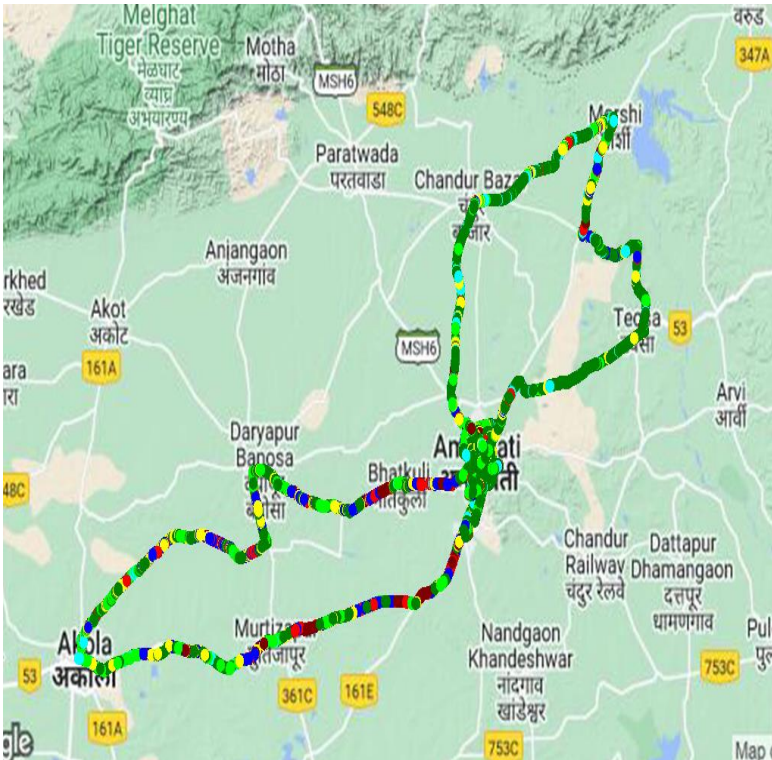
DL throughput	No. of Samples	%
0 to 1 Mbps	2042629	5.10
1 to 2 Mbps	416669	4.17
2 to 3 Mbps	406541	3.70
3 to 4 Mbps	430120	3.54
4 to 8 Mbps	2105907	11.37
8 to 12 Mbps	1552122	7.74
>12 Mbps	5815947	64.37
Total	12769935	100.00

Legend
export_for_mapinfo_tabfil_5 t
- 4 to 50 (28623)
- 3 to 4 (2145)
- 2 to 3 (3031)
- 1 to 2 (4873)
- 0.512 to 1 (4102)
- 0.256 to 0.512 (2800)
- 0 to 0.256 (10696)
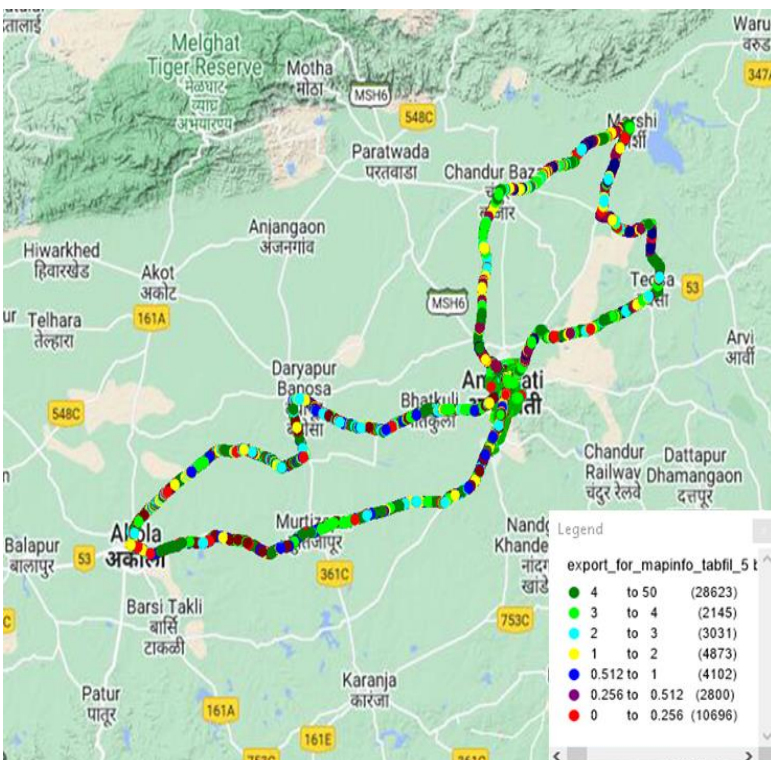
Upload throughput	No. of samples	%
0 to 256 kbps Mbps	10696	19.01
250 to 512 kbps	2800	4.98
512 Kbps to 1 Mbps	4102	7.29
1 to 2 Mbps	4873	8.66
2 to 3 Mbps	3031	5.39
3 to 4 Mbps	2145	3.81
>4Mbps	28623	50.87
Total	56270	100

