Operator Assisted Drive Test Report

For

Kolhapur

11th to 14th Jun 2024
Kolhapur – Tasgoan – Karad - Peth (NH) - 170 Kms
(12th Jun 2024)
Kolhapur & Surrounding Area - 264 Kms
(11th & 13th to 14th Jun 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.
- All 2G/3G/4G TSPs have met the Rx Quality except BSNL 3G, JIO 4G and VIL 4G.
- All 2G/3G/4G TSPs have met the Mobility HOSR benchmark.
- All 2G/3G/4G TSPs have met the CSSR benchmark.

The Operator Assisted Drive Test has been carried out by the Regional Office, Bangalore with the help of Service Providers from **11th to 14th Jun 2024**. The drive test covered the route of **434 Kms** including NH/SH of **170 Kms** & **6** hotspots. Approximately **600** calls were made for each of the 7 networks: three 2G networks, one 3G network, and three 4G networks covering four TSPs.

Overview	Voice Summary	Data Summary

Overview

Regional Office, TRAI Bengaluru conducted Operator Assisted Drive **11th to 14th Jun 2024** covering various locations in **Kolhapur & Surrounding Region**. The performance of Airtel, BSNL, Vodafone Idea, and Jio were monitored across various technologies (2G, 3G, and 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 **434 KMs** including **NH/SH** of **170 Kms** over a period of 4 days from **11th to 14th Jun 2024**. Approximately 600 calls were made for each of the 7 networks: three 2G (Lock Mode) networks, one 3G (Dual mode) network, and three 4G networks covering 4 unique TSPs.

Data Tests: Dynamic data test (Test Data on Move) was conducted for 434 **KMs** including **NH/SH** of **170 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 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
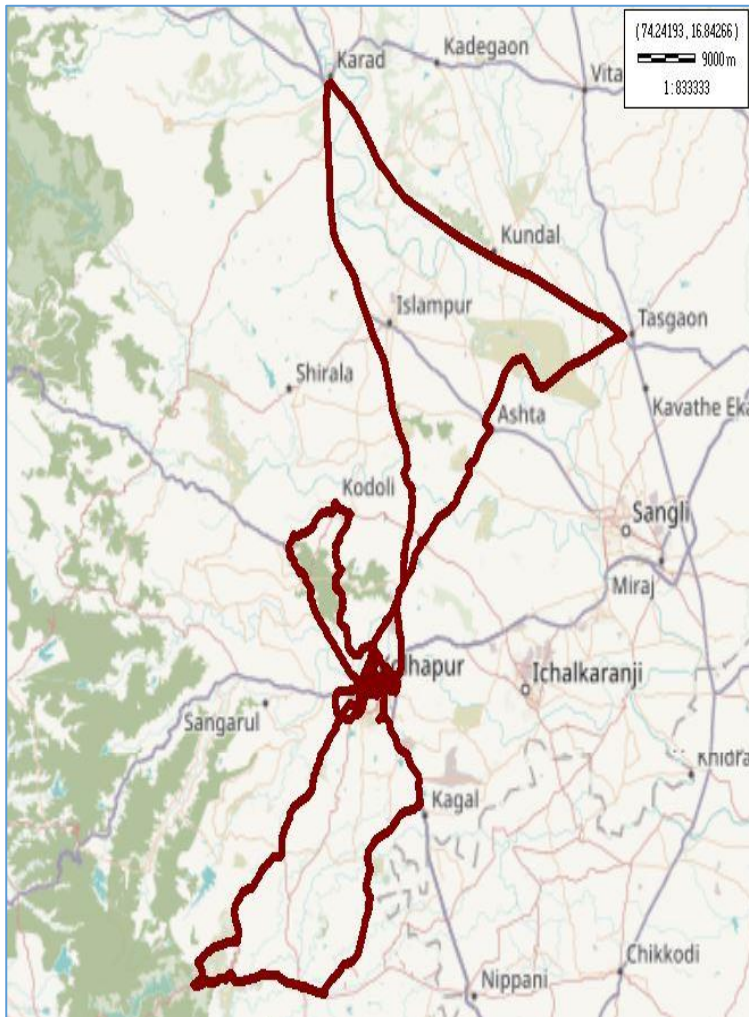
Areas covered	
Kolhapur CBS	Kolhapur City
Radhanagari	Medical Collage Warna
Admapur	Jotiba
Kagal	Kushire
Shivaji Park	Rashiwade
Kolhapur CBS	
Tasgaon	
Karad	
Peth Vadgaon	

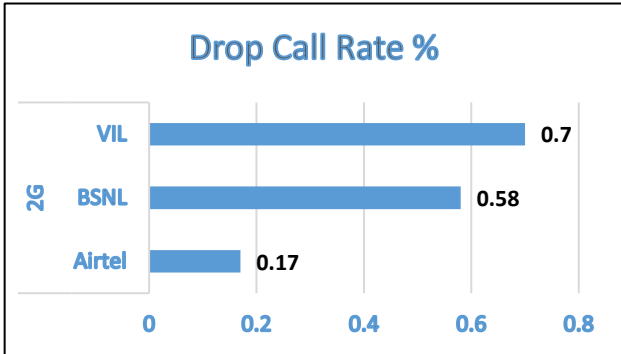## Data Service Test- Static Locations
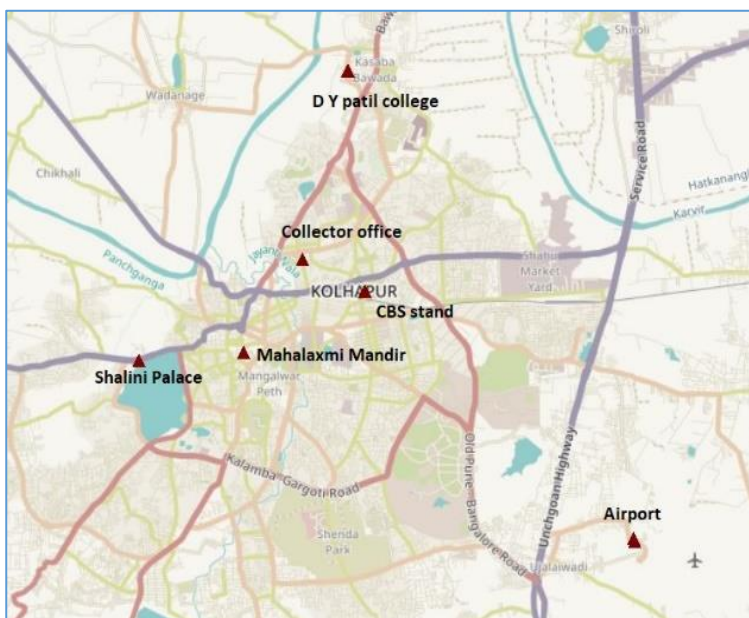
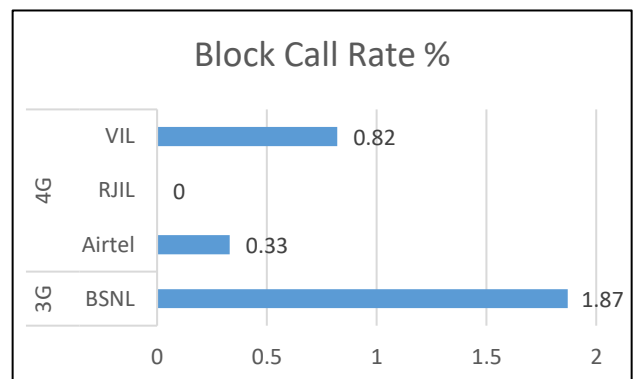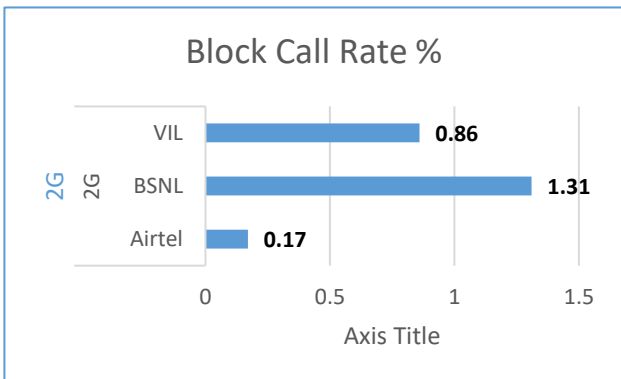| 1. Mahalaxmi Temple |
|---|
| 2. Shalini Palace |
| 3. D Y Patil Collage of Engineering. |
| 4. Office of District Collector |
| 5. Bus Stand Kolhapur (CBS) |
| 6. Kolhapur Airport |

Voice Calls

Key Observations

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

Drop Call Rate (%)

Drop Call Rate %

2G:
- VIL: 0.7
- BSNL: 0.58
- Airtel: 0.17

(axis: 0, 0.2, 0.4, 0.6, 0.8)

Drop Call Rate (%)

4G:
- VIL: 0.5
- RJIL: 0.31
- Airtel: 0.16

3G:
- BSNL: 1.7

(axis: 0, 0.5, 1, 1.5, 2)

Block Call Rate (%)

Block Call Rate %

2G:
- VIL: 0.86
- BSNL: 1.31
- Airtel: 0.17

(Axis Title: 0, 0.5, 1, 1.5)

Block Call Rate %

4G:
- VIL: 0.82
- RJIL: 0
- Airtel: 0.33

3G:
- BSNL: 1.87

(axis: 0, 0.5, 1, 1.5, 2)
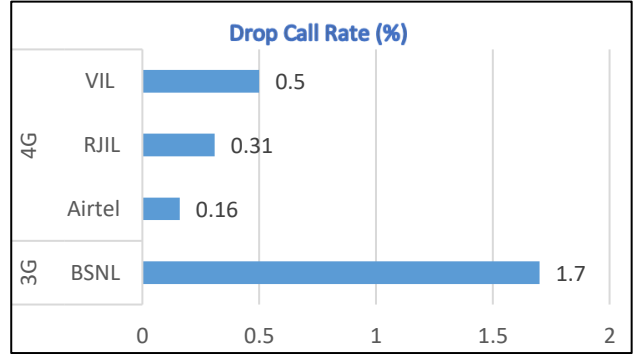
KPIs	2G			3G	4G		
	Airtel	**BSNL**	**VIL**	**BSNL**	**Airtel**	**RJIL**	**VIL**
Drop Call Rate %	0.17	0.58	0.7	1.7	0.16	0.31	0.5
Block Call Rate %	0.17	1.31	0.86	1.87	0.33	0	0.82

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.

Voice Calls

Coverage

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

TSPs	2G		
	Airtel	**BSNL**	**VIL**
Coverage%	84.26	73.71	76.01

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

TSPs	3G	4G		
	BSNL	**Airtel**	**JIO**	**VIL**
Coverage %	74.13	98.94	99.00	93.72

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

TSPs	3G	4G		
	BSNL	**Airtel**	**JIO**	**VIL**
Time Spent on 3G/4G%	98.31	100	100	98.05

Summary

Voice Call	2G		
	Airtel	**BSNL**	**VIL**
Call Attempt	589	689	579
Blocked Call Rate (%)	0.17	1.31	0.86
CSSR% (Accessibility)	99.83	98.25	99.14
Drop Call Rate (%)	0.17	0.58	0.7
Rx Quality (%)	96.35	97.06	95.37
Mobility HOSR (%)	99.65	98.81	99.5

Voice Call	3G/4G			
	BSNL 3G	**Airtel 4G**	**JIO 4G**	**VIL 4G**
Call Attempt	695	611	636	610
Blocked Call Rate (%)	1.87	0.33	0	0.82
CSSR% (Accessibility)	98.3	99.67	100	99.18
Drop Call Rate (%)	1.7	0.16	0.31	0.5
Rx Quality (%)	**94.08**	96.13	**86.4**	**85.19**
Mobility HOSR (%)	98.15	98.99	99.1	99.63

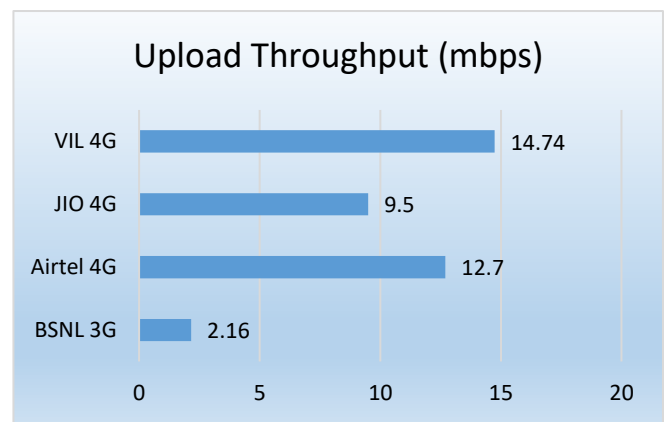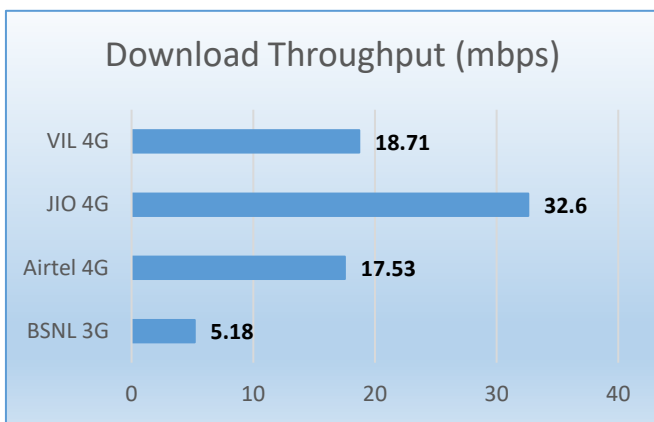# Data Services Static

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	18.71
JIO 4G	32.6
Airtel 4G	17.53
BSNL 3G	5.18

Upload Throughput (mbps)

Network	Value
VIL 4G	14.74
JIO 4G	9.5
Airtel 4G	12.7
BSNL 3G	2.16

Web Browsing Delay (sec)

Network	Value
VIL 4G	4.32
JIO 4G	1.58
Airtel 4G	5.59
BSNL 3G	4.26

Video Streaming Delay (sec)

Network	Value
VIL 4G	1.18
JIO 4G	0.3
Airtel 4G	0.39
BSNL 3G	4.68

Latency (msec)

