Operator Assisted Drive Test Report

Warangal SSA

DEC – 2024
(RO, HYDERABAD)

Key Performance Indicators: **All TSPs have met the Drop Call Rate (DCR) benchmark of 2%. All TSPs have met the Call Setup Success Rate (CSSR) of 95%. All TSPs have met the Rx quality of 95%, except BSNL 3G, Airtel & VIL 4G.**

The Operator Assisted Drive Test (OADT) has been carried out by TRAI RO Hyderabad with the help of Service Providers in Warangal City and surrounding areas Hanamakonda, Kazipet, Jangaon, Thorrur, Mahabubabad, Mulugu and Etuturagaram from 9:00 AM to 8:00 PM during 16th to 19th December 2024. The drive test covered drive route of 480 KMs & 7 hotspot over a period of 4 days. Approximately 735 calls were made for each of the 7 networks: Three 2G networks, One 3G network and Three LTE network covering four TSPs.

Overview   Voice Summary   Data Summary

Overview

TRAI Hyderabad conducted Operator Assisted Drive Test from 16[h] to 19th December covering various locations in Hanamakonda, Kazipet, Jangaon, Thorrur, Mahabubabad, Mulugu and Etuturagaram.The performance of Airtel, BSNL, Jio and Vodafone Idea Limited 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, Handover 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 480 KMs over a period of 4 days from 16th to 19th December 2024. Approximately 735 calls were made for each of the 7 networks: three 2G (Lock Mode) networks, one 3G (Dual mode) networks and three VoLTE network covering 4 unique TSPs.

Data Tests:

1.Dynamic data test was conducted for 480 kms over a period of 3 days for download throughput for 3G & 4G technologies.

Data Tests were performed at 6 static locations for 2G, 3G & 4G technologies of five iterations at each location.

2. For Voice and Data KPI's, 2G measurement is done with UE locked mode, 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 www.myntra.com
Video Streaming	130 Sec Clip
Latency	32 Bytes on www.google.com

Overview

Voice & Dynamic Data Test Drive Route
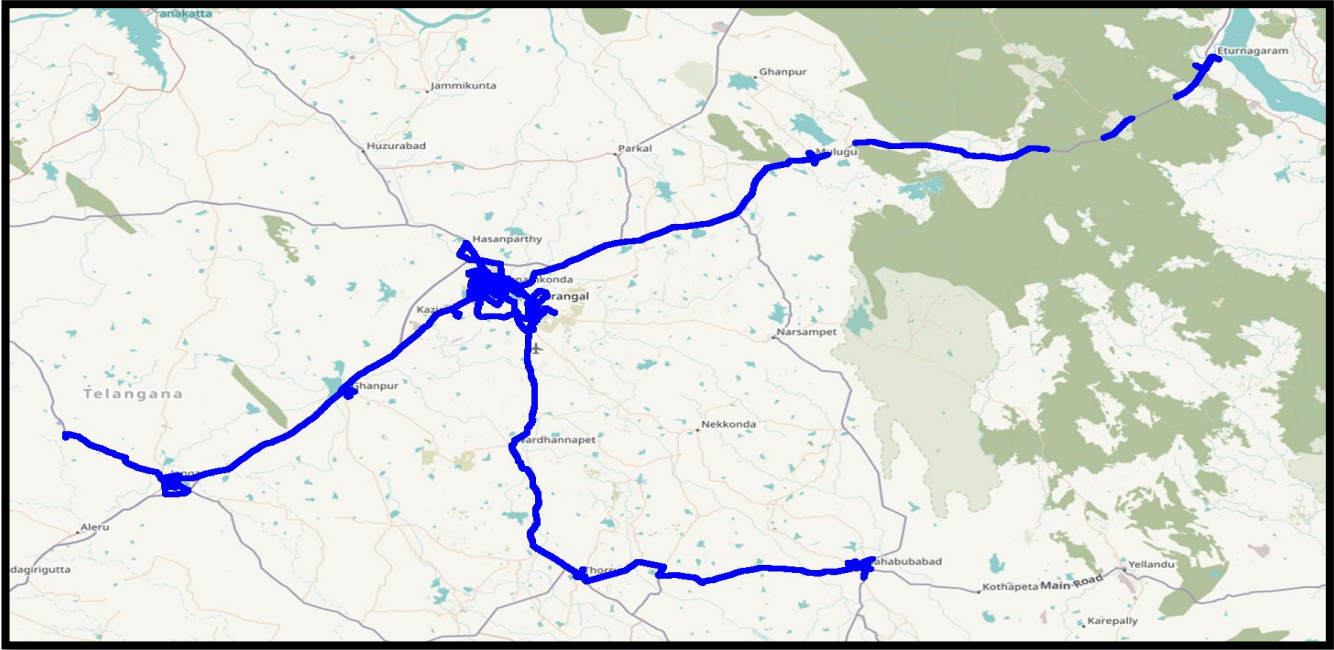
Areas Covered -WARANGAL	
Mulugu road	Pocham maidan
desaipet	enumamula
kasibugga	lb nagar
labour colony	Shiva nagar
girmajipet	urs gutta
Areas Covered-HANAMAKONDA	
BSNL office	Advocates colony
Balasamudram	Sainagar
Kishanpur	Lashkar Bazar
Kumarpalli	Gundla singaram
Reddy colony	Kaktiya colony
Peddammagadda	Arepalli
Nakkalagutta	Subedari
Fatima nagar	Kadipikonda
Hunter road	Shyampet
Postal colony	Gopalpuram
Bheemaram	NGOS colony
Waddepally	Bhatupally

HANAMAKONDA to ETURUNAGAR	
Mallampalle	Mulugu
Pasra	Eturunagar
HANAMAKONDA to JANAGOAN	
Kazipet	Madikonda
Karunapuram	Ghanpur
Raghunathpally	Yashwanthapur
Areas Covered-JANGOAN	
Balaji nagar	Teachers colony
Kurumawada	Bhavani nagar
Jyothinagar	Weavers colony
JANAGOAN to BHACHANAAPET	
Shamirpet	Thammadapalli
Bachanaapet	
WGL to MAHABUBABAD	
Wardannapet	Thorrur
Nellikudur	Mahabubabad