BSNL
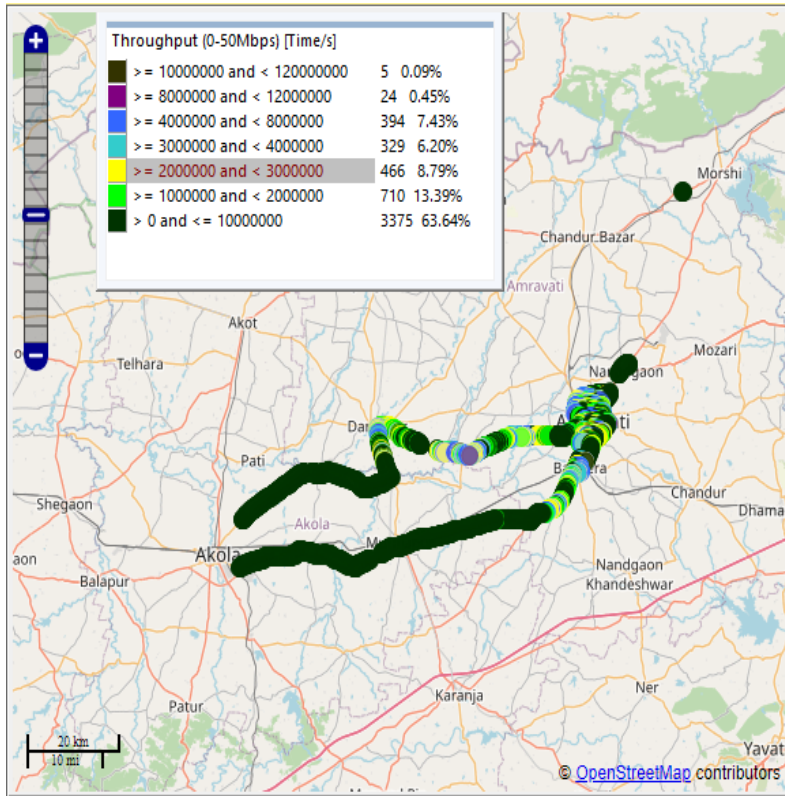
DL throughput	No. of Samples	%
0 to 1 Mbps	3375	63.64
1 to 2 Mbps	710	13.39
2 to 3 Mbps	466	8.79
3 to 4 Mbps	329	6.20
4 to 8 Mbps	394	7.43
8 to 12 Mbps	24	0.45
>12 Mbps	5	0.09
Total	5303	100
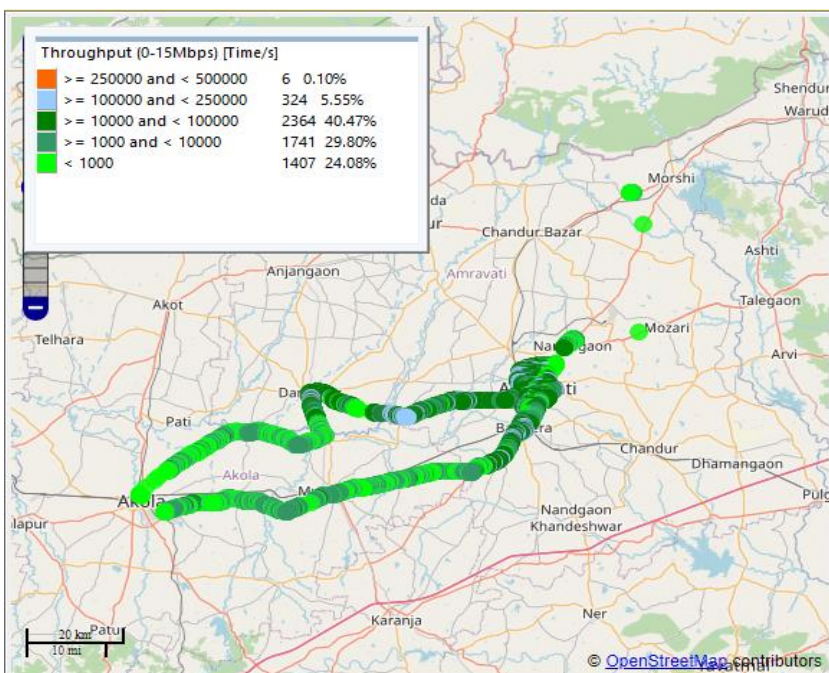
UL throughput	No. of samples	%
0 to 256 kbps	1407	24.08
250 to 512 kbps	1741	29.80
512 Kbps to 1 Mbps	2364	40.47
1 to 2 Mbps	324	5.50
2 to 3 Mbps	6	0.10
3 to 4 Mbps		
>4Mbps		
Total	5842	100

JIO

LTE KPI PDSCH Throughput[Mbps]