Network	Value
VIL 4G	76.47
JIO 4G	58
Airtel 4G	37.17
BSNL 3G	76.3
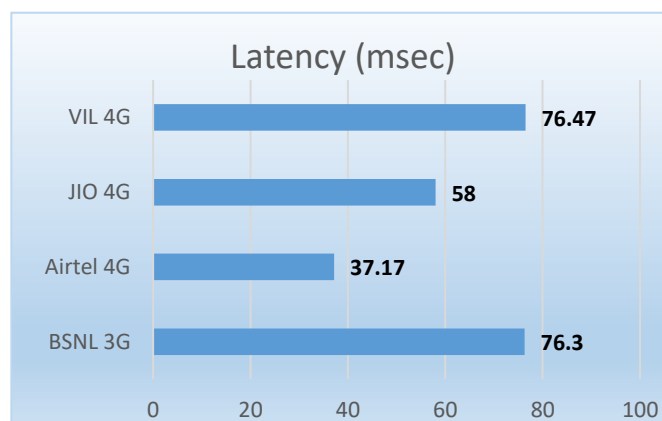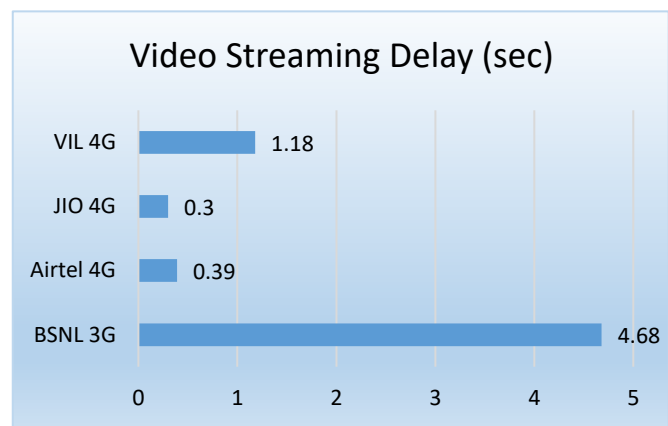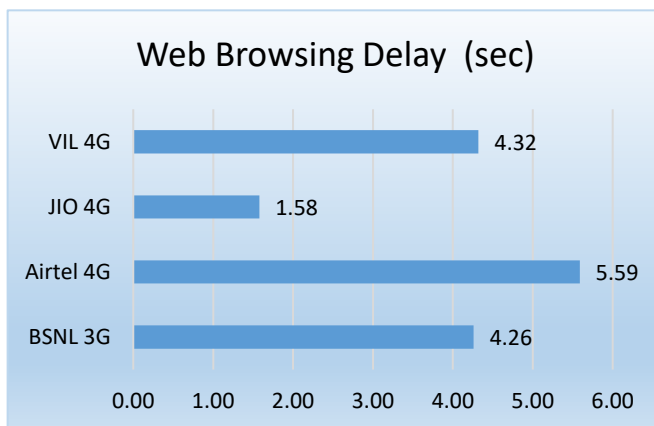
Summary

Data Services Static	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	14.92	115.43	133.49
Upload Throughput (kbps)	12.44	95.77	52.58
Web Browsing Delay (sec)	35.65	28.35	39.13
Latency (msec)	243.8	172.13	147.5

Data Services Static	3G/4G			
	BSNL 3G	Airtel 4G	JIO 4G	VIL 4G
Download Throughput (mbps)	5.18	17.53	32.6	18.71
Upload Throughput (mbps)	2.16	12.7	9.5	14.74
Web Browsing Delay (sec)	4.26	5.59	1.58	4.32
Video Streaming Delay (sec)	4.68	0.39	0.3	1.18
Latency (msec)	76.3	37.17	58	76.47

Data Services Dynamic (Data Test on Move)	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (mbps)	2.757	8.56	13.9	6.59
Upload Throughput (mbps)	1.645	4.37	3.1	3.93

Summary

Data Services Static – Shree Mahalakshmi Temple	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	16.51	129.85	144.3
Upload Throughput (kbps)	11.71	86.46	51.05
Web Browsing Delay (sec)	32.49	22.74	39.81
Latency (ms)	243.2	227	152.2

Data Services Static – Shree Mahalakshmi Temple	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	10.80	12.46	22.2	19.51
Upload Throughput (Mbps)	2.926	8.01	8.8	8.79
Web Browsing Delay (sec)	7.042	5.63	1.64	4.25
Video Streaming Delay (sec)	6.17	0.37	0.31	1
Latency (ms)	89.2	35.6	62	71.8

Data Services Static – Shalini Palace	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	13.532	129.4	140.26
Upload Throughput (kbps)	11.39	112.6	51.19
Web Browsing Delay (sec)	37.49	16.12	31.7
Latency (msec)	240.8	124.6	147.4

Data Services Static - Shalini Palace	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	5.18	14.77	69.98	4.43
Upload Throughput (Mbps)	2.2	8.86	9.4	3.07
Web Browsing Delay (sec)	3.25	5.51	1.4	4.91
Video Streaming Delay (sec)	4.6	0.38	0.26	1.71
Latency (ms)	69	35.6	53	87.4

Summary

Data Services Static – D Y Patil College of Engg & Technology	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	11.64	128.80	137.5
Upload Throughput (kbps)	11.31	125.20	63.69
Web Browsing Delay (sec)	30.69	24.72	44.02
Latency (ms)	244	172.80	144.4

Data Services Static – D Y Patil College of Engg & Technology	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	3.25	13.62	13.1	2.35
Upload Throughput (Mbps)	1.43	12.37	20.3	12.29
Web Browsing Delay (sec)	3.97	5.6	1.6	4.65
Video Streaming Delay (sec)	4.39	0.43	0.32	1.16
Latency (ms)	76.60	39	62	78

Data Services Static – Office of District Colletor	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	16.26	111.2	143.58
Upload Throughput (kbps)	14.57	91.8	51.45
Web Browsing Delay (sec)	38.95	30.34	40.11
Latency (msec)	241	144	145.6

Data Services Static – Office of District Colletor	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	4.34	23.03	40.2	40.7
Upload Throughput (Mbps)	2.48	12.32	5.7	22.99
Web Browsing Delay (sec)	3.46	5.51	1.64	4.08
Video Streaming Delay (sec)	3.6	0.38	0.3	1.05
Latency (ms)	75.8	38	59	73.8

Summary

Data Services Static – Bus Stand Kolhapur	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	17.82	93.60	164.56
Upload Throughput (kbps)	14.7	78.00	47.51
Web Browsing Delay (sec)	36.8	34.48	39.48
Latency (ms)	247.6	166.20	145.2

Data Services Static – Bus Stand Kolhapur	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	4.11	18.24	26.9	12.67
Upload Throughput (Mbps)	1.81	16.2	5.9	21.31
Web Browsing Delay (sec)	3.28	5.74	1.52	4.12
Video Streaming Delay (sec)	3.18	0.38	0.27	1.23
Latency (ms)	73.2	38	59	74

Data Services Static – Kolhapur Airport	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	13.77	101.40	70.76
Upload Throughput (kbps)	10.96	81.00	50.61
Web Browsing Delay (sec)	37.48	41.72	39.68
Latency (msec)	246.6	198.20	150.2

Data Services Static – Kolhapur Airport	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	3.38	23.09	23.14	32.59
Upload Throughput (Mbps)	2.11	18.44	6.84	20.02
Web Browsing Delay (sec)	4.53	5.54	1.7	3.89
Video Streaming Delay (sec)	6.11	0.38	0.33	0.93
Latency (ms)	74	36	55	73.8

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	84.26
BSNl 2G	73.71
VIL 2G	76.01
BSNL 3G	74.13
Airtel 4G	98.94
Jio 4G	99.00
VIL 4G	93.72

Coverage Distribution %

	Airtel 2G	BSNl 2G	VIL 2G	BSNL 3G	Airtel 4G	Jio 4G	VIL 4G
2G:[Max, >=-75] / 3G:Max, >=-70 / VoLTE: >=-80	53.61	39.76	44.03	22.85	25.54	40.29	21.05
2G:[-75, >=-85] / 3G:[-70,>=-80] / VoLTE:[-80,>=-90]	30.65	33.95	31.98	24.88	32.32	40.61	28.13
2G:[-85, >=-95) / 3G:[-80,>=-90] / VoLTE:[-90,>-=-110]	15.23	21.58	18.91	26.4	41.08	18.08	44.54
2G:[-95, >=Min] / 3G:[[-90,>=Min] / VoLTE:[[-110,>=Min]	0.51	4.72	5.08	25.87	1.06	1.02	6.28
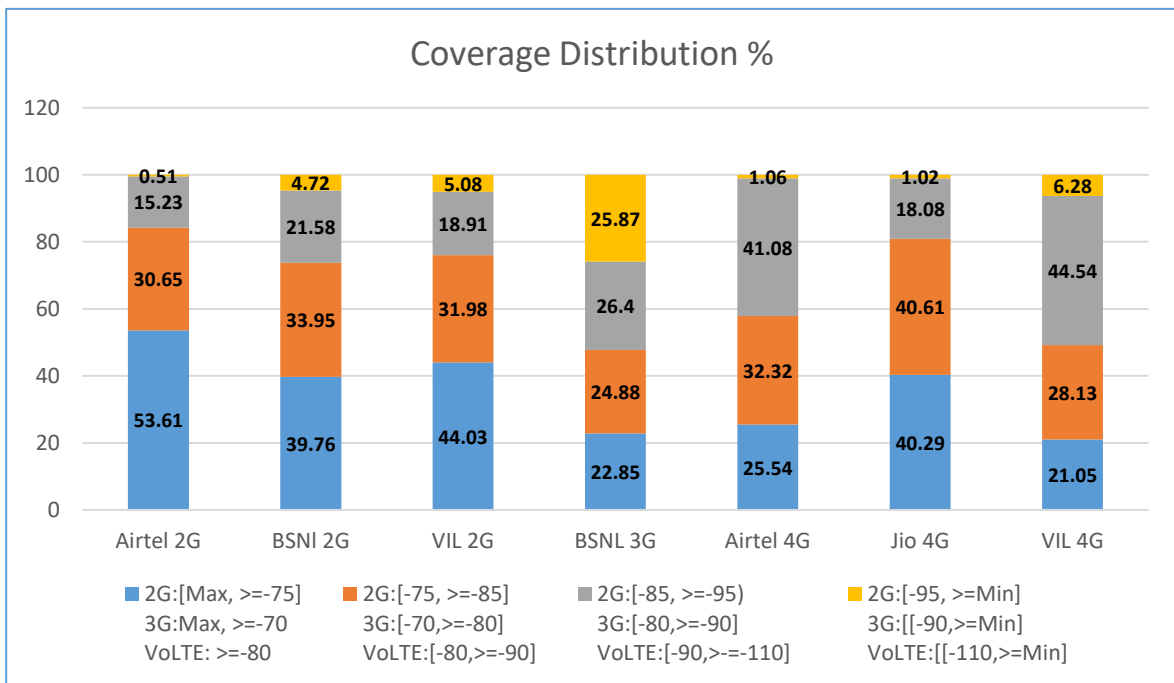
AIRTEL

Technology	Coverage Rate %
2G	84.26
4G	98.94

2G	**4G**

2G Rx Level All Day
- ● -110 - -95 [47730]
- ● -95 - -85 [1418086]
- ● -85 - -75 [2854675]
- ● -75 - 0 [4993112]

4G RSRP All Day
- ● -140 - -110 [150300]
- ● -110 - -90 [5807958]
- ● -90 - -80 [4569461]
- ● -80 - 0 [3611391]
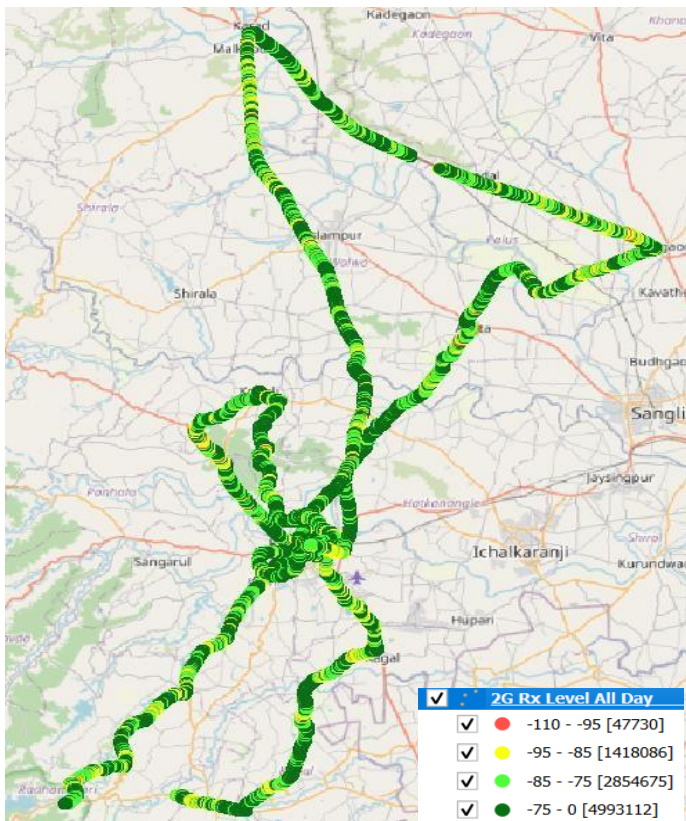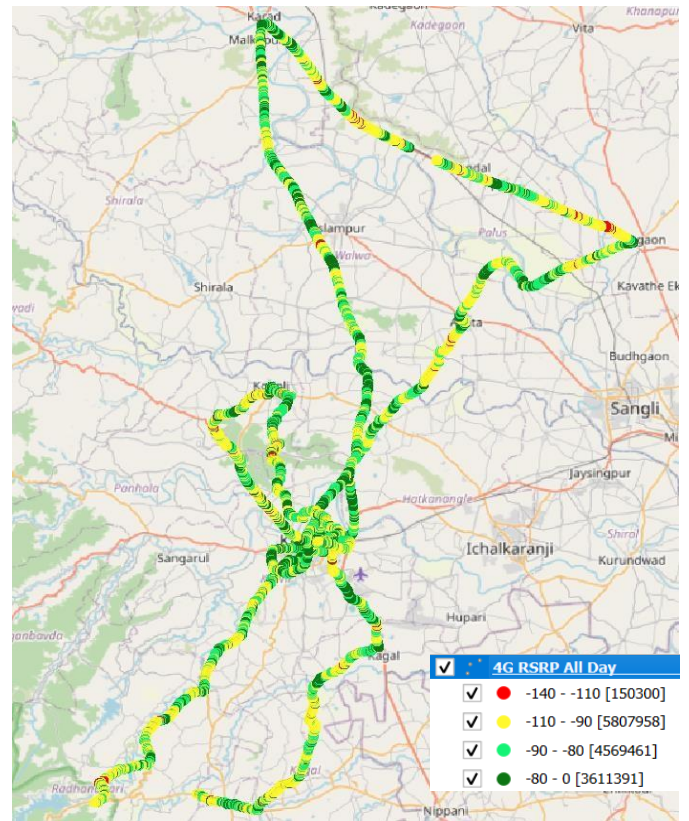
2G		
Overall RxLevel	**# Samples**	**% PDF**
[Max, >=-75]	4993112	53.61
[-75, >=-85)	2854675	30.65
[-85, >=-95)	1418086	15.23
[-95, >=Min)	47730	0.51
Total	9313603	100

4G/VoLTE		
Overall RSRP	**# Samples**	**% PDF**
[Max, >=-80]	3611391	25.54
[-80, >=-90)	4569461	32.32
[-90, >=-110)	5807958	41.08
[-110, >=Min)	150300	1.06
Total	14139110	100