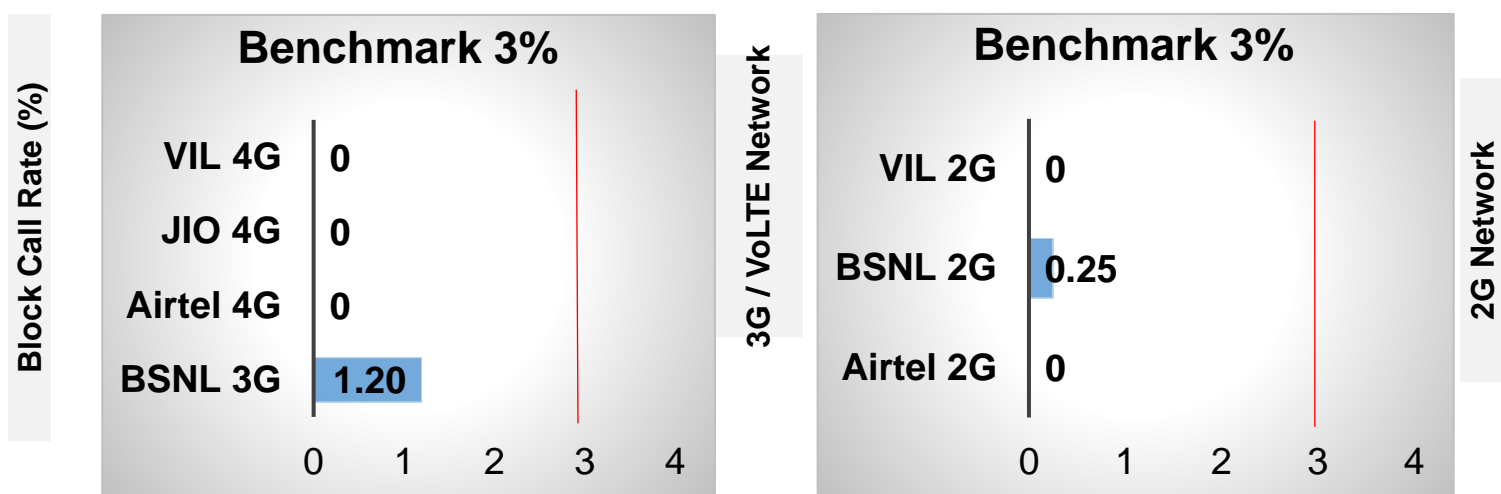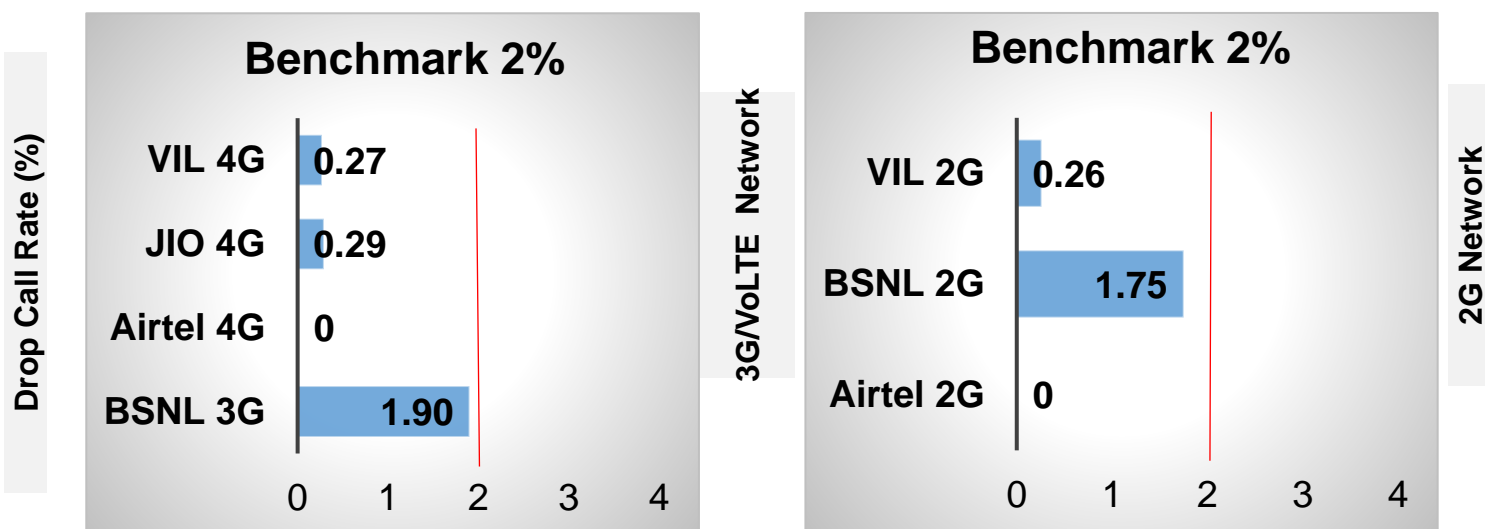# Overview
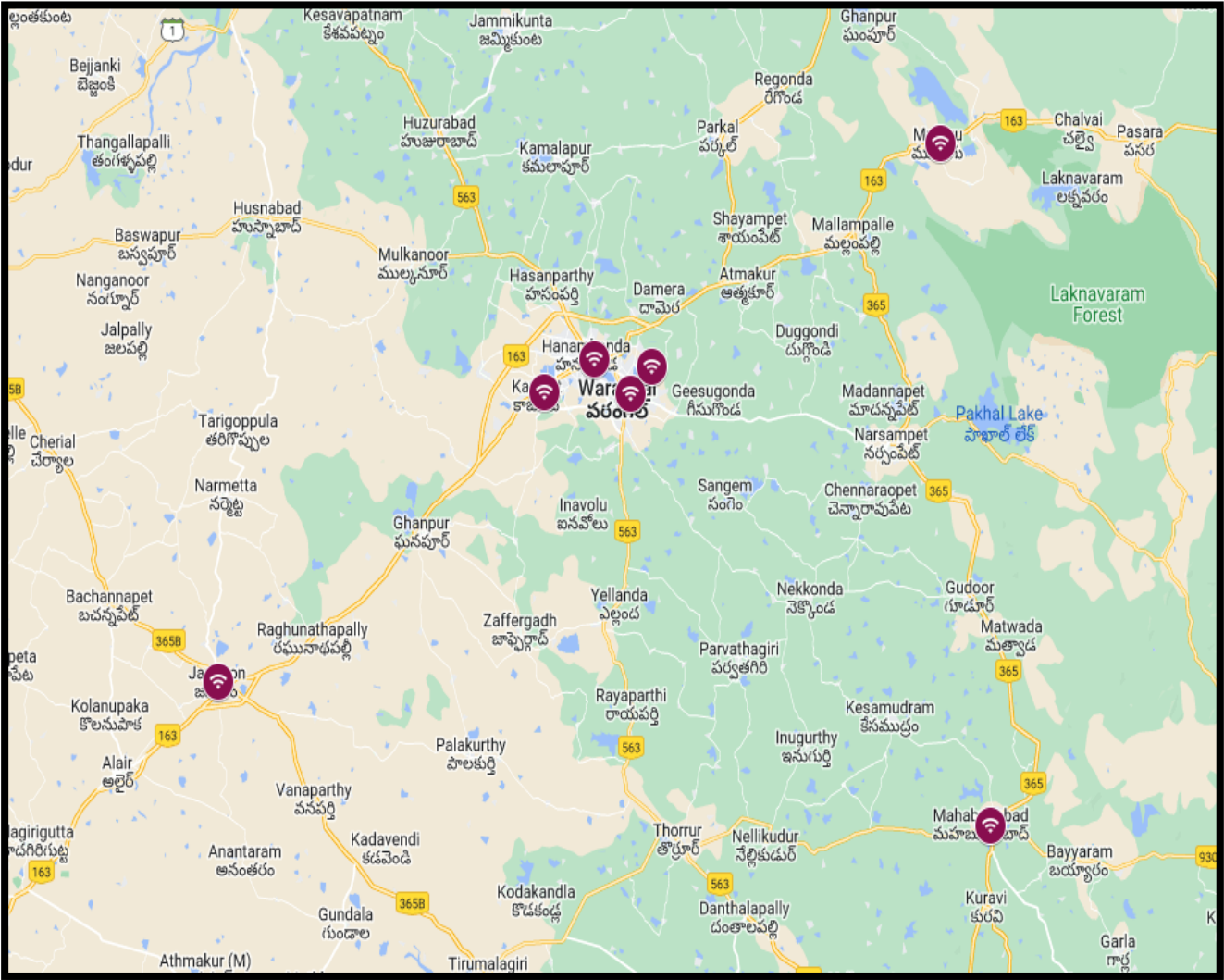
7 Static Locations
Mahabubabad Railway Station
Mulugu Bus Stand
Jangon Bus Stand
Khazipet Railway station
Hanmakonda Bus Stand
Warangal Railway Station
Enumamula Market