- 12 <= x < 100 (37.12%, 22341)
- 8 <= x < 12 (12.55%, 7555)
- 4 <= x < 8 (20.50%, 12339)
- 3 <= x < 4 (6.87%, 4132)
- 2 <= x < 3 (7.61%, 4579)
- 1 <= x < 2 (7.94%, 4780)
- 0 <= x < 1 (7.41%, 4458)
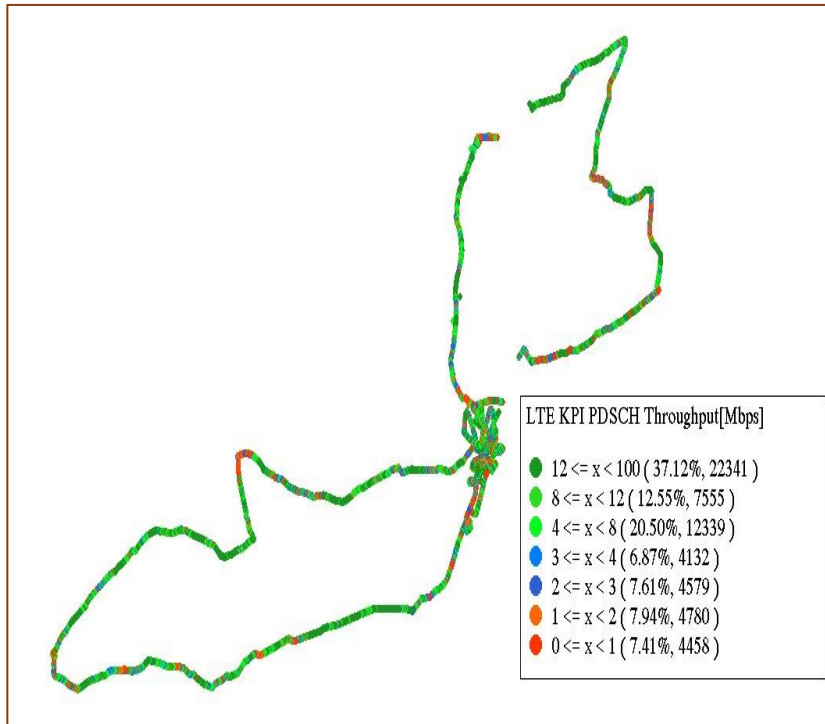
DL throughput	No. of Samples	% PDF
0 to 1 Mbps	4,458	7.4%
1 to 2 Mbps	4,780	15.3%
2 to 3 Mbps	4,579	23.0%
3 to 4 Mbps	4,132	29.8%
4 to 8 Mbps	12,339	50.3%
8 to 12 Mbps	7,555	62.9%
>12 Mbps	22,341	100.0%
Total	60,184	

LTE KPI PUSCH Throughput[Mbps]

- 4 <= x < 50 (19.80%, 12284)
- 3 <= x < 4 (7.16%, 4440)
- 2M <= x < 3M (10.14%, 6289)
- 1M <= x < 2M (15.25%, 9464)
- 0.512 <= x < 1 (12.00%, 7444)
- 0.256 <= x < 0.512 (9.21%, 5715)
- 0 <= x < 0.256 (26.45%, 16410)
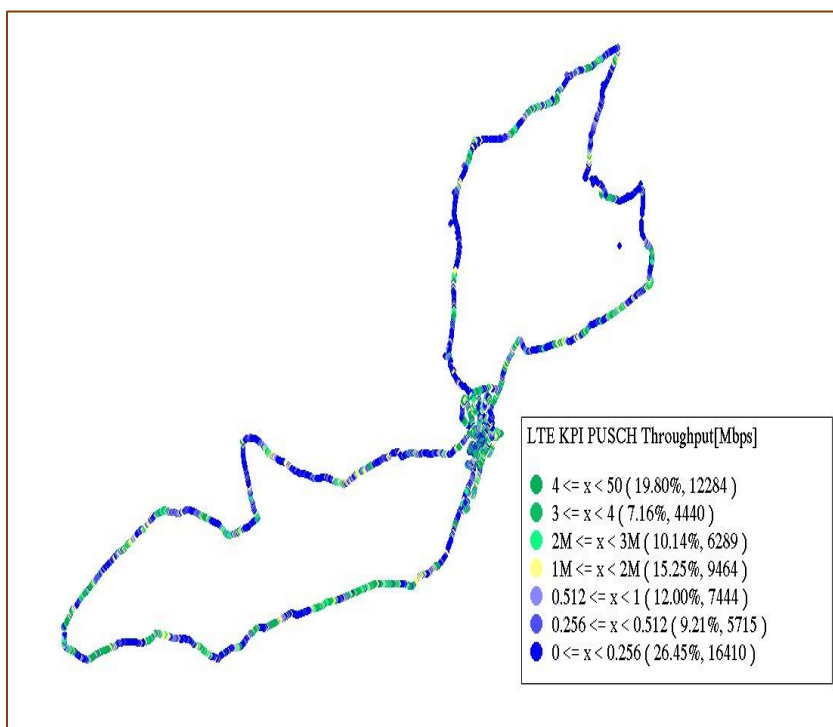
Upload throughput	No. of samples	% PDF
0 to 256 kbps Mbps	14,410	24.0%
250 to 512 kbps	5,715	33.5%
512 Kbps to 1 Mbps	7,444	45.9%
1 to 2 Mbps	9,464	61.7%
2 to 3 Mbps	6,289	72.1%
3 to 4 Mbps	4,440	79.5%
>4Mbps	12,284	100.0%
Total	60,046	