BSNL

Technology	Coverage Rate %
2G	73.71
3G	74.13

2G	3G
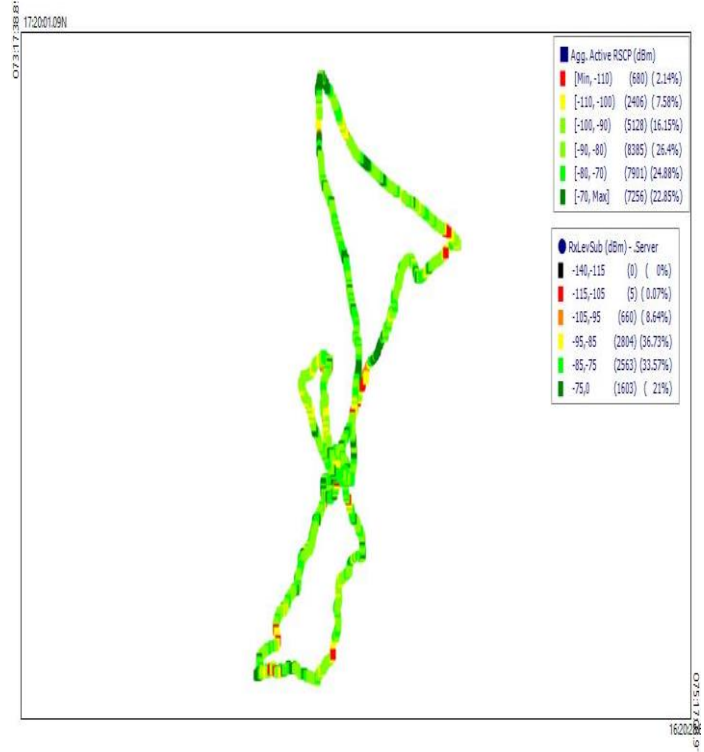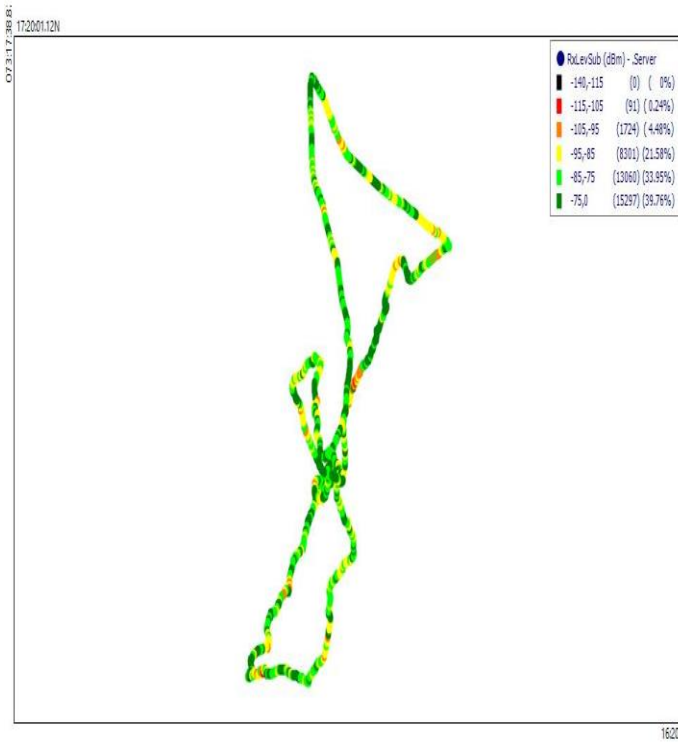
2G

3G

Overall RxLevel	# Samples	% PDF
[Max, >=-75]	15297	39.76
[-75, >=-85]	13060	33.95
[-85, >=-95]	8301	21.58
[-95, >=Min]	1815	4.72
Total	38473	100

Overall RSCP	# Samples	% PDF
[Max, >=-70]	7256	22.85
[-70, >=-80]	7901	24.88
[-80, >=-90]	8385	26.4
[-90, >=Min]	8214	25.87
Total	31756	100

JIO

Technology	Coverage Rate %
4G	99.0
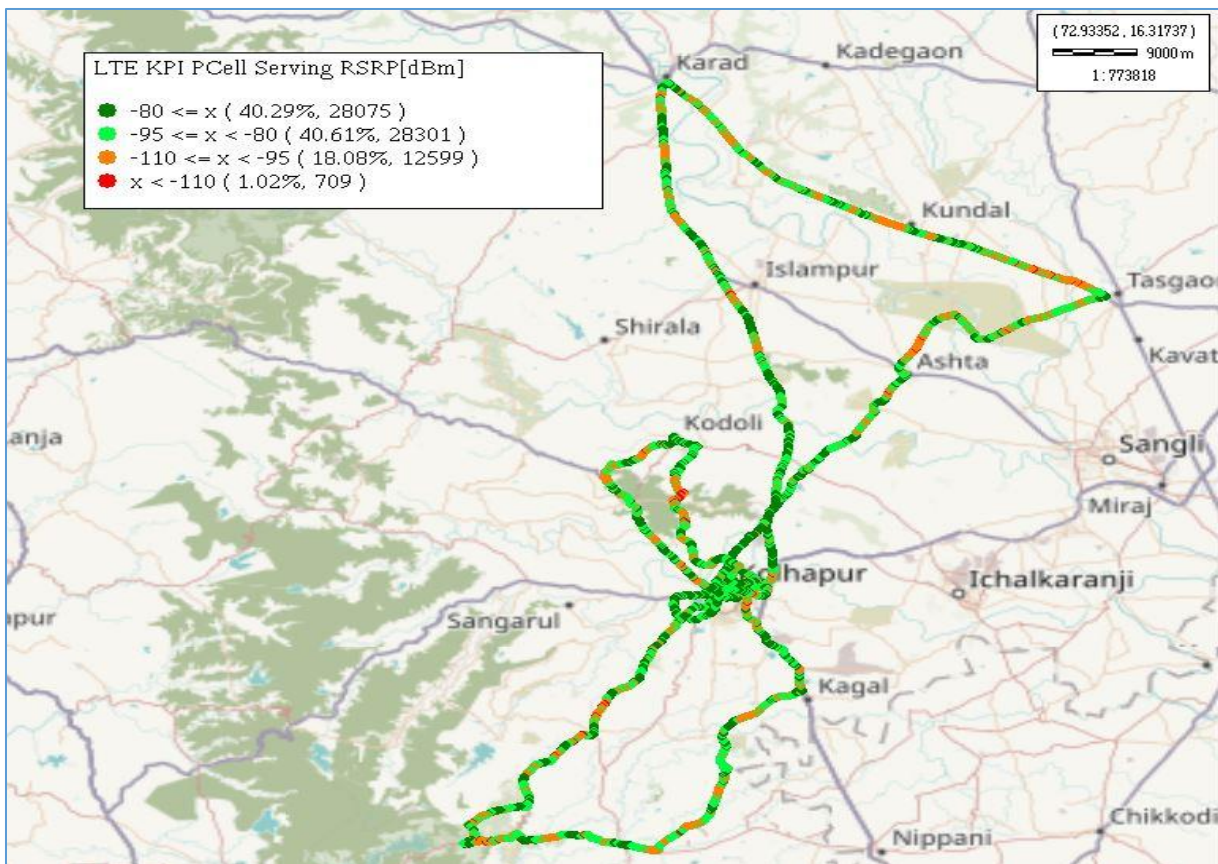
4G		
Overall RSRP	**# Samples**	**% PDF**
[Max, >=-80]	28075	40.29
[-80, >=-90)	28301	40.61
[-90, >=-110)	12599	18.08
[-110, >=Min)	709	1.02
Total	69684	100

VIL

Technology	Coverage Rate %
2G	76.01
4G	93.72
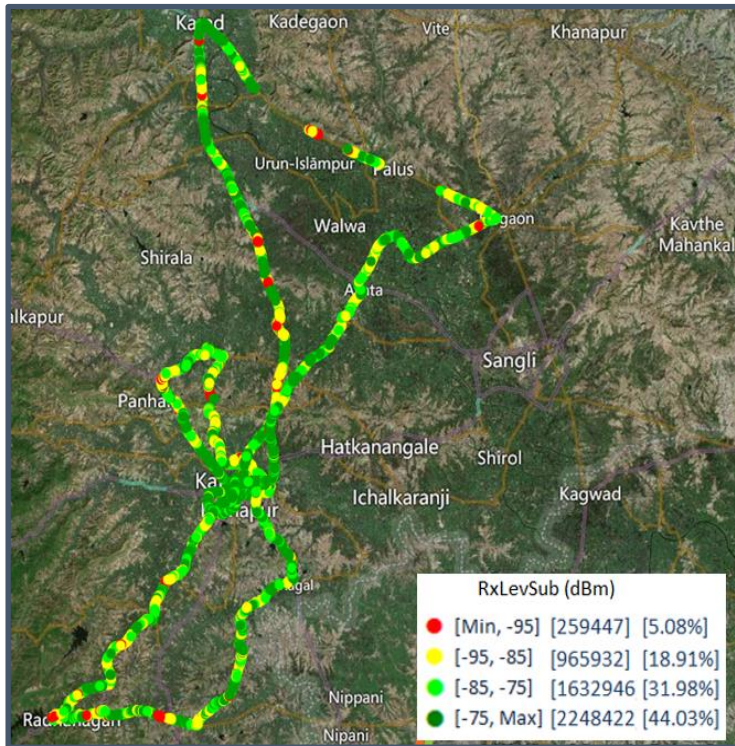
2G	4G

2G
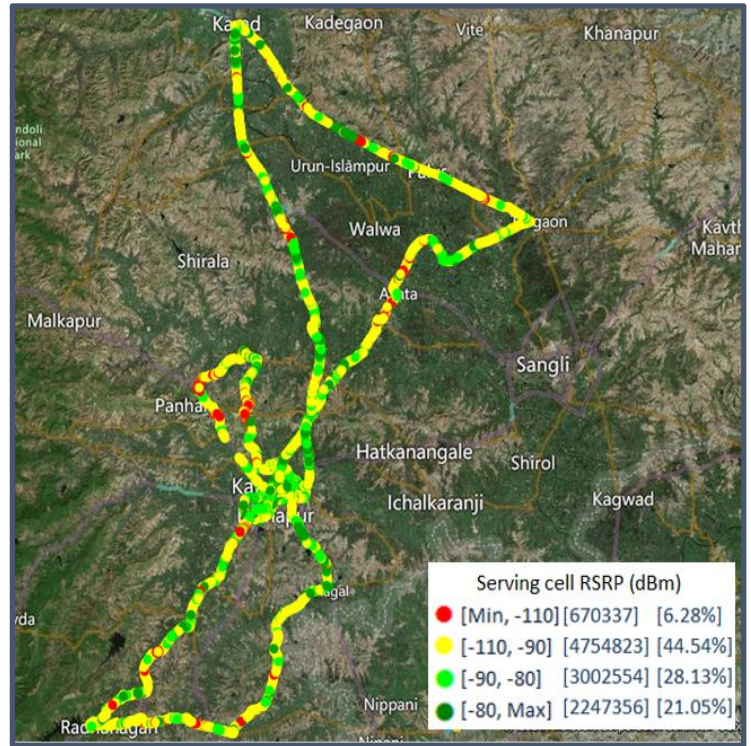
Overall RxLevel	# Samples	% PDF
[Max, >=-75]	2248422	44.03
[-75, >=-85)	1632946	31.98
[-85, >=-95)	965932	18.91
[-95, >=Min)	259447	5.08
Total	5106747	100

4G/VoLTE

Overall RSRP	# Samples	% PDF
[Max, >=-80]	2247356	21.05
[-80, >=-90)	3002554	28.13
[-90, >=-110)	4754823	44.54
[-110, >=Min)	670337	6.28
Total	10675070	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	96.35
BSNl 2G	97.06
VIL 2G	95.37
BSNL 3G	94.08
Airtel 4G	96.13
Jio 4G	86.40
VIL 4G	85.19

Rx Quality

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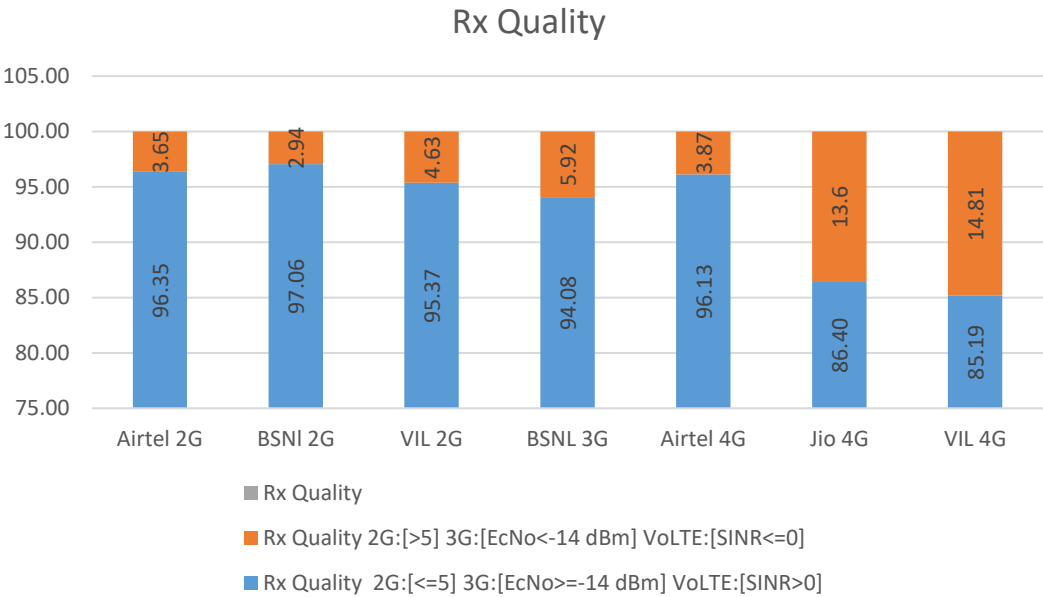
Airtel

Technology	Rx Quality %
2G	96.35
4G	96.13

2G	4G
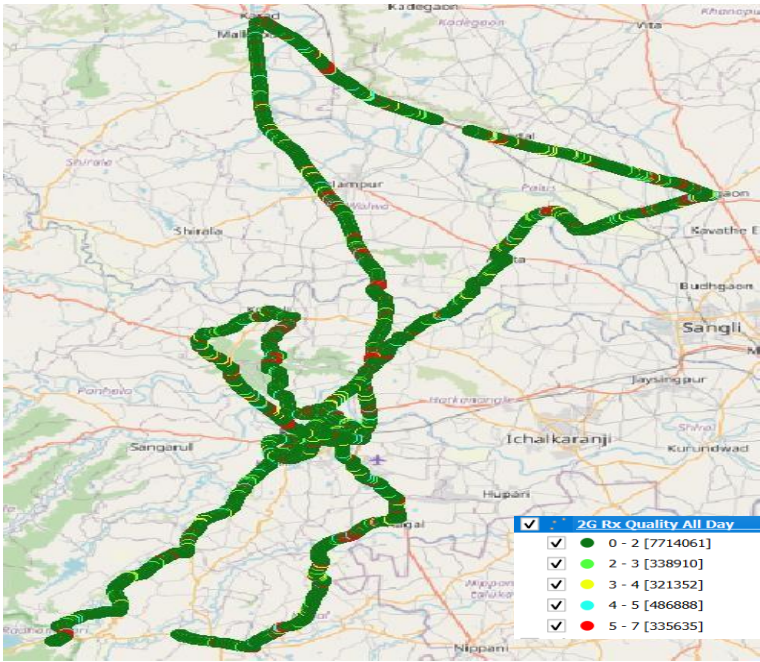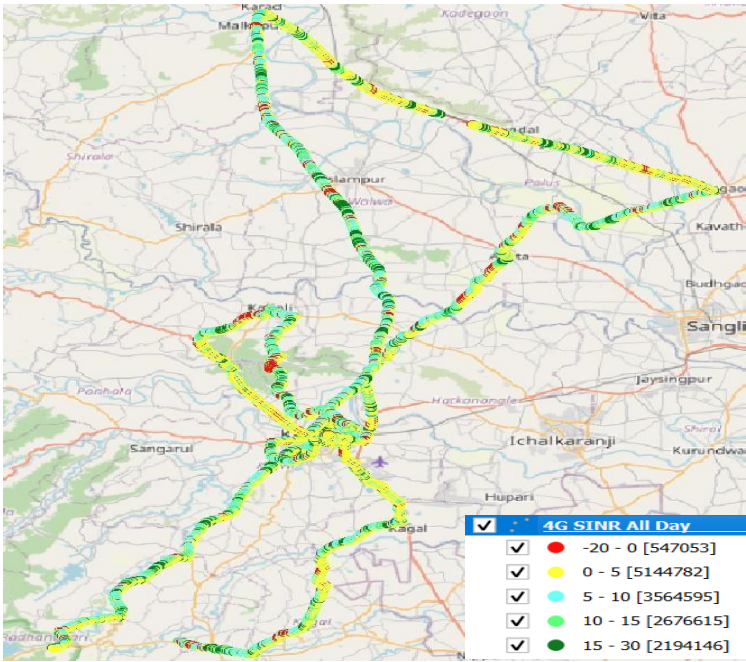
Overall Rx Quality	# Samples	% PDF
(Min, <=2)	7714061	83.88
(2, <=3)	338910	3.69
(3 , <=4)	321352	3.49
(4 , <=5)	486888	5.29
(5 , <=Max)	335635	3.65
Total	9196846	100