Voice Calls

QoS compliance of the TSPs in Warangal SSA for Voice across technologies 2G/3G/VoLTE:

Drop Call Rate (%)

Benchmark 2% — 3G/VoLTE Network

VIL 4G	0.27
JIO 4G	0.29
Airtel 4G	0
BSNL 3G	1.90

Benchmark 2% — 2G Network

VIL 2G	0.26
BSNL 2G	1.75
Airtel 2G	0

Block Call Rate (%)

Benchmark 3% — 3G / VoLTE Network

VIL 4G	0
JIO 4G	0
Airtel 4G	0
BSNL 3G	1.20

Benchmark 3% — 2G Network

VIL 2G	0
BSNL 2G	0.25
Airtel 2G	0

KPIs	2G			3G	VoLTE		
	Airtel	BSNL	VIL	BSNL	Airtel	JIO	VIL
Drop Call Rate %	0	1.75	0.26	1.90	0	0.29	0.27
Block Call Rate %	0	0.25	0	1.20	0	0	0

a) All TSPs have met the 2% QOS benchmark of Drop Call Rate (DCR%).

b) Call Block Rate (CBR%) benchmark of 3% was achieved by all TSP's.

Voice Calls

Coverage

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

TSPS	2G		
	Airtel	**BSNL**	**VIL**
Coverage %	84.60	76.21	87.30

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

TSP	3G	VoLTE (≥ -110 dBm)			VoLTE (-110 to ≥ -120 dBm)		
	BSNL	**Airtel**	**JIO**	**VIL**	**Airtel**	**JIO**	**VIL**
Coverage %	88.40	97.57	97.10	98.51	2.27	1.87	1.31

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

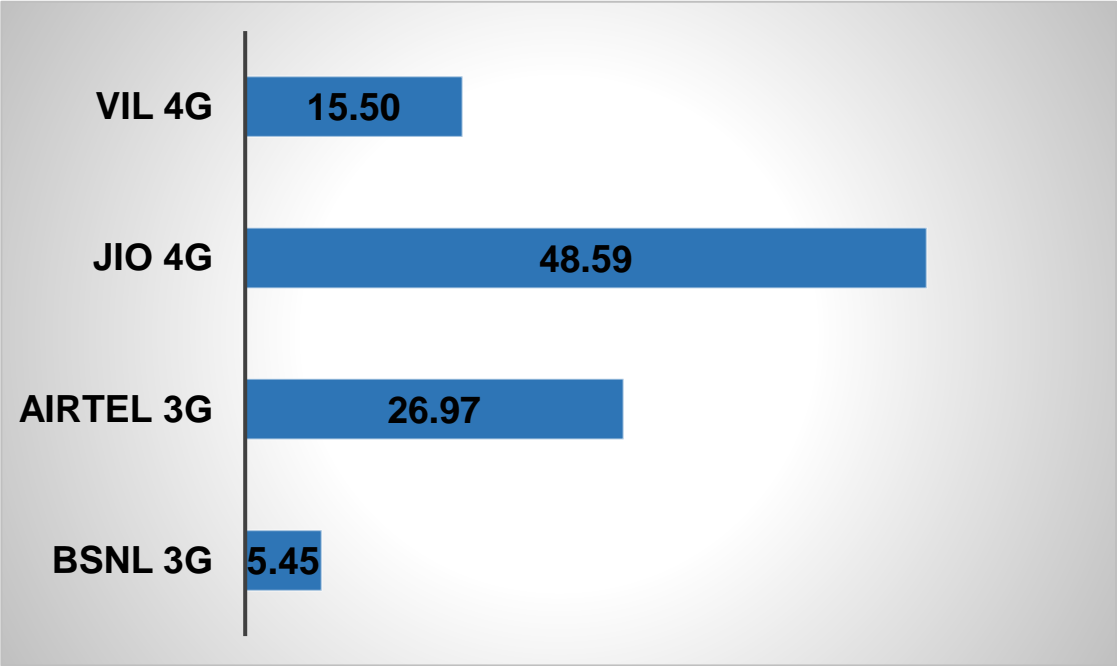| TSP	3G	VoLTE		
	BSNL	**Airtel**	**JIO**	**VIL**
Time spent %	79.90	100	99.91	99.89

Data Services Dynamic

Dynamic Data was tested, Download Throughput was tested.