VIL
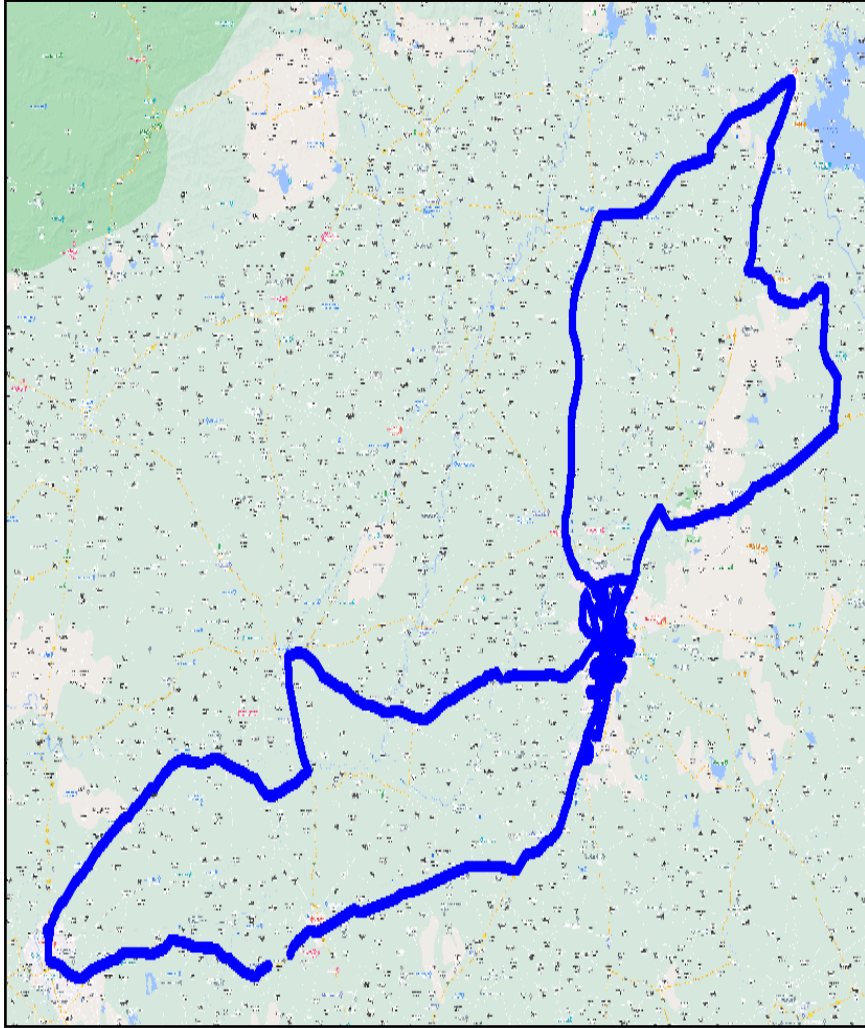
DL throughput	No. of Samples	%
0 to 1 Mbps	3506587	24.21
1 to 2 Mbps	793653	5.48
2 to 3 Mbps	816931	5.64
3 to 4 Mbps	816785	5.64
4 to 8 Mbps	2544234	17.57
8 to 12 Mbps	1815272	12.53
>12 Mbps	4190730	28.93
Total	14484192	100

Techology-2G	Amravati Railway Station	Nagpuri Gate Police Station	RTO Office	District Collector Office	Prof Ram Meghe Institute of Technology	Badnera Bus Stand
Download Speed (kbps)	0.04	0.21	0.17	0.21	0.11	0.09
Upload Speed (kbps)	0.03	0.22	0.13	0.19	0.09	0.12
Latency	NA	NA	NA	NA	NA	NA
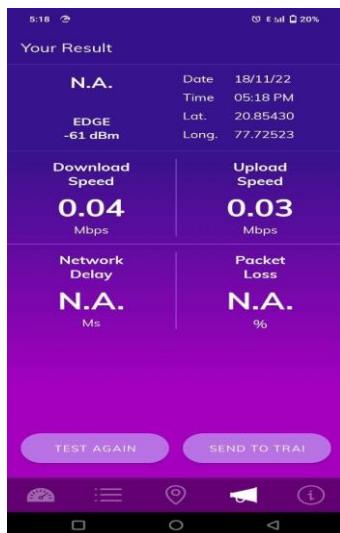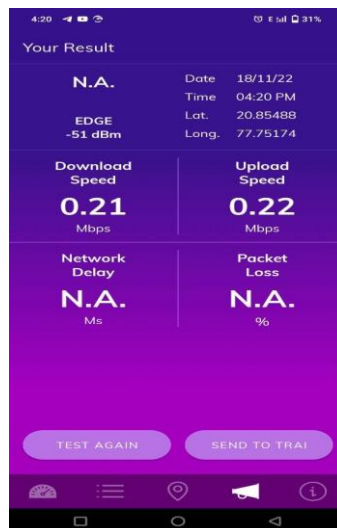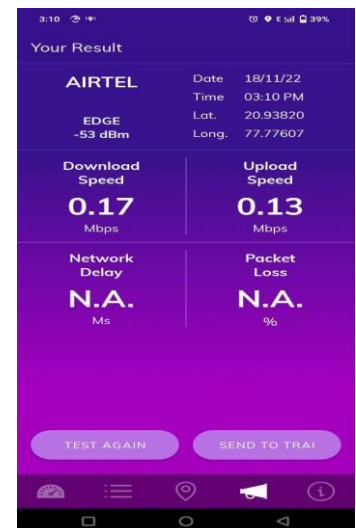
Amravati Railway Station