Overall SINR	# Samples	% PDF
(Min, <=0)	547053	3.87
(0, <=5)	5144782	36.42
(5, <=10)	3564595	25.23
(10, <=15)	2676615	18.95
(15, <=Max)	2194146	15.53
Total	14127191	100

BSNL

Technology	Rx Quality %
2G	97.06
3G	94.08

2G
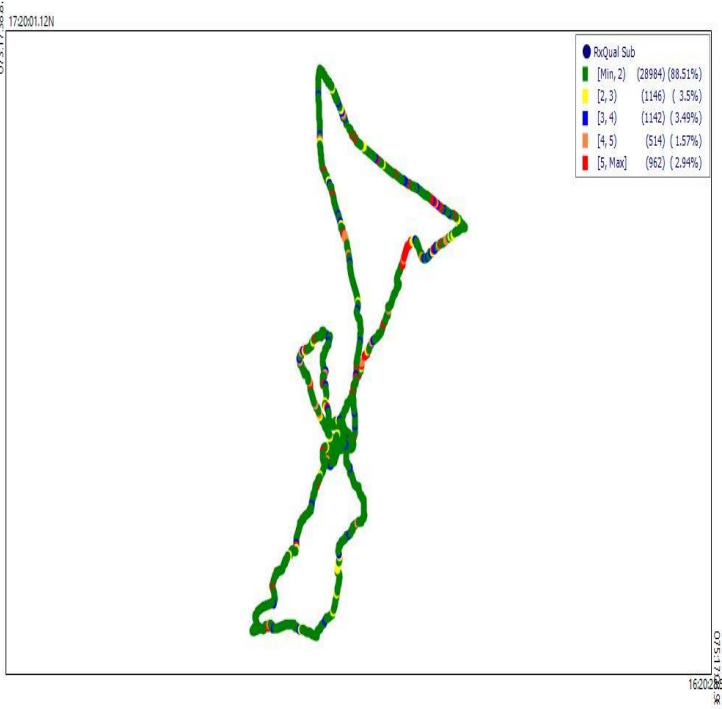
3G
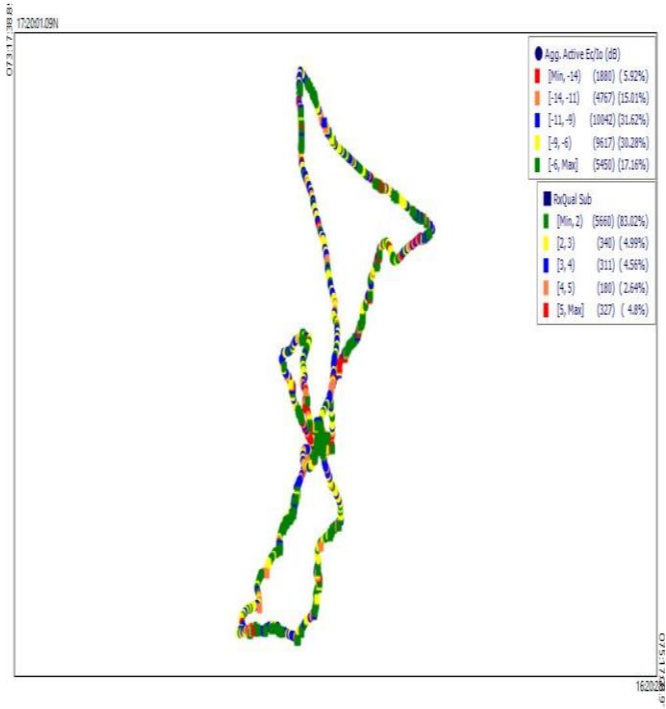
Overall Rx Quality	# Samples	% PDF
(Min, <=2)	28984	88.51
(2, <=3)	1146	3.5
(3 , <=4)	1142	3.49
(4 , <=5)	514	1.57
(5 , <=Max)	962	2.94
Total	32748	100

Overall EcNo	# Samples	% PDF
(Max, <=-6)	5450	17.16
(-6, <=-9)	9617	30.28
(-9, <=-11)	10042	31.62
(-11, <=-14)	4767	15.01
(-14, <= Min)	1880	5.92
Total	31756	100

JIO

Technology	Rx Quality (%)
4G	86.4

LTE KPI PCell SINR[dB]
- 15 <= x (18.39%, 12942)
- 10 <= x < 15 (19.12%, 13455)
- 5 <= x < 10 (24.80%, 17458)
- 0 <= x < 5 (24.13%, 16984)
- x < 0 (13.56%, 9547)

(72.89633 , 17.44231)
9000 m
1 : 847599
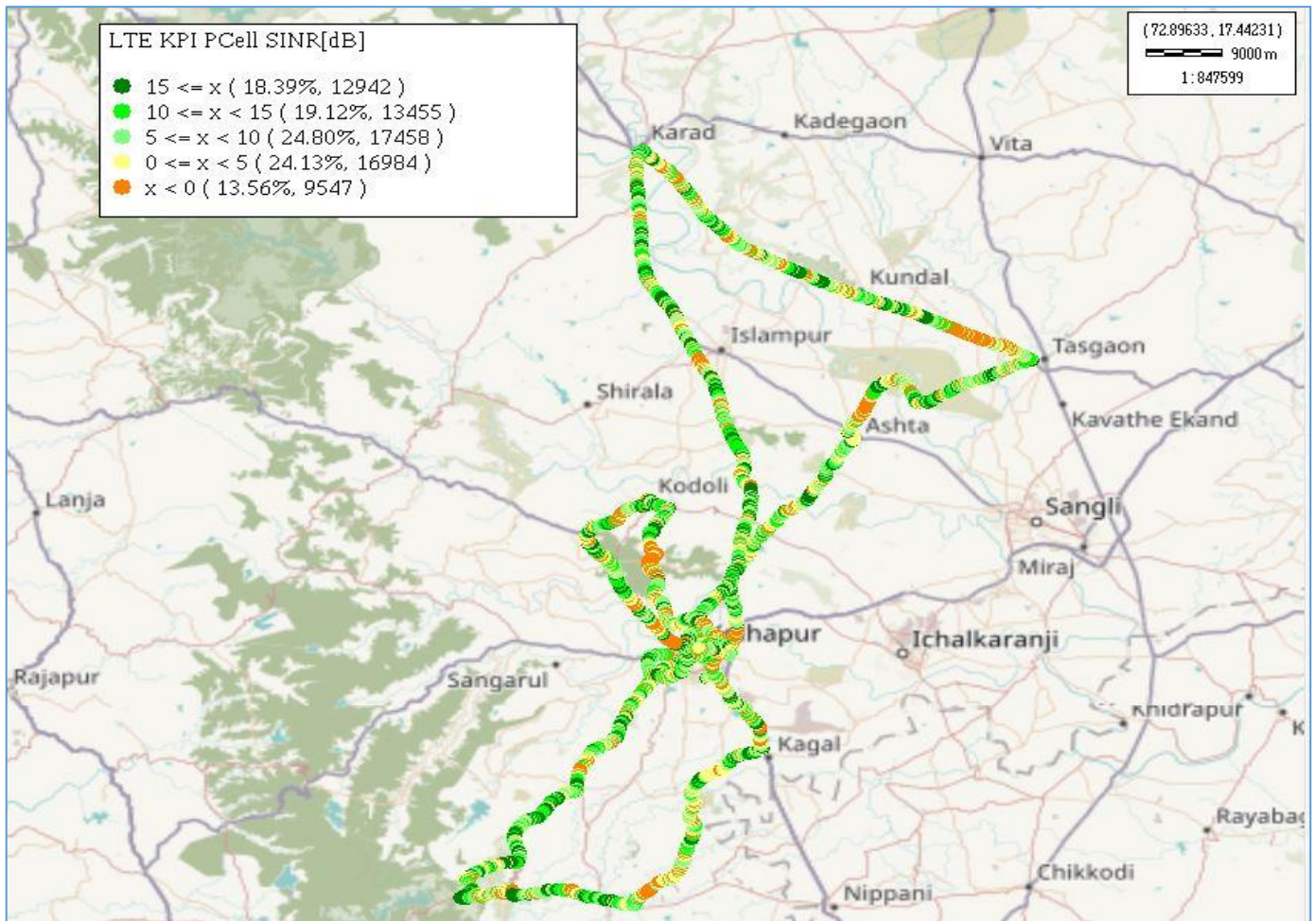
Overall SINR	# Samples	% PDF
(Min, <=0)	9547	13.56
(0, <=5)	16984	24.13
(5, <=10)	17458	24.80
(10, <=15)	13455	19.12
(15, <=Max)	12942	18.39
Total	70386	100

VIL

Technology	Rx Quality %
2G	95.37
4G	85.19

2G	**4G**
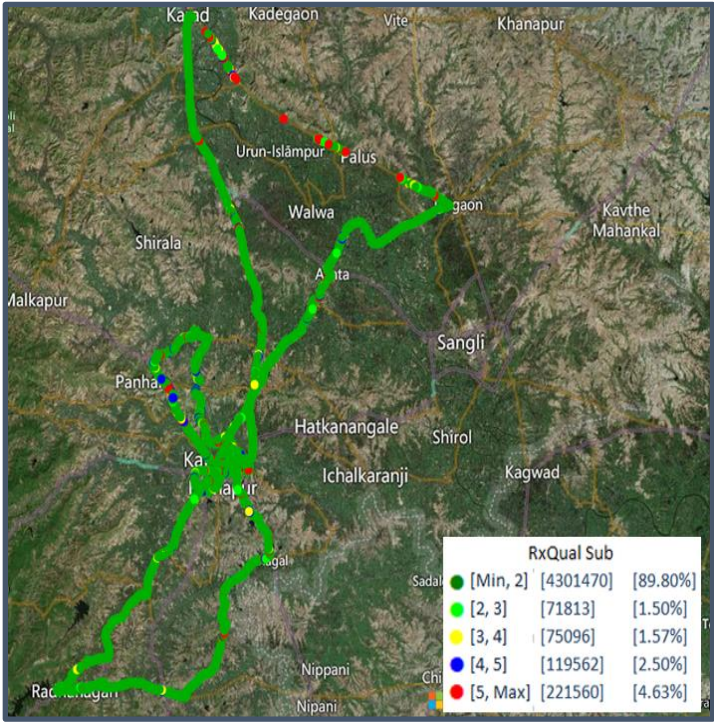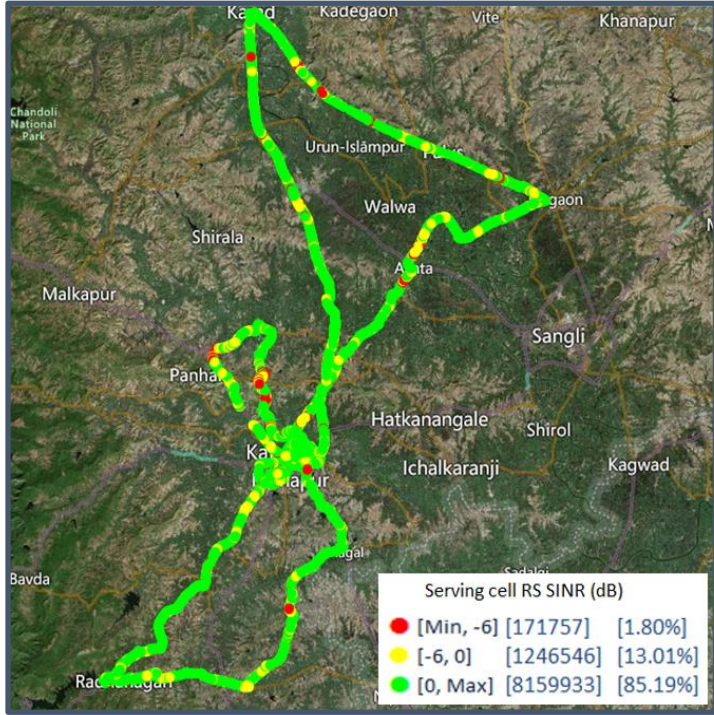
Overall Rx Quality	# Samples	% PDF
(Min, <=2)	4301470	89.80
(2, <=3)	71813	1.50
(3 , <=4)	75096	1.57
(4 , <=5)	119562	2.50
(5 , <=Max)	221560	4.63
Total	4789501	100

Overall SINR	# Samples	% PDF
(Min, <=0)	1418303	14.81
(0, <=5)	2734337	28.55
(5, <=10)	2160205	22.55
(10, <=15)	1888327	19.71
(15, <=Max)	1377064	14.38
Total	9578236	100

TSP	Time Spent on 3G/4G %
BSNL 3G	98.31
Airtel 4G	100
Jio 4G	100
VIL 4G	98.05

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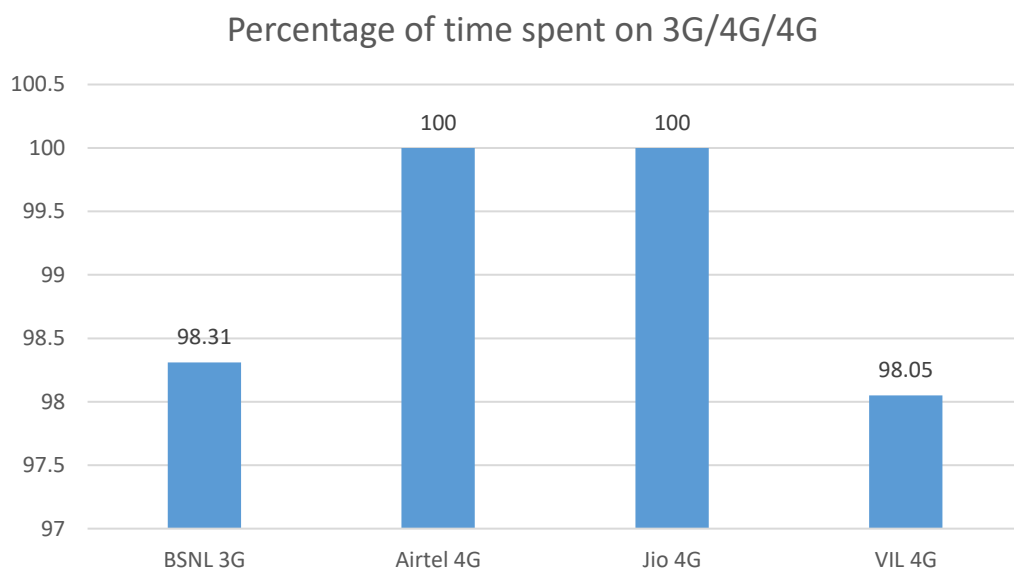
Airtel