Data Download Performance (kbps) - Dynamic

3G/4G/ Network:

Data Services Dynamic	3G / 4G			
	BSNL 3G	**Airtel 4G**	**JIO 4G**	**VIL 4G**
Download throughput in Mbps	5.45	26.97	48.59	15.50

Data Services Static

Data was tested at 7 locations .Following services were tested: Data Download/Upload, Latency (www.google.com), and Web browsing delay (Flipkart, Amazon, Myntra)
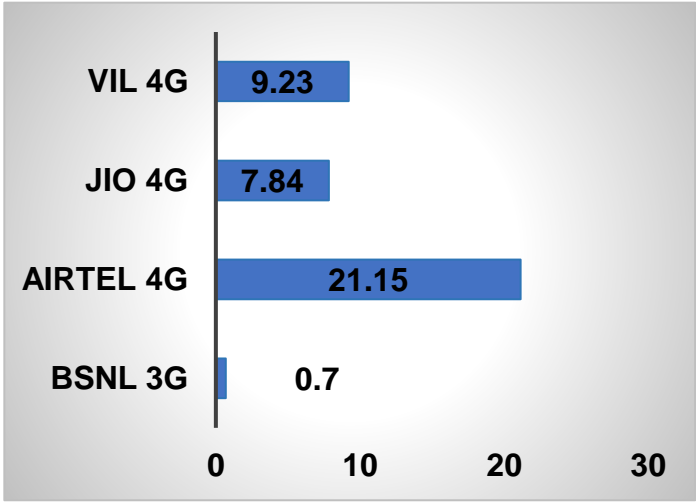
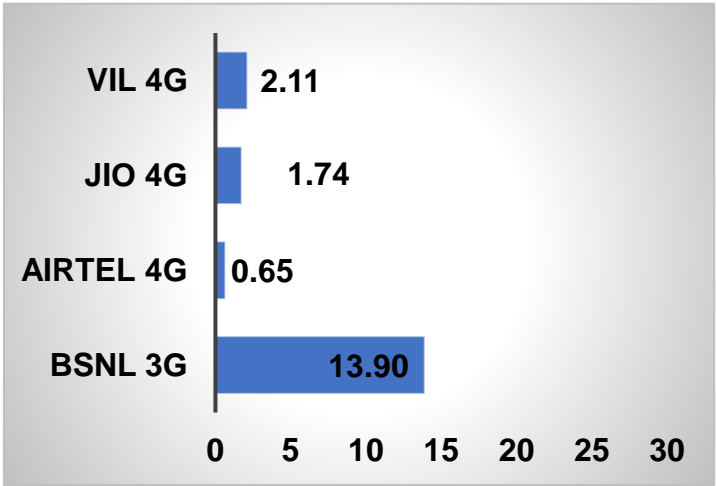## Data Download and Upload Performance (Mbps)
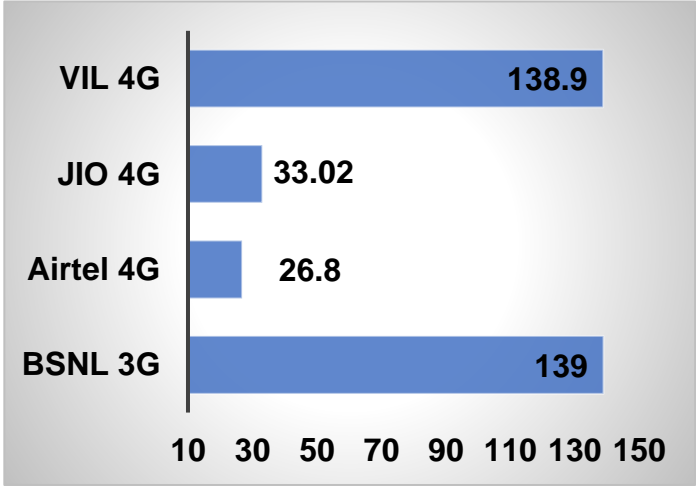
3G/4G/ Network:

Download Throughput (Mbps)
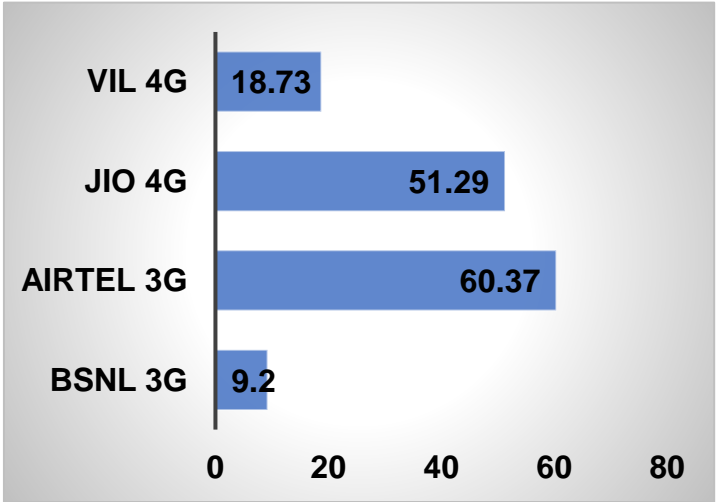
Network	Value
VIL 4G	18.73
JIO 4G	51.29
AIRTEL 3G	60.37
BSNL 3G	9.2

(Axis: 0, 20, 40, 60, 80)

Upload Throughput (Mbps)

Network	Value
VIL 4G	9.23
JIO 4G	7.84
AIRTEL 4G	21.15
BSNL 3G	0.7

(Axis: 0, 10, 20, 30)

Web Browsing delay (Sec)

Network	Value
VIL 4G	2.11
JIO 4G	1.74
AIRTEL 4G	0.65
BSNL 3G	13.90

(Axis: 0, 5, 10, 15, 20, 25, 30)

Latency (ms)

Network	Value
VIL 4G	138.9
JIO 4G	33.02
Airtel 4G	26.8
BSNL 3G	139

(Axis: 10, 30, 50, 70, 90, 110, 130, 150)

Summary

Voice Calls	2G		
	Airtel	**BSNL**	**VIL**
Call attempts	719	780	762
Block call rate %	0	0.25	0
CSSR %	100	96.15	99.74
Drop call rate %	0	1.75	0.26
Mobility HOSR %	98.16	97.25	98.32
RX Quality %	96.20	97.75	96.82