Nagpuri Gate Police Station

RTO Office

District Collector Office

Prof Ram Meghe Institute of Technology

Badnera Bus Stand

AIRTEL

V. TRAI My Speed App Test Details-4G
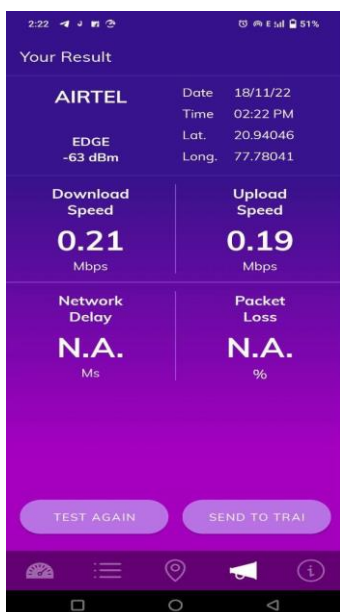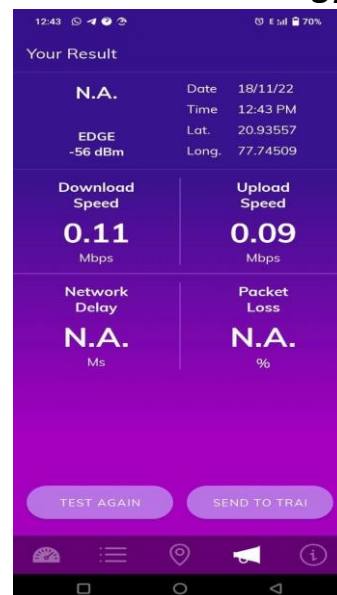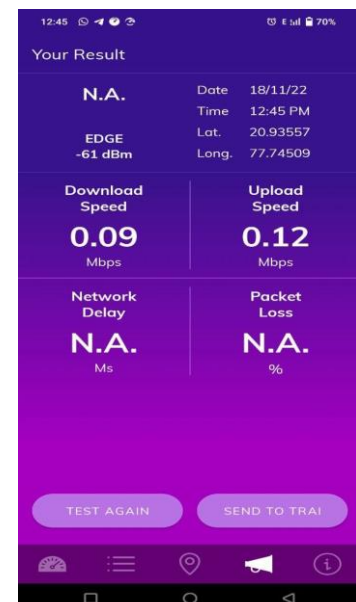
Techology-4G/VoLTE	Amravati Railway Station	Nagpuri Gate Police Station	RTO Office	District Collector Office	Prof Ram Meghe Institute of Technology	Badnera Bus Stand
Download Speed (Mbps)	94.88	72.38	31.81	59.84	72.91	48.90
Upload Speed (Mbps)	26.87	34.65	27.17	13.18	11.41	12.04
Latency	NA	NA	NA	NA	NA	NA
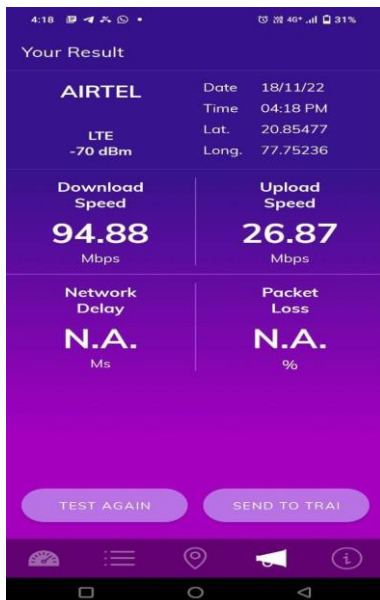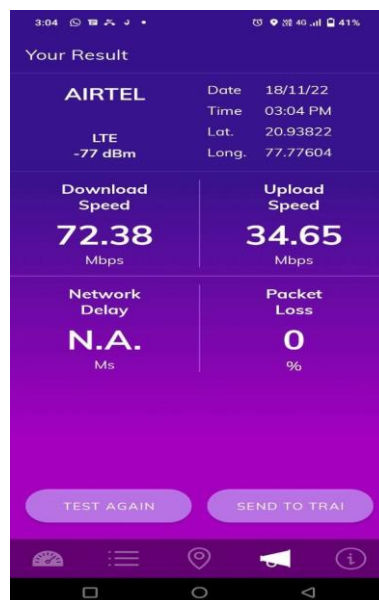
Amravati Railway Station