Technology	Time Spent %
4G	100
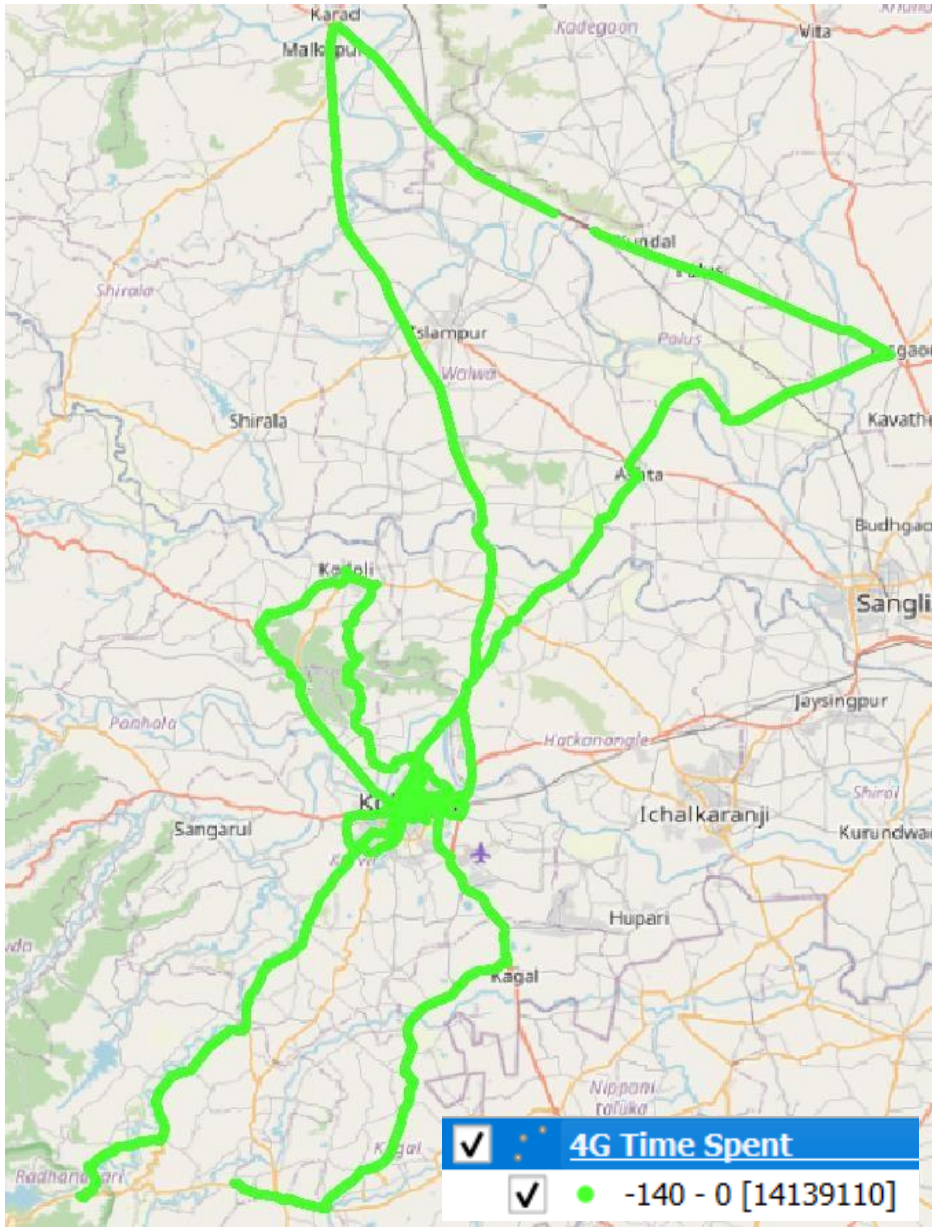
BSNL

Technology	Time Spent %
3G	98.31
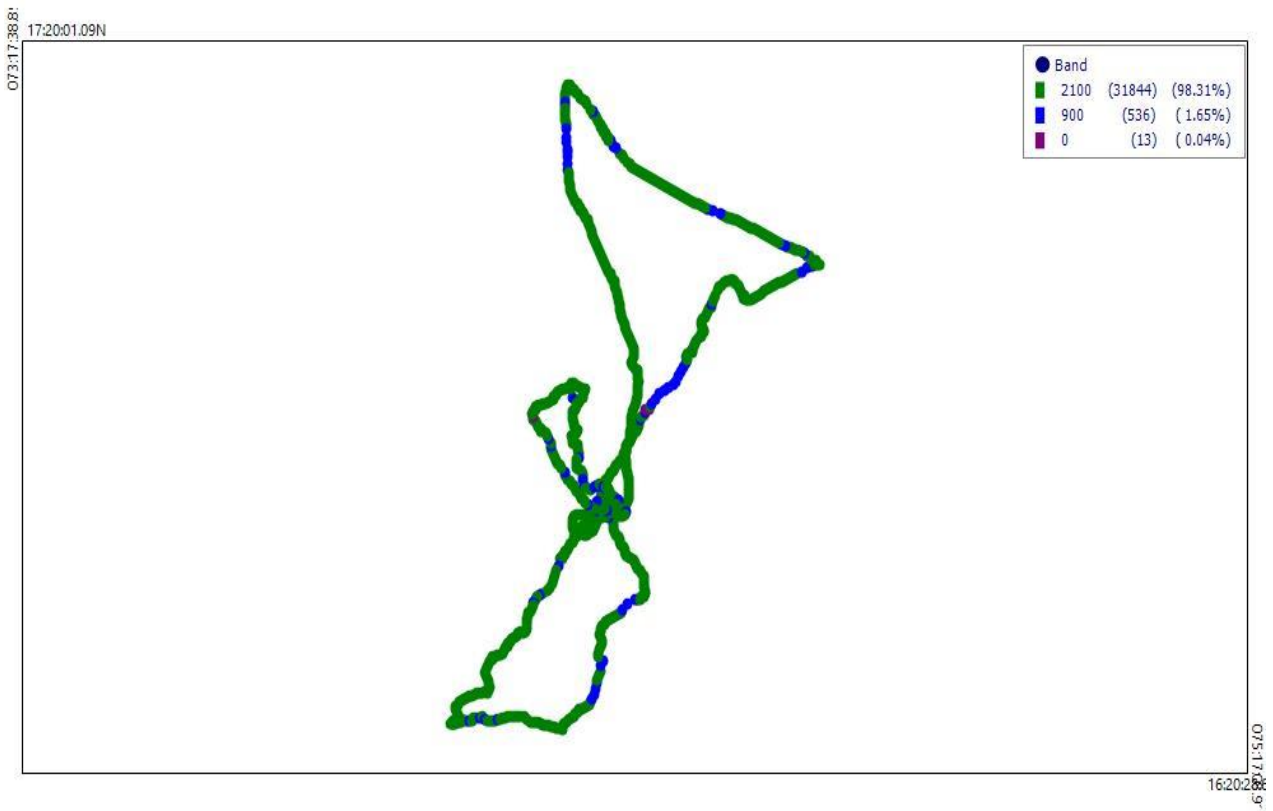
JIO

Technology	Time Spent %
4G	100
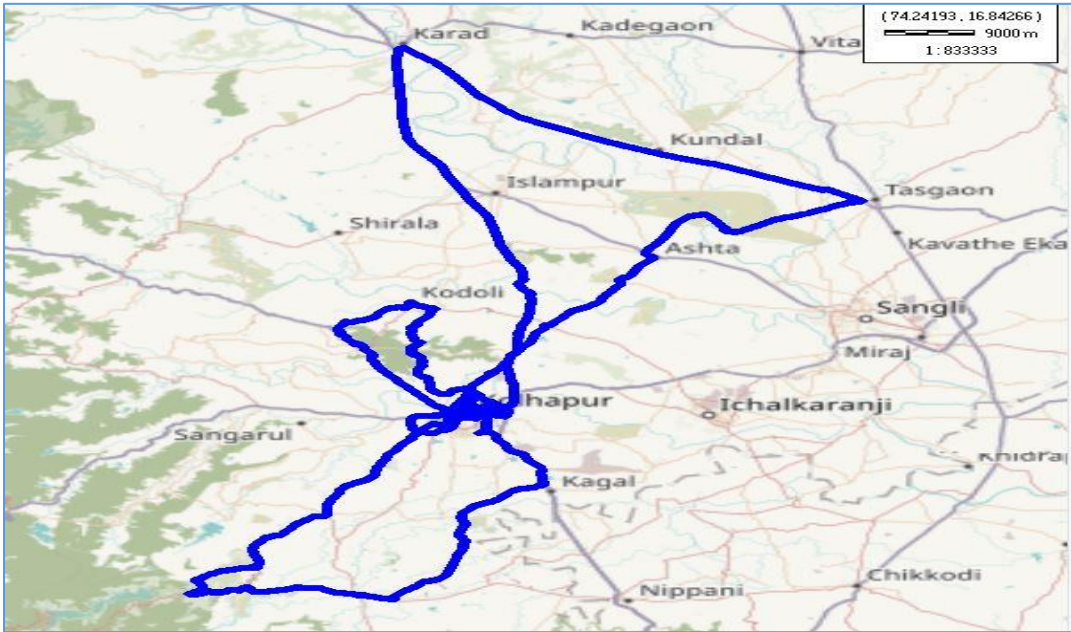
VIL

Technology	Time Spent
4G	98.05
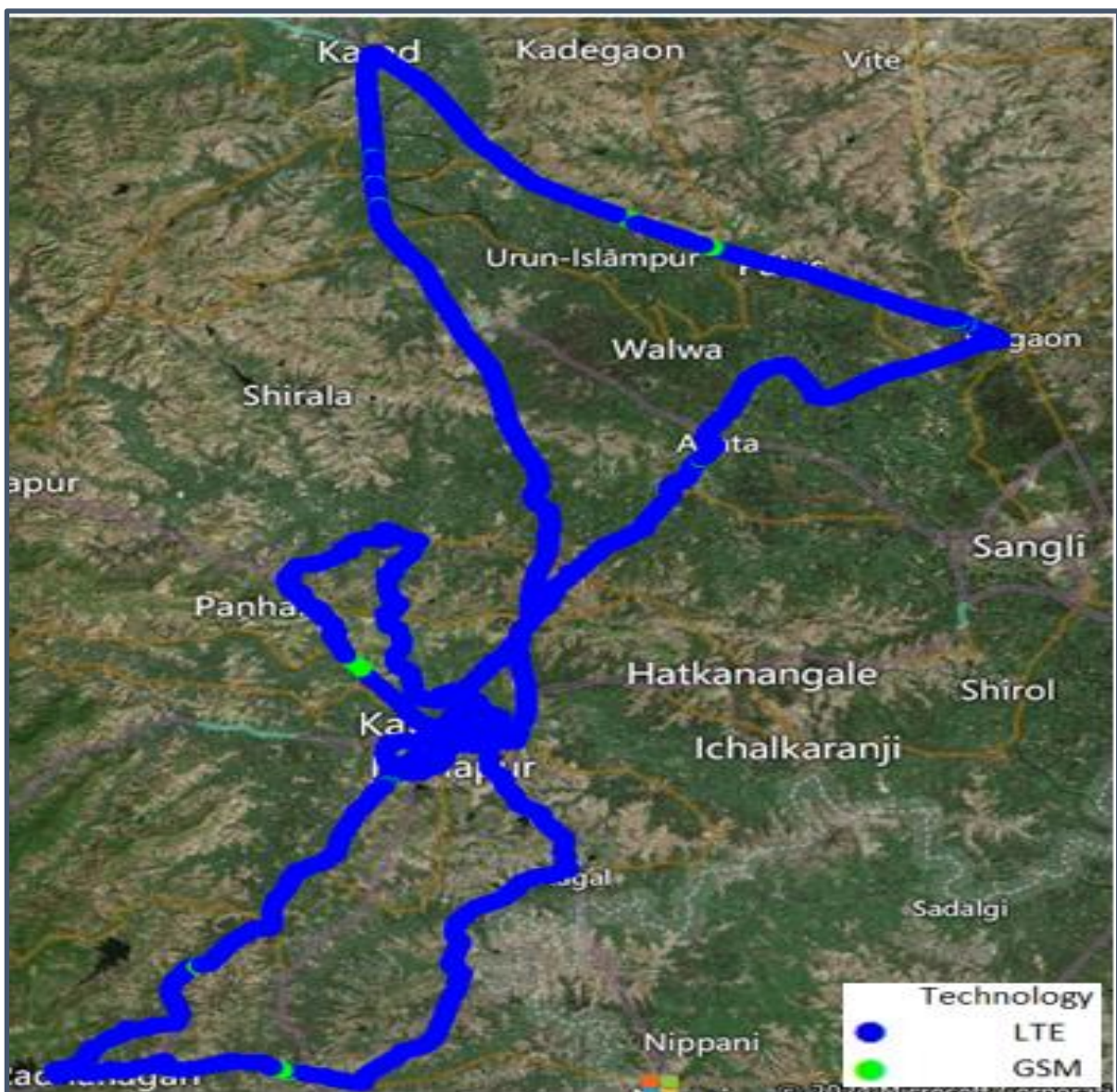
Airtel
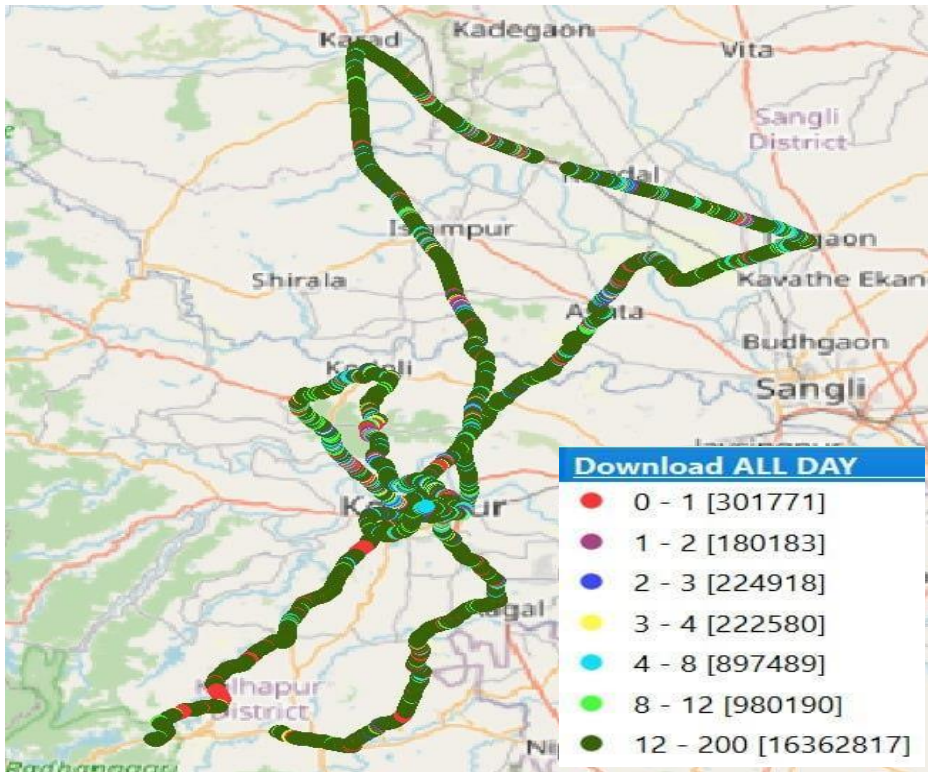
DL throughput	No. of Samples	%
0 to 1 Mbps	301771	1.57
1 to 2 Mbps	180183	0.94
2 to 3 Mbps	224918	1.17
3 to 4 Mbps	222580	1.16
4 to 8 Mbps	897489	4.68
8 to 12 Mbps	980190	5.11
>12 Mbps	16362817	85.36
Total	19169948	100
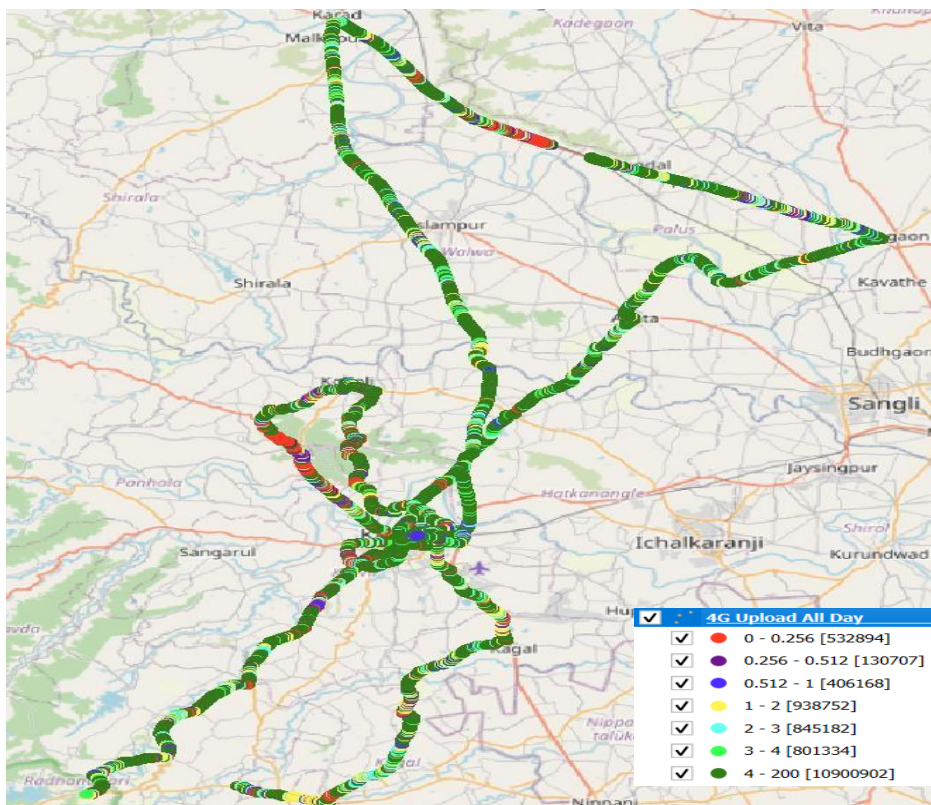
UL throughput	No. of samples	%
0 to 256 Kbps	532894	3.66
250 to 512 Kbps	130707	0.90
512 Kbps to 1 Mbps	406168	2.79
1 to 2 Mbps	938752	6.45
2 to 3 Mbps	845182	5.81
3 to 4 Mbps	801334	5.51
>4 Mbps	10900902	74.89
Total	14555939	100