Voice Calls	3G	VoLTE		
TSP (For 3G)	**BSNL**	**Airtel**	**JIO**	**VIL**
Call attempts	134	737	670	745
Block call rate %	1.2	0	0	0
CSSR %	95.5	100	100	99.73
Drop call rate %	1.9	0	0.29	0.27
Mobility HOSR %	94.39	100	99.18	99.85
RX Quality %	91.93	94.12	96.83	92.95

Summary

Data Services Static	3G/4G			
	BSNL 3G	Airtel 4G	JIO 4G	VIL 4G
Download throughput in Mbps	9.20	60.37	51.29	18.73
Upload Throughput in Mbps	0.70	21.15	7.84	9.23
Web browsing delay in second	13.90	0.65	1.74	2.11
Latency in (msec)	139	26.80	33.02	138.90

Data Services static

Mahabubabad Railway Station	3G	LTE		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	2.2	48.65	45.68	19.3
Upload Throughput (Mbps)	0.1	16.86	8.44	6.06
Web Browsing Delay (sec)	12.6	2.41	1.83	2.2
Latency (msec)	198	25.3	35	144

Mulugu Bus Stand	3G	LTE		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	24.0	69.46	40.61	11.3
Upload Throughput (Mbps)	9.0	13.86	9.81	6.32
Web Browsing Delay (sec)	16.0	0.29	1.81	2.32
Latency (msec)	168	32.2	37.5	106.6

Jangaon Bus Stand	3G	LTE		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	11.7	39.91	28.32	23.89
Upload Throughput (Mbps)	8.6	18.9	4.68	8.26
Web Browsing Delay (sec)	13.9	0.46	1.8	1.89
Latency (msec)	165	26.6	35	135

Kazipet Railway Station	3G	LTE		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	7.7	79.9	59.99	25.61
Upload Throughput (Mbps)	7.6	24.8	8.11	7.14
Web Browsing Delay (sec)	15.6	0.26	1.68	1.93
Latency (msec)	172	28.9	27.83	147.8

Data Services static

Hanamakonda BusStand	3G	LTE		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	4.74	47.08	32.51	16.45
Upload Throughput (Mbps)	6.2	19.32	4.82	7.89
Web Browsing Delay (sec)	17.37	0.53	1.67	2.05
Latency (msec)	148	22.9	30.16	148.4

Warangal Railway Station	3G	LTE		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	17.5	65.26	119.28	14.5
Upload Throughput (Mbps)	7.51	27.81	8.3	11.12
Web Browsing Delay (sec)	6.5	0.24	1.64	2.38
Latency (msec)	168.1	24.8	32	143.2

Enumamula Market	3G	LTE		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	9.27	72.38	32.67	20.09
Upload Throughput (Mbps)	7.6	26.56	10.72	17.80
Web Browsing Delay (sec)	13.2	0.40	1.81	2.03
Latency (msec)	126	27.52	33.66	147.4

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	84.6
BSNL 2G	76.21
VIL 2G	87.30
BSNL 3G	88.40
Airtel VoLTE	97.57
JIO VoLTE	97.10
VIL VoLTE	98.51
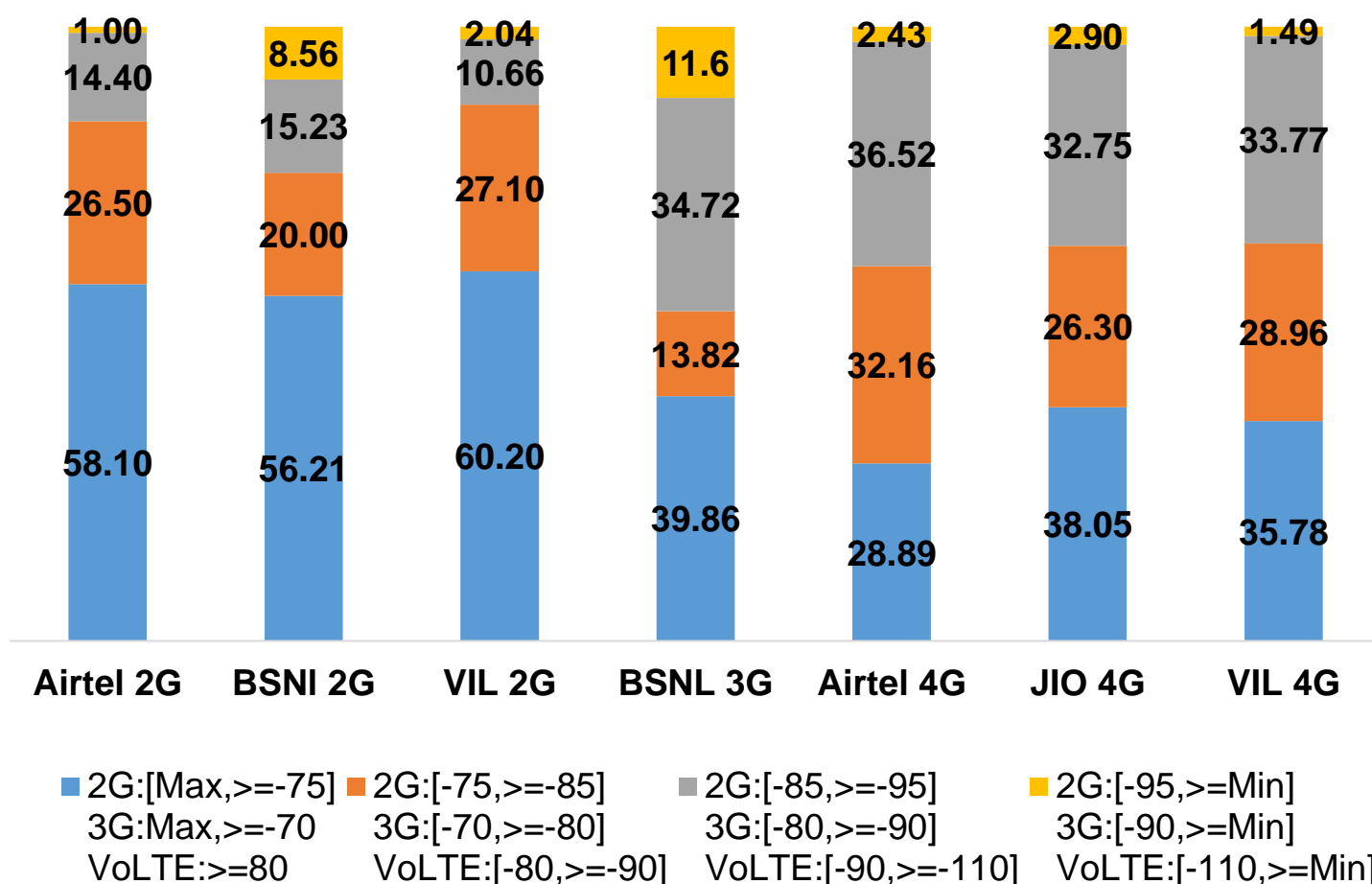
Coverage Details