Nagpuri Gate Police Station
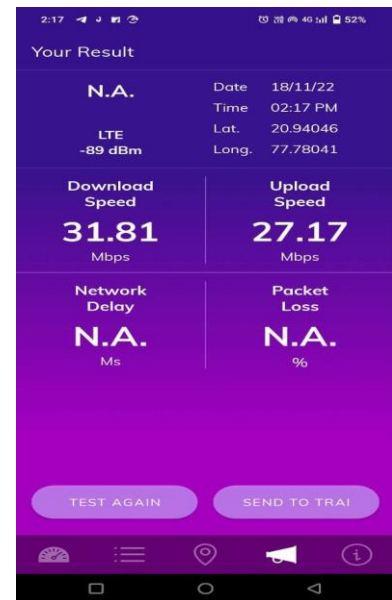
RTO Office

District Collector Office
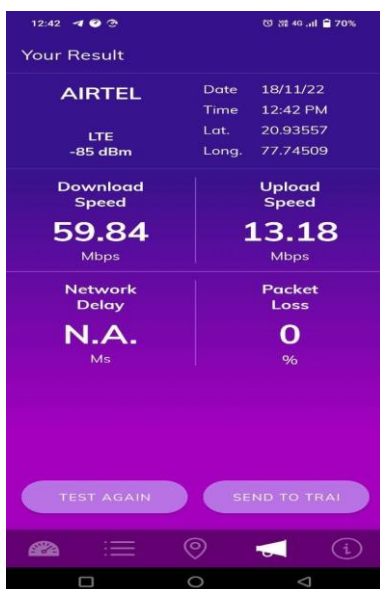
Prof Ram Meghe Institute of Technology
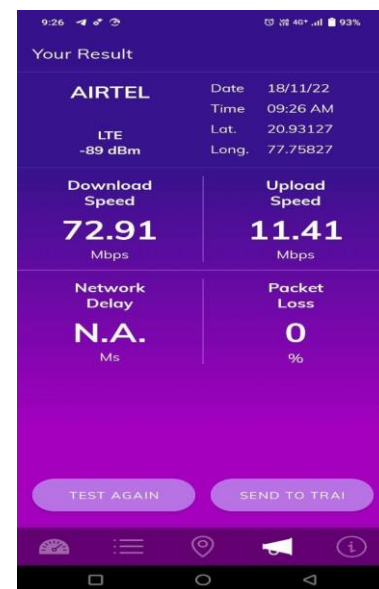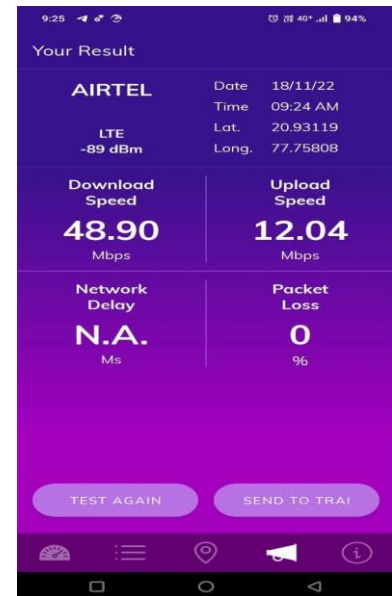
Badnera Bus Stand

V. TRAI MySpeed App Test Details-2G
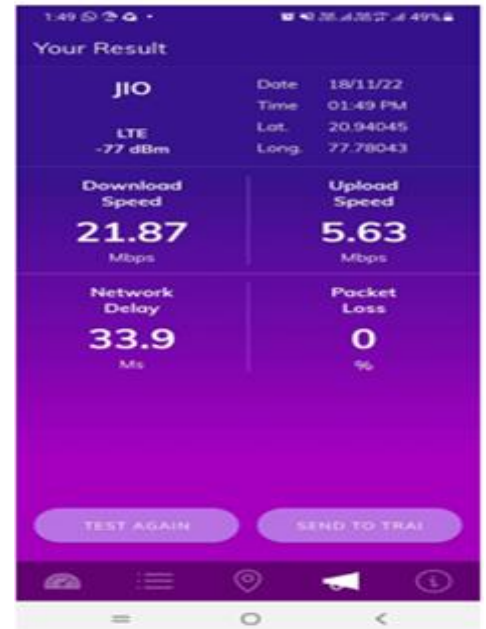
Techology-2G	Amravati Railway Station	Nagpuri Gate Police Station	RTO Office	District Collector Office	Prof Ram Meghe Institute of Technology	Badnera Bus Stand
Download Speed (Kbps)	0.01	0.04	0.05	0	0.01	0.03
Upload Speed (kbps)	0.00	0.02	0.06	0	0.04	0.01
Latency(ms)	716.4	172.5	NA	132.1	208.8	682.3

Amravati Railway Station

Nagpuri Gate Police Station

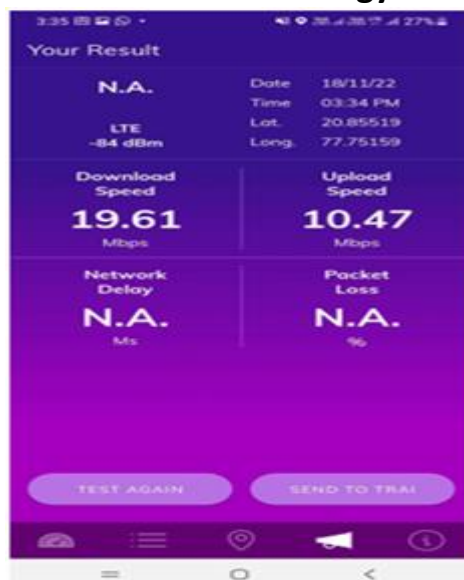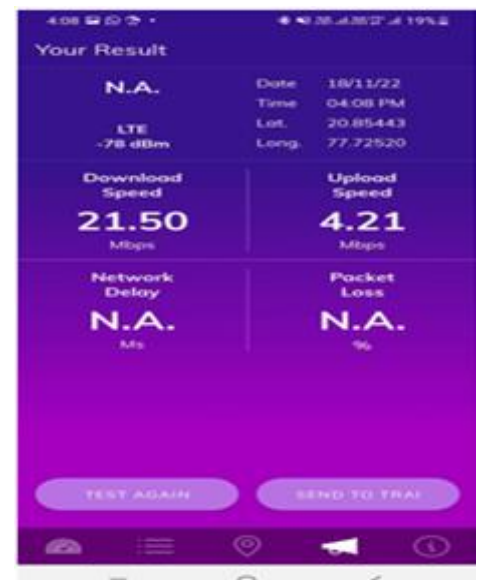
RTO Office