BSNL
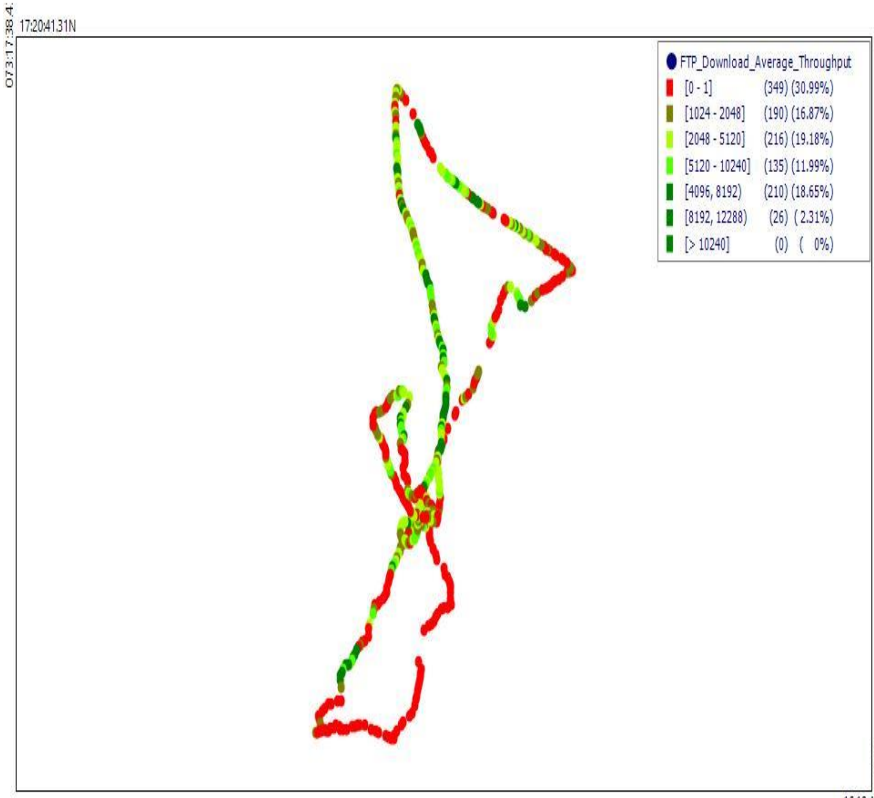
DL throughput	No. of Samples	%
0 to 1 Mbps	349	30.99
1 to 2 Mbps	190	16.87
2 to 3 Mbps	216	19.18
3 to 4 Mbps	135	11.99
4 to 8 Mbps	210	18.65
8 to 12 Mbps	26	2.31
>12 Mbps	0	0
Total	1126	100
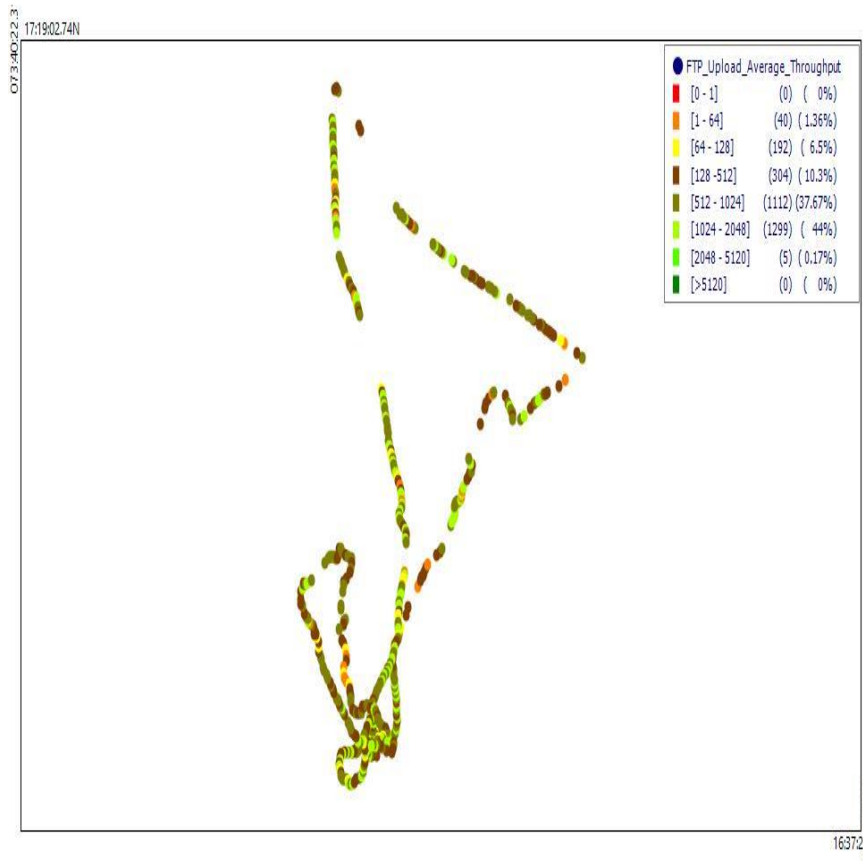
UL throughput	No. of Samples	%
0 to 1 Mbps	232	7.86
1 to 2 Mbps	304	10.3
2 to 3 Mbps	1112	37.67
3 to 4 Mbps	1299	44
4 to 8 Mbps	5	0.17
8 to 12 Mbps	0	0
>12 Mbps	0	0
Total	2947	100

JIO
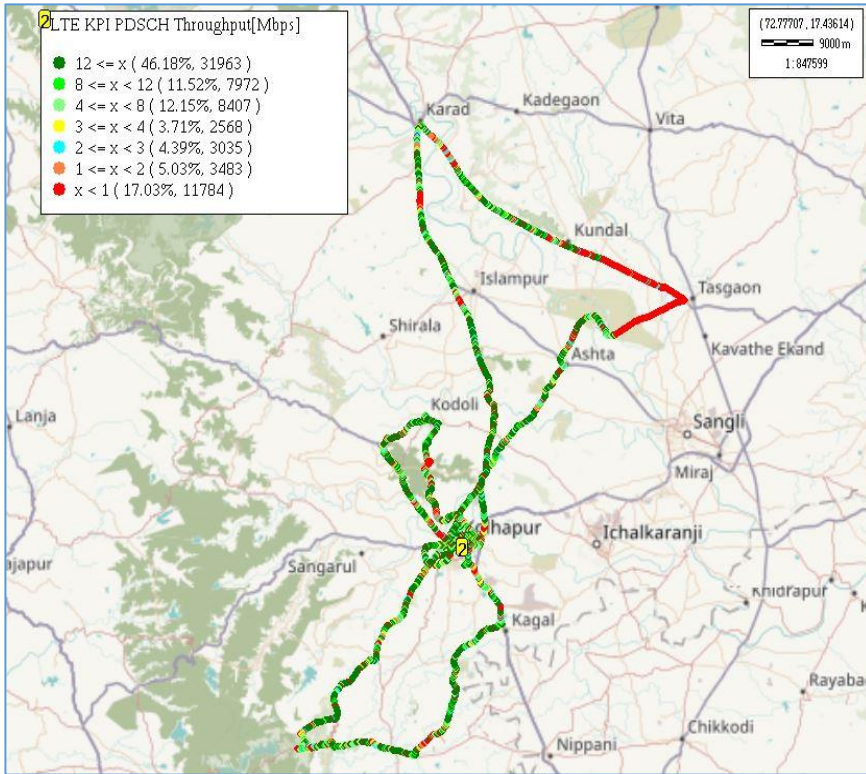
DL throughput	No. of Samples	%
0 to 1 Mbps	11784	17.03
1 to 2 Mbps	3483	5.03
2 to 3 Mbps	3035	4.39
3 to 4 Mbps	2568	3.71
4 to 8 Mbps	8407	12.15
8 to 12 Mbps	7972	11.52
>12 Mbps	31963	46.18
Total	69212	100
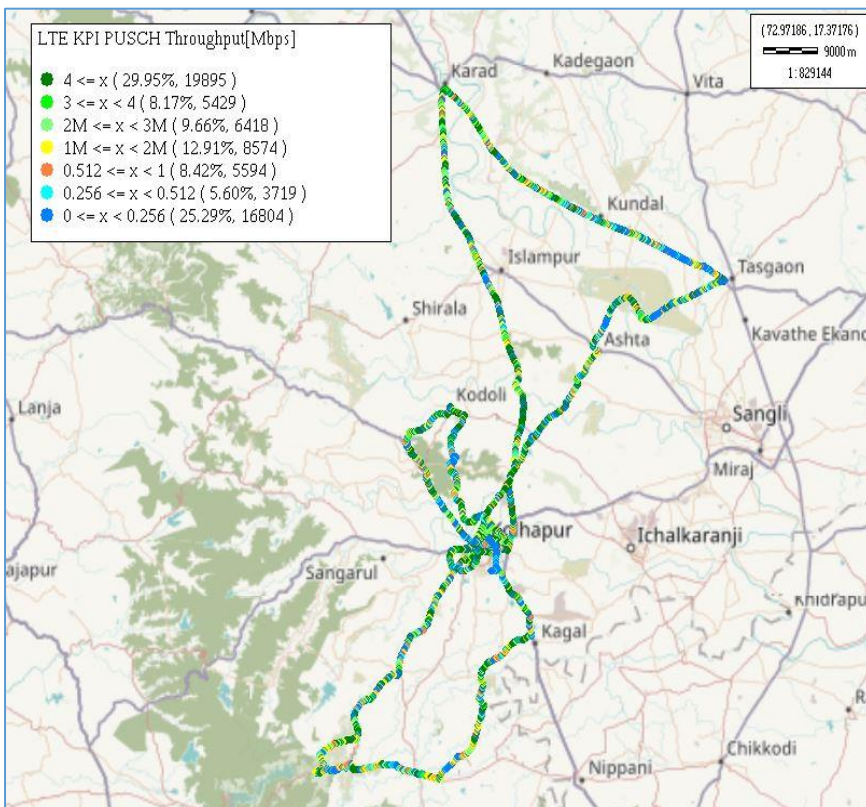
UL throughput	No. of samples	%
0 to 256 Kbps	16804	29.95
250 to 512 Kbps	3719	5.6
512 Kbps to 1 Mbps	5594	4.42
1 to 2 Mbps	8574	12.91
2 to 3 Mbps	6418	9.66
3 to 4 Mbps	5429	8.17
>4 Mbps	19895	29.95
Total	66433	100