	Airtel 2G	BSNl 2G	VIL 2G	BSNL 3G	Airtel 4G	JIO 4G	VIL 4G
2G:[-95,>=Min] / 3G:[-90,>=Min] / VoLTE:[-110,>=Min]	1.00	8.56	2.04	11.6	2.43	2.90	1.49
2G:[-85,>=-95] / 3G:[-80,>=-90] / VoLTE:[-90,>=-110]	14.40	15.23	10.66	34.72	36.52	32.75	33.77
2G:[-75,>=-85] / 3G:[-70,>=-80] / VoLTE:[-80,>=-90]	26.50	20.00	27.10	13.82	32.16	26.30	28.96
2G:[Max,>=-75] / 3G:Max,>=-70 / VoLTE:>=80	58.10	56.21	60.20	39.86	28.89	38.05	35.78

Legend:
- 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

Technology99.2	Coverage Rate %
2G	84.6
VoLTE	97.57

2G	VoLTE
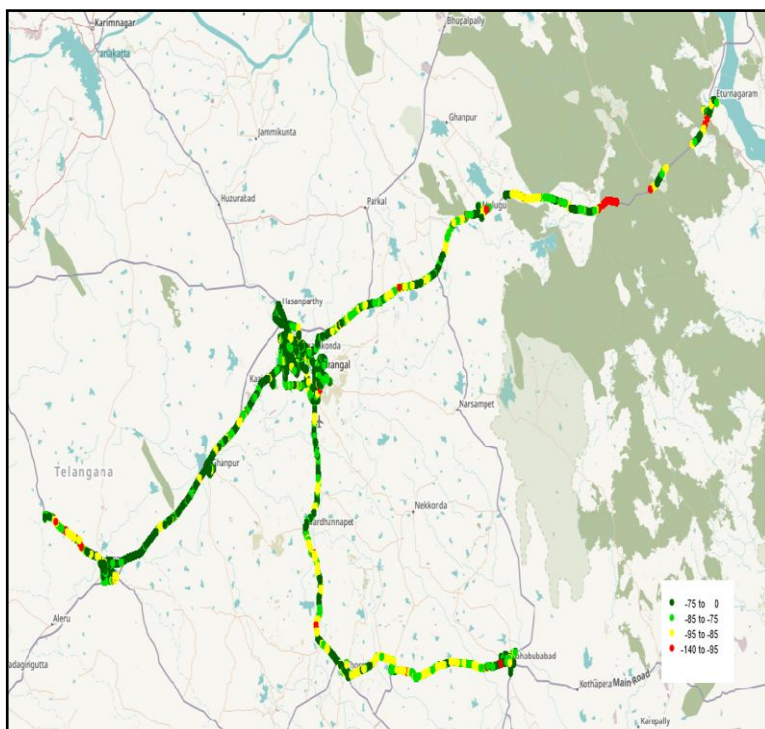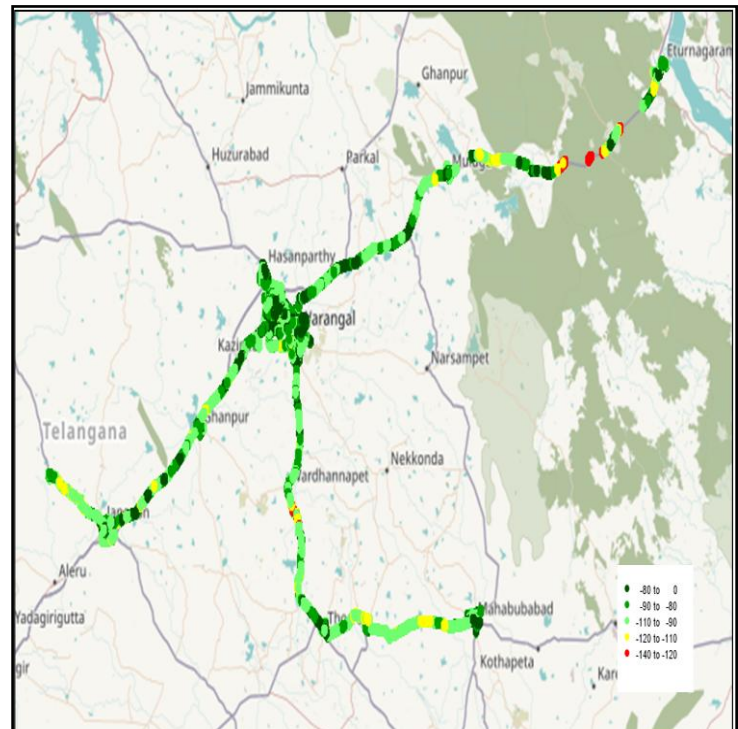
2G		
Overall RxLevel	# Samples	%
[Max, >=-75]	6576911	58.1
[-75, >=-85]	2993783	26.5
[-85, >=-95]	1625851	14.4
[-95, >=Min]	121072	1.0
Total	11317617	100

VoLTE		
Overall RSRP	# Samples	%
[Max, >=-80]	5211140	28.89
[-80, >=-90]	5801368	32.16
[-90, >=-110]	6587803	36.52
[-110, >=-120]	409213	2.27
[-120, >=Min]	27552	0.16
Total	18037076	100