District Collector Office

Prof Ram Meghe Institute of Technology

Badnera Bus Stand

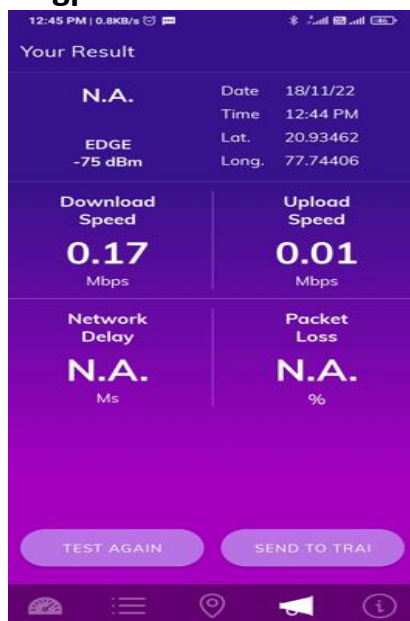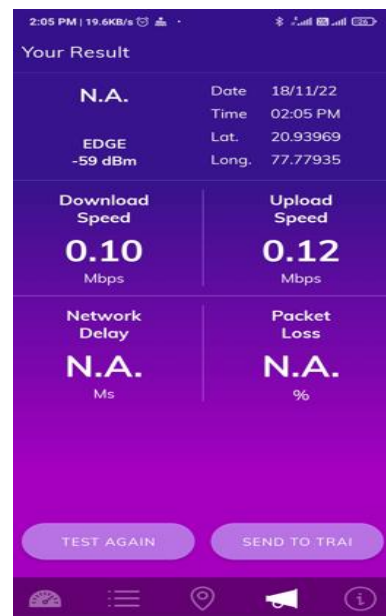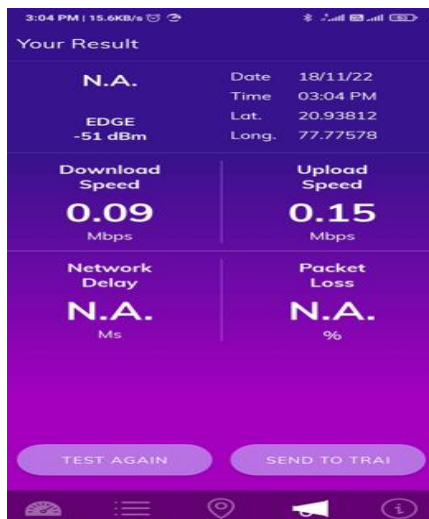| Techology-4G/VoLTE	Amravati Railway Station	Nagpuri Gate Police Station	RTO Office	District Collector Office	Prof Ram Meghe Institute of Technology	Badnera Bus Stand
Download Speed (Mbps)	3.89	0.33	2.05	3.89	6.16	5.86
Upload Speed (Mbps)	1.41	0.11	3.13	1.41	3.55	1.80
Latency(ms)	NA	NA	NA	NA	NA	NA

Amravati Railway Station
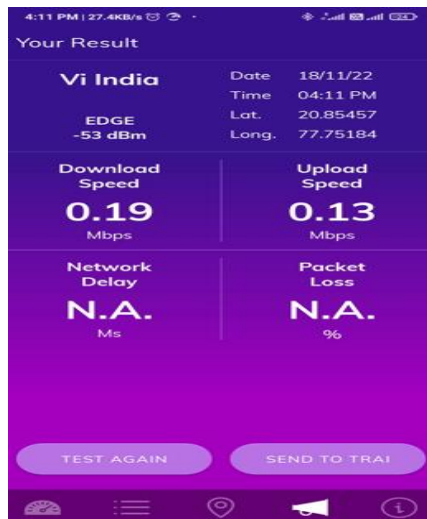

Nagpuri Gate Police Station

RTO Office

District Collector Office
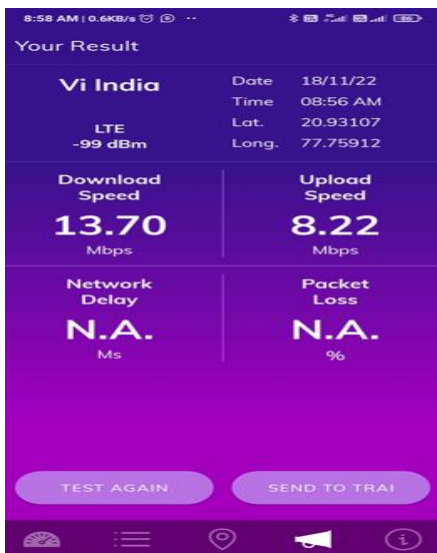

Prof Ram Meghe Institute of Technology

Badnera Bus Stand

Jio

Techology-4G	Amravati Railway Station	Nagpuri Gate Police Station	RTO Office	District Collector Office	Prof Ram Meghe Institute of Technology	Badnera Bus Stand
Download Speed (Mbps)	23.10	29.75	21.87	6.10	19.61	21.50
Upload Speed (Mbps)	5.10	11.83	5.63	13.45	10.47	4.21
Latency	NA	34.6	33.9	NA	NA	29.1