VIL
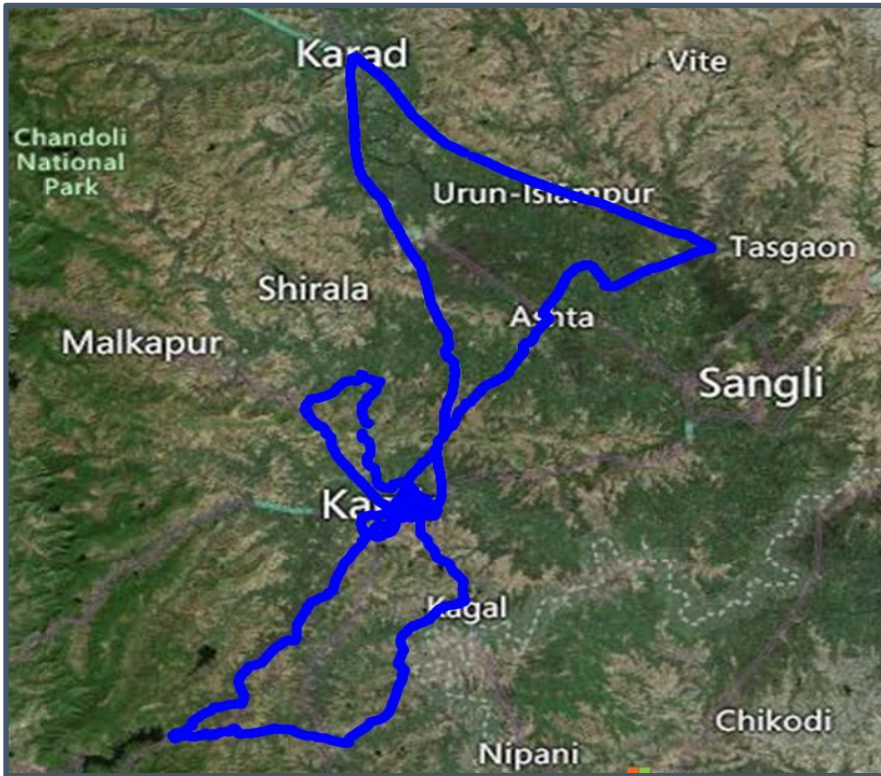
DL throughput	No. of Samples	%
0 to 1 Mbps	2188952	33.18
1 to 2 Mbps	458593	6.95
2 to 3 Mbps	337651	5.12
3 to 4 Mbps	283091	4.29
4 to 8 Mbps	804079	12.19
8 to 12 Mbps	557002	8.44
>12 Mbps	1965512	29.83
Total	6594880	100
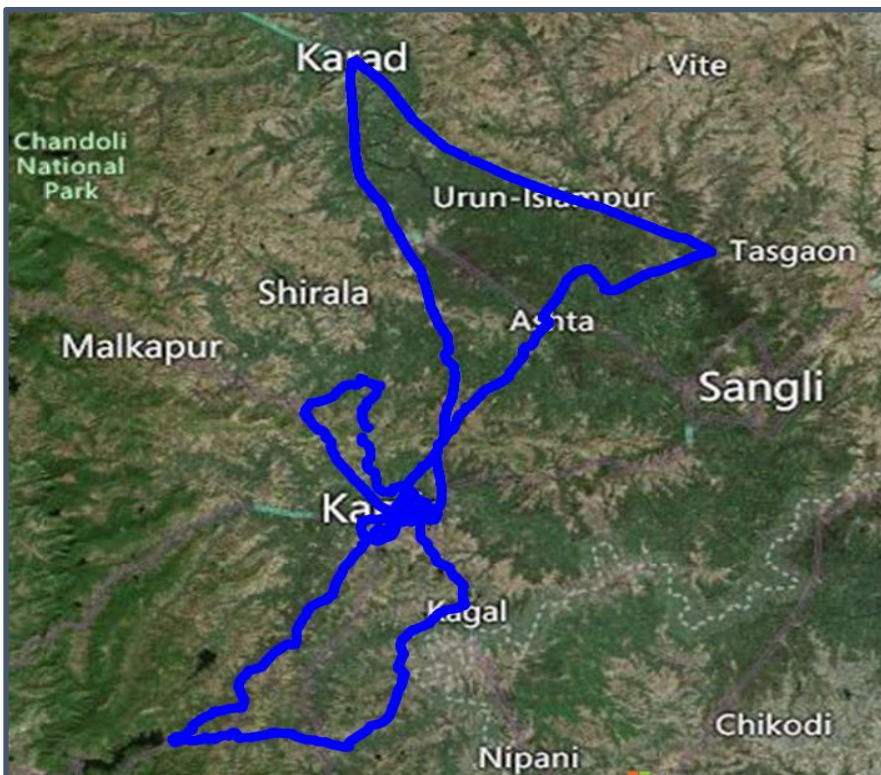
UL throughput	No. of samples	%
0 to 256 Kbps	3105238	45.52
250 to 512 Kbps	371453	5.45
512 Kbps to 1 Mbps	321922	4.72
1 to 2 Mbps	463788	6.8
2 to 3 Mbps	451062	6.61
3 to 4 Mbps	390117	5,72
>4Mbps	1717313	25.18
Total	6820893	100

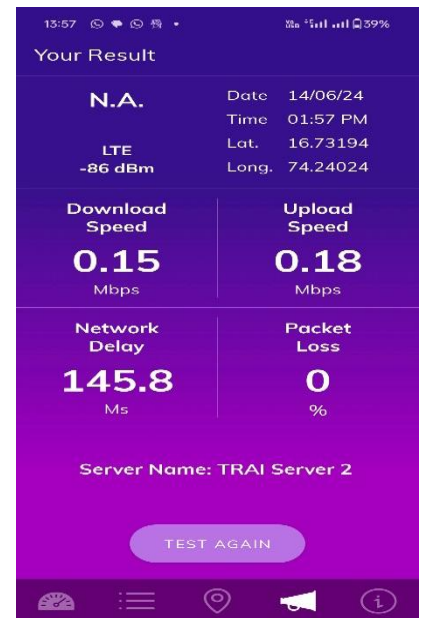# V. TRAI My Speed App Test Details-2G

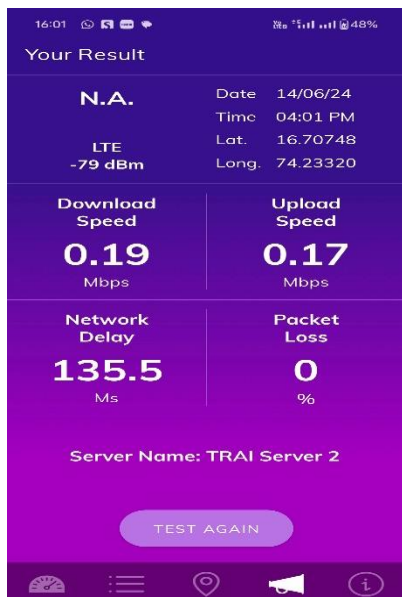| Techology-2G	Shree Mahalakshmi Temple	Shalini Palace	D Y Patil College of Engg & Technology	Office of District Collector	Bus Stand Kolhapur	Kolhapur Airport
Download Speed (Mbps)	0.22	0.16	0.16	0.19	0.16	0.15
Upload Speed (Mbps)	0.16	0.05	0.12	0.10	0.11	0.13
Latency (ms)	115.3	144.2	146.0	238.1	171.5	116.3

Shree Mahalakshmi Temple
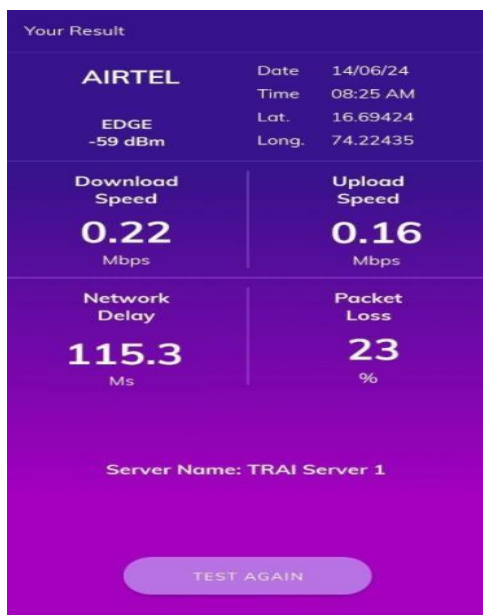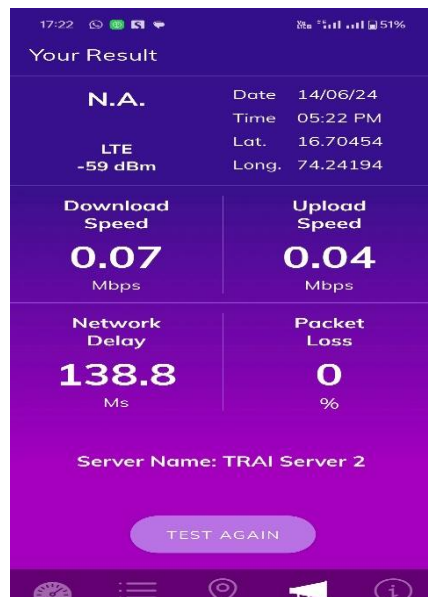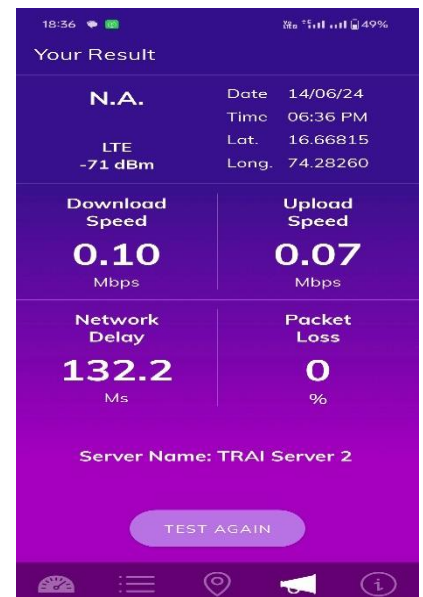

Shalini Palace

D Y Patil College of Engg & Technology

Office of District Collector
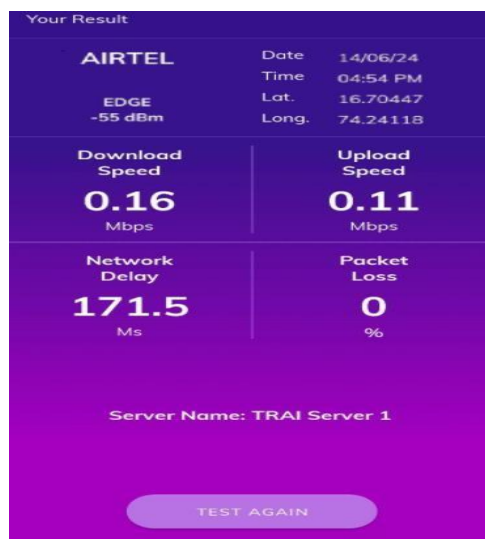
Bus Stand Kolhapur
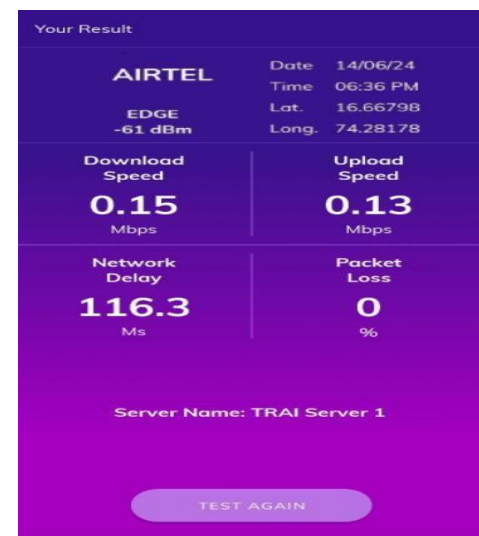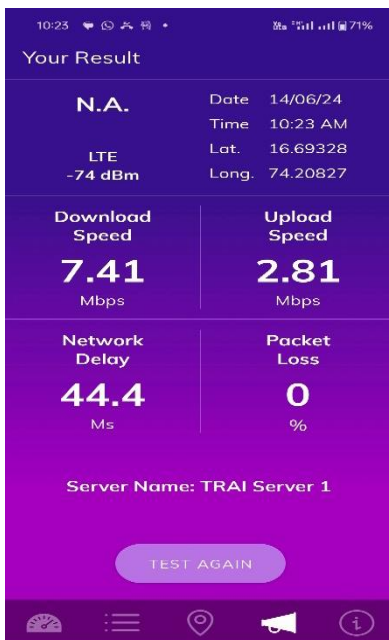

Kolhapur Airport

V. TRAI My Speed App Test Details-4G
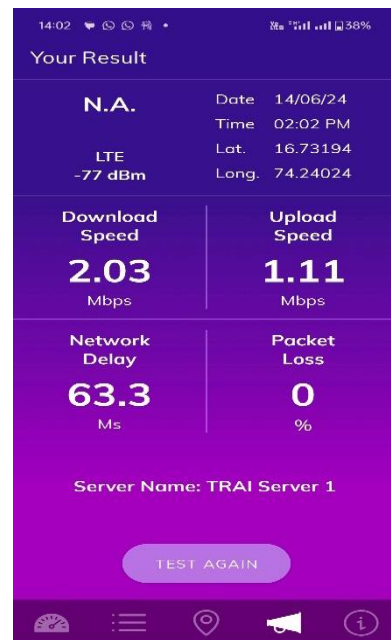
Techology-4G	Shree Mahalakshmi Temple	Shalini Palace	D Y Patil College of Engg & Technology	Office of District Collector	Bus Stand Kolhapur	Kolhapur Airport
Download Speed (Mbps)	61.10	32.56	35.22	68.45	46.94	29.52
Upload Speed (Mbps)	24.81	21.76	10.83	37.37	42.16	9.74
Latency (ms)	47.6	27.0	49.4	30.4	29.1	35.7

Shree Mahalakshmi Temple
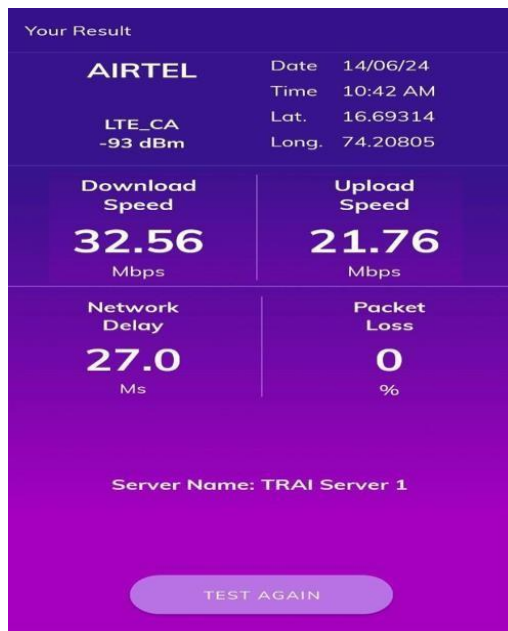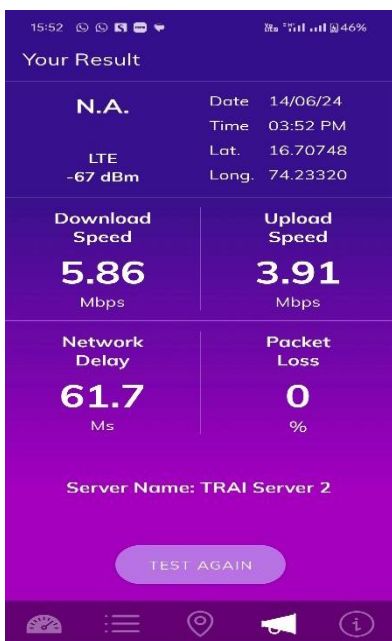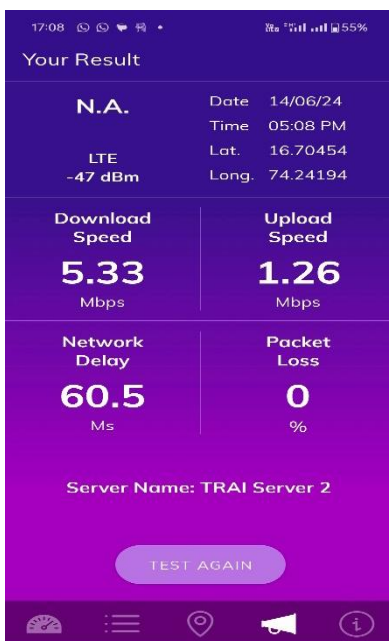