BSNL

Technology	Coverage Rate %
2G	76.21
3G	88.40
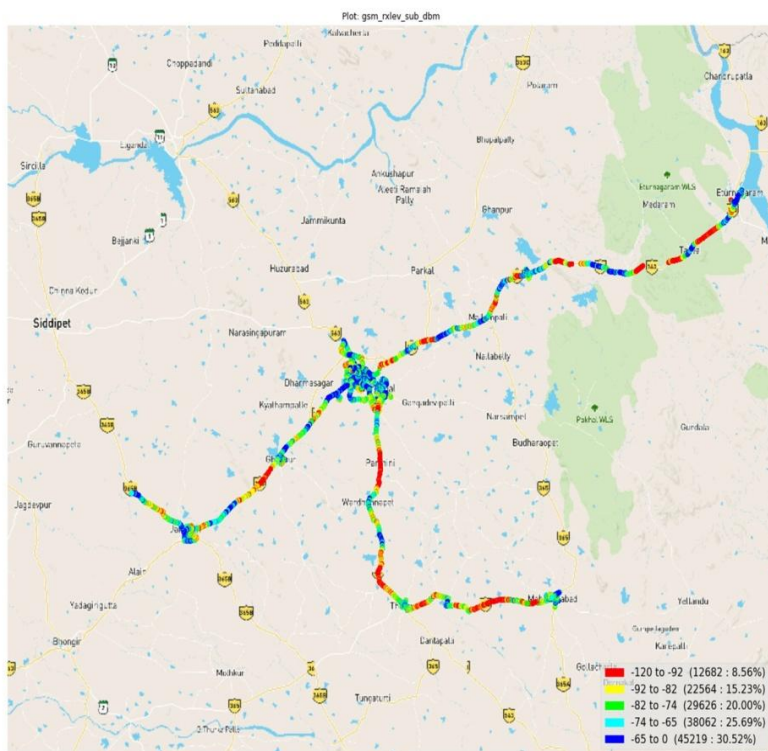
2G	3G
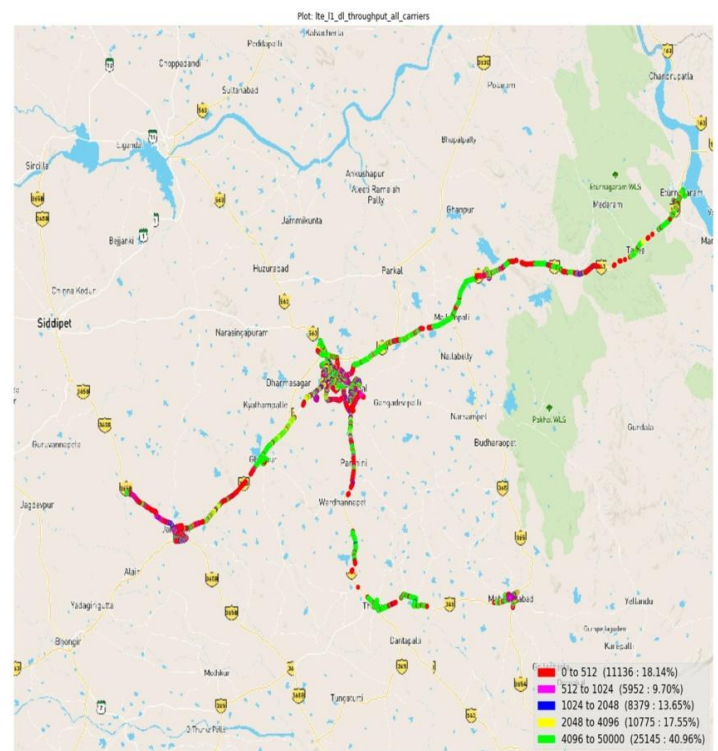
2G		
Overall RxLevel	# Samples	%
[Max, >=-75]	83281	56.21
[-75, >=-85]	29626	20.0
[-85,>=-95]	22564	15.23
[-95, >=Min]	12682	8.56
Total	148153	100

3G		
Overall RSRP	# Samples	%
[Max, >=-70]	116590	39.86
[-70, >=-80]	42556	13.82
[-80, >=-90]	106935	34.72
[-90, >=Min]	35487	11.60
Total	301568	100

JIO

Technology	Coverage Rate %
VoLTE	97.10
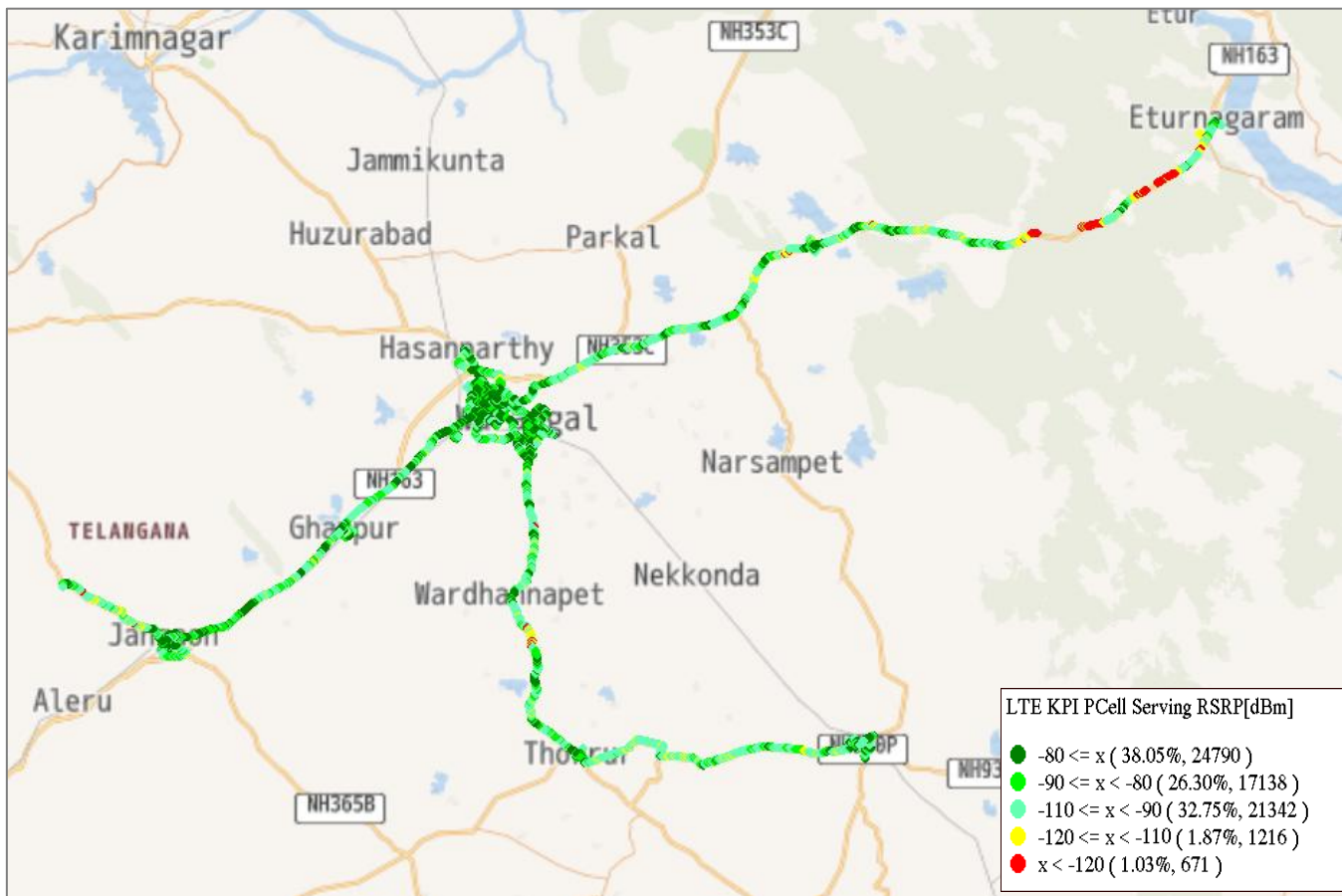
VoLTE		
Overall RSRP	**# Samples**	**%**
[Max, >=-80]	24790	38.05
[-80, >=-90]	17138	26.30
[-90, >=-110]	21342	32.75
[-110, >=-120]	1216	1.87
[-120, >=Min]	671	1.03
Total	**65157**	**100**