Amravati Railway Station

Nagpuri Gate Police Station

RTO Office

District Collector Office

Prof Ram Meghe Institute of Technology
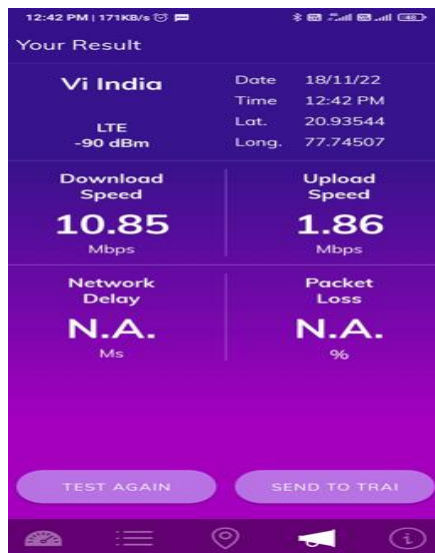

Badnera Bus Stand

Techology-2G	Amravati Railway Station	Nagpuri Gate Police Station	RTO Office	District Collector Office	Prof Ram Meghe Institute of Technology	Badnera Bus Stand
Download Speed (Mbps)	0.20	0.17	0.10	0.09	0.19	0.12
Upload Speed (Mbps)	0.18	0.01	0.12	0.15	0.13	0.16
Latency	NA	NA	NA	NA	NA	NA

Amravati Railway Station

Nagpuri Gate Police Station

RTO Office

District Collector Office

Prof Ram Meghe Institute of Technology

Badnera Bus Stand

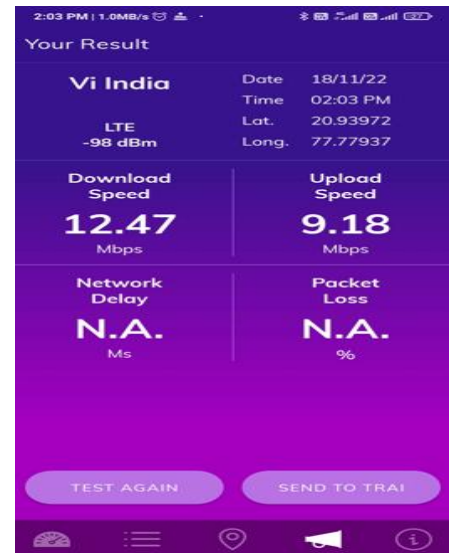| Techology-4G/VoLTE	Amravati Railway Station	Nagpuri Gate Police Station	RTO Office	District Collector Office	Prof Ram Meghe Institute of Technology	Badnera Bus Stand
Download Speed (Mbps)	13.70	10.85	12.47	21.99	44.64	16.95
Upload Speed (Mbps)	8.22	1.86	9.18	9.16	29.93	11.50
Latency	NA	NA	NA	NA	NA	NA

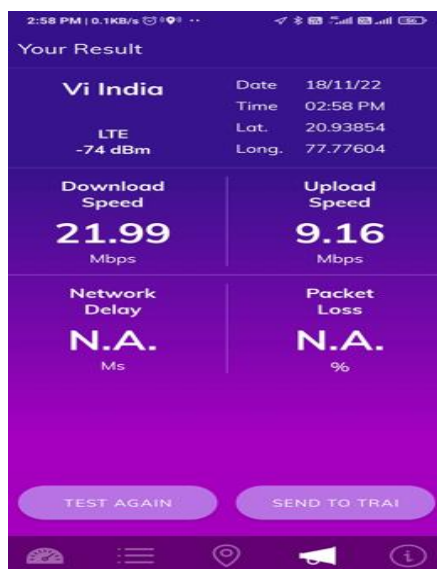**Amravati Railway Station**

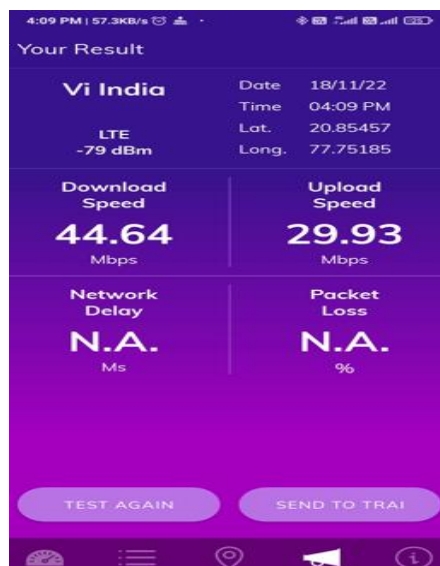**Nagpuri Gate Police Station**

RTO Office

District Collector Office

Prof Ram Meghe Institute of Technology

Badnera Bus Stand