Shalini Palace

D Y Patil College of Engg & Technology

Office of District Collector
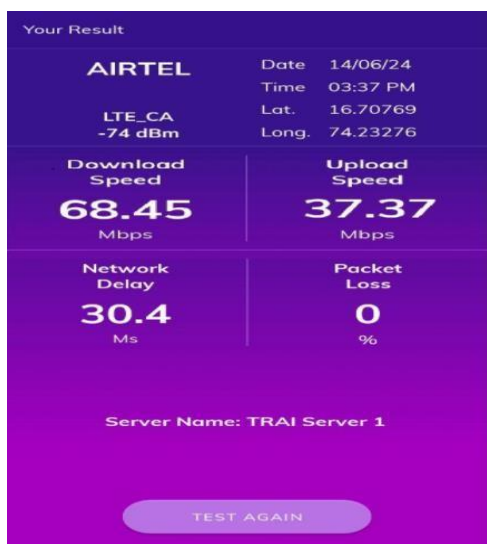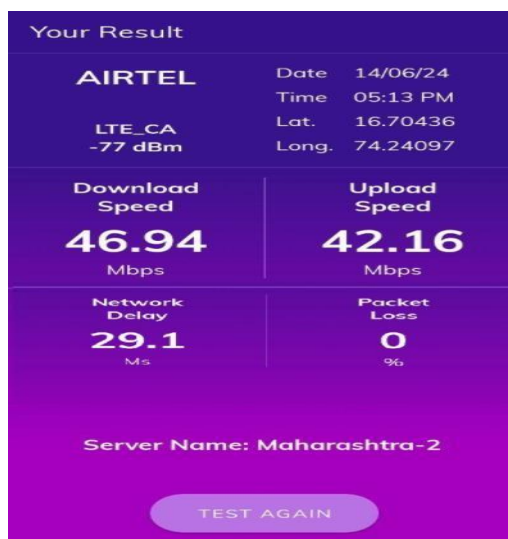
Bus Stand Kolhapur

Kolhapur Airport

V. TRAI MySpeed App Test Details-2G

Techology-2G	Shree Mahalakshmi Temple	Shalini Palace	D Y Patil College of Engg & Technology	Office of District Collector	Bus Stand Kolhapur	Kolhapur Airport
Download Speed (Mbps)	0.19	0.18	0.15	0.19	0.07	0.10
Upload Speed (Mbps)	0.20	0.17	0.18	0.17	0.04	0.07
Latency(ms)	137.8	119.7	145.8	135.5	138.8	132.2

Shree Mahalakshmi Temple
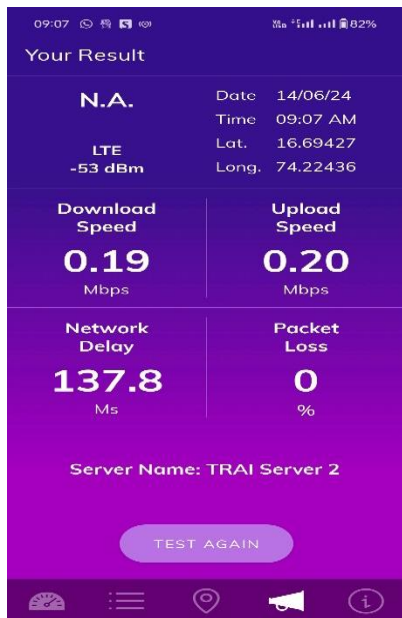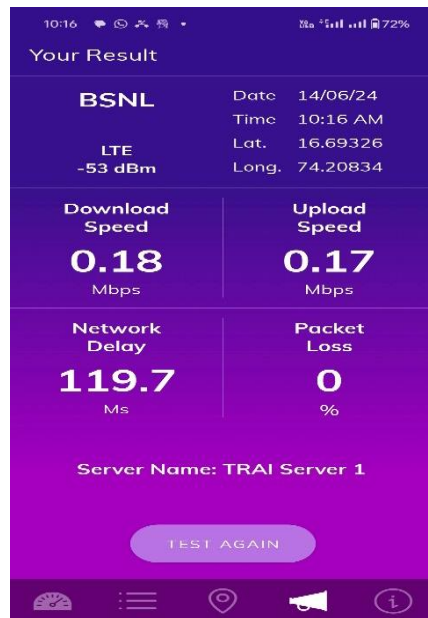
Shalini Palace

D Y Patil College of Engg & Technology

Office of District Collector

Bus Stand Kolhapur

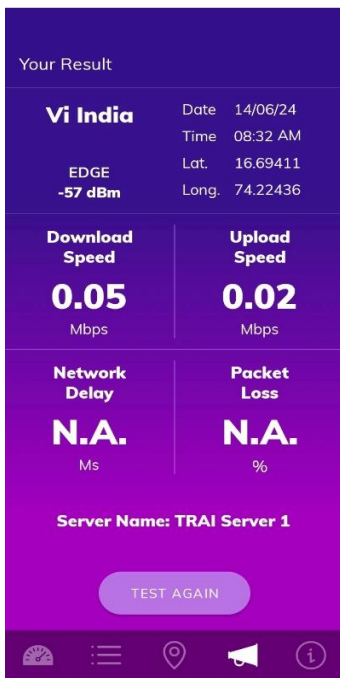### Kolhapur Airport

V. TRAI MySpeed App Test Details-3G/4G

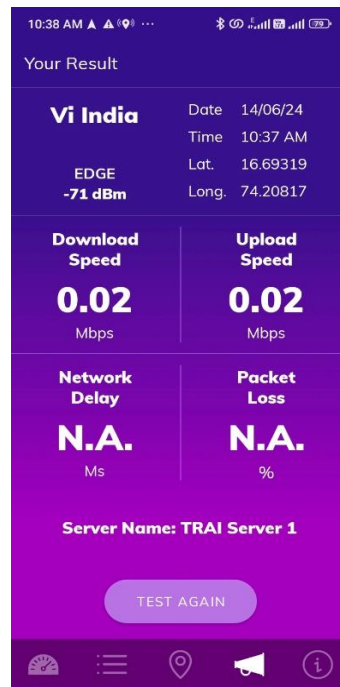| Techology-4G	Shree Mahalakshmi Temple	Shalini Palace	D Y Patil College of Engg & Technology	Office of District Collector	Bus Stand Kolhapur	Kolhapur Airport
Download Speed (Mbps)	14.12	7.41	2.03	5.86	5.33	3.65
Upload Speed (Mbps)	3.90	2.81	1.11	3.91	1.26	2.27
Latency(ms)	47.1	44.4	63.3	61.7	60.5	51.4

Shree Mahalakshmi Temple

Shalini Palace

D Y Patil College of Engg & Technology

Office of District Collector

Bus Stand Kolhapur

Kolhapur Airport
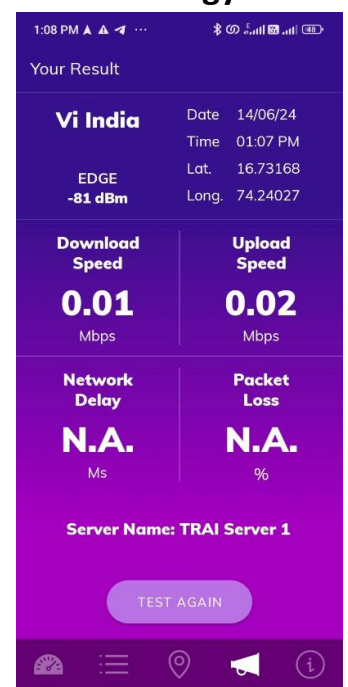
V. TRAI MySpeed App Test Details-4G

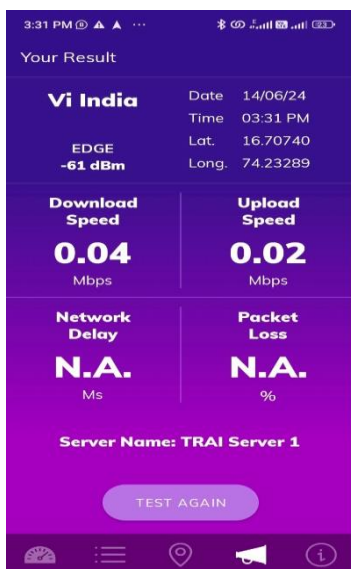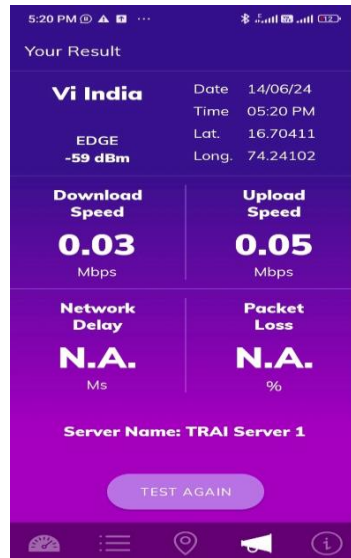| Techology-4G	Shree Mahalakshmi Temple	Shalini Palace	D Y Patil College of Engg & Technology	Office of District Collector	Bus Stand Kolhapur	Kolhapur Airport
Download Speed (Mbps)	78.4	70.7	21.8	33.2	19.4	27.5
Upload Speed (Mbps)	7.4	9.6	3.6	5.5	24.9	56.6
Latency (ms)	36	36	37	39	39	64

Shree Mahalakshmi Temple

Shalini Palace

D Y Patil College of Engg & Technology

Office of District Collector

Bus Stand Kolhapur

Kolhapur Airport

V. TRAI MySpeed App Test Details-2G

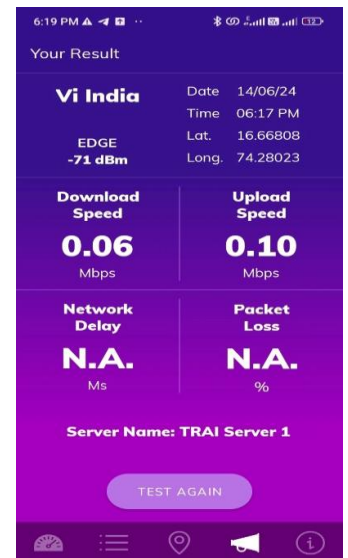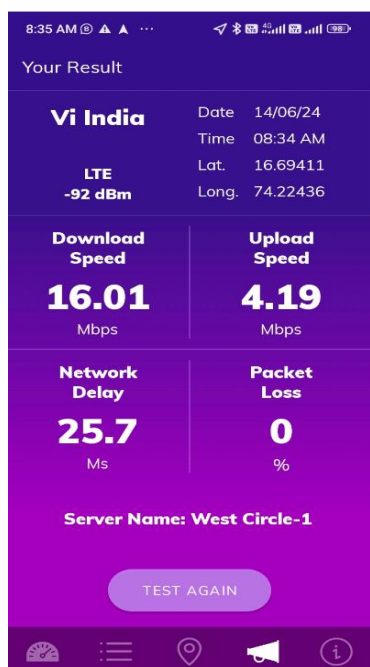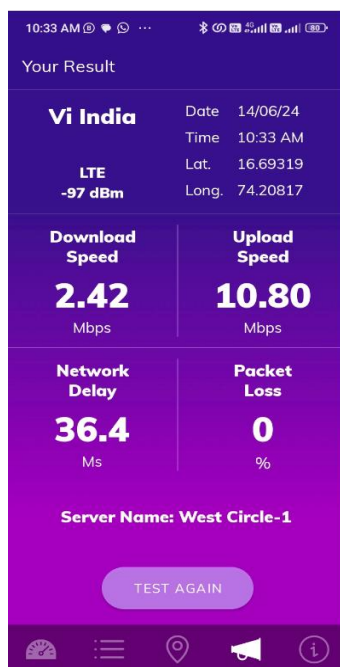| Techology-2G	Shree Mahalakshmi Temple	Shalini Palace	D Y Patil College of Engg & Technology	Office of District Collector	Bus Stand Kolhapur	Kolhapur Airport
Download Speed (Mbps)	0.05	0.02	0.01	0.04	0.03	0.06
Upload Speed (Mbps)	0.02	0.02	0.02	0.02	0.05	0.10
Latency (ms)	NA	NA	192.5	NA	NA	119.8

Shree Mahalakshmi Temple

Shalini Palace

D Y Patil College of Engg & Technology

Office of District Collector

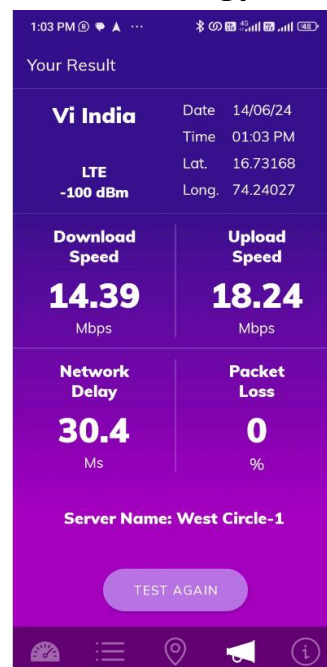### Bus Stand Kolhapur

Kolhapur Airport
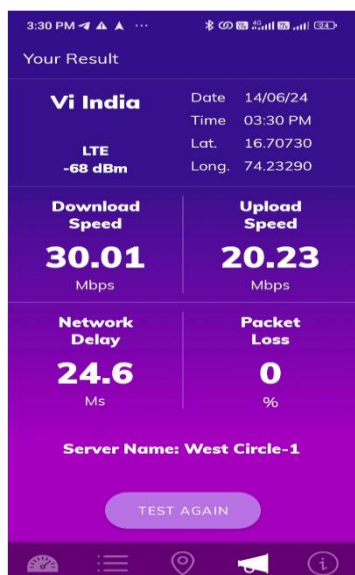
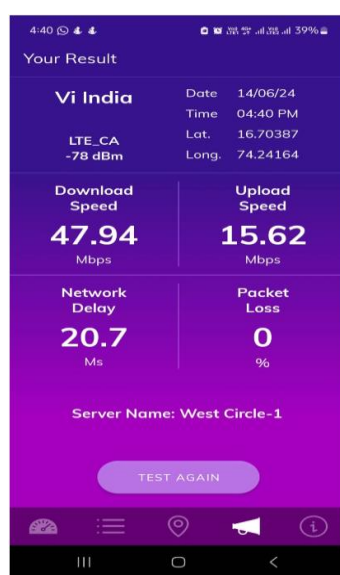| Techology-4G	Shree Mahalakshmi Temple	Shalini Palace	D Y Patil College of Engg & Technology	Office of District Collector	Bus Stand Kolhapur	Kolhapur Airport
Download Speed (Mbps)	16.01	2.42	14.39	30.01	47.94	5.62
Upload Speed (Mbps)	4.19	10.80	18.24	20.23	15.62	28.45
Latency (ms)	25.7	36.4	30.4	24.6	20.7	31.2

Shree Mahalakshmi Temple

Shalini Palace

D Y Patil College of Engg & Technology

Office of District Collector

Bus Stand Kolhapur

Kolhapur Airport