VIL

Technology	Coverage Rate %
2G	87.30
VoLTE	98.51

2G	VoLTE
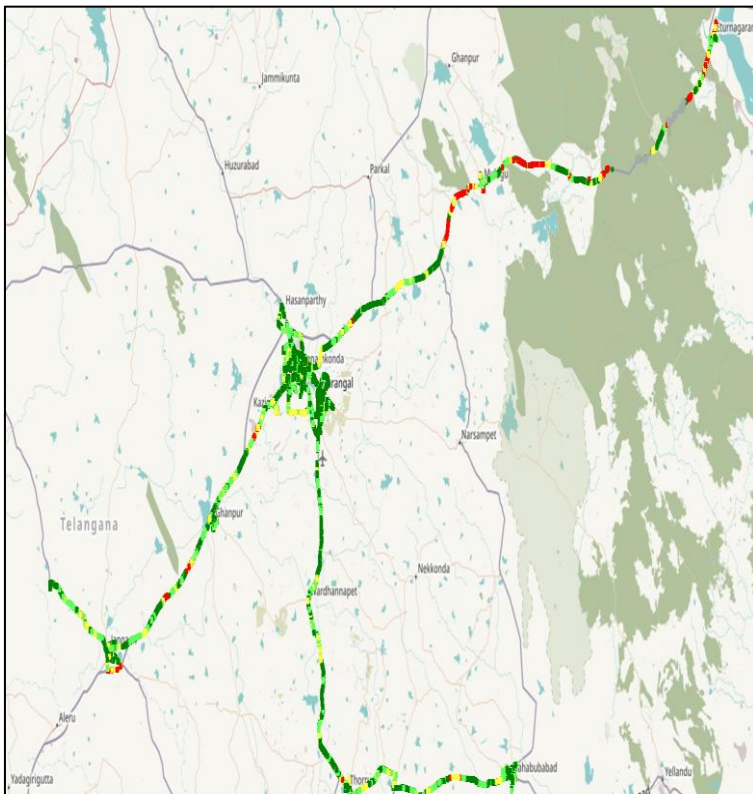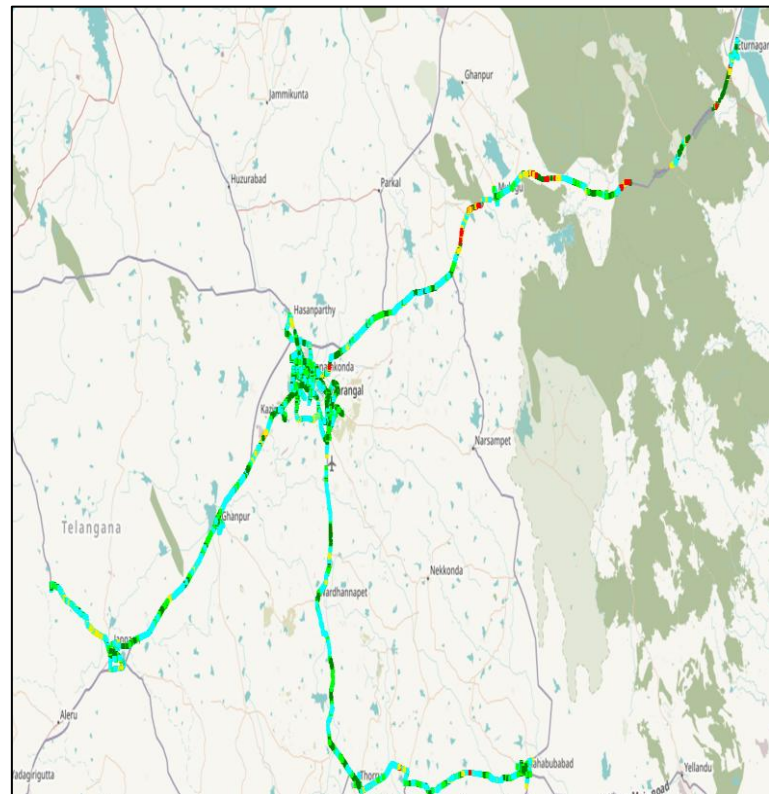
2G		
Overall RxLevel	**# Samples**	**%**
[Max, >=-75]	4488528	60.20
[-75, >=-85]	2020487	27.10
[-85, >=-95]	794759	10.66
[-95, >=Min]	152380	2.04
Total	7456154	100

VoLTE		
Overall RSRP	**# Samples**	**%**
[Max, >=-80]	6500251	35.78
[-80, >=-90]	5260016	28.96
[-90, >=-110]	6134088	33.77
[-110, >=-120]	237861	1.31
[-120, >=Min]	33070	0.18
Total	18165286	100

For measuring voice quality, as per the QoS norms, Rx Qual <=5 for GSM TSPs, EcNo >= -14 dBm for 3G TSP sand SINR >0 in case of VoLTE 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	96.20
BSNL 2G	97.75
VIL 2G	96.82
BSNL 3G	91.93
Airtel 4G	94.12
JIO 4G	96.83
VIL 4G	92.95

RX Quality Distribution

TSP	Below Benchmark %	Rx Quality %
Airtel 2G	3.80	96.2
BSNl 2G	2.25	97.75
VIL 2G	3.18	96.82
BSNL 3G	8.07	91.93
Airtel 4G	5.88	94.12
JIO 4G	3.17	96.83
VIL 4G	7.05	92.95

Rx Quality % Below Benchmark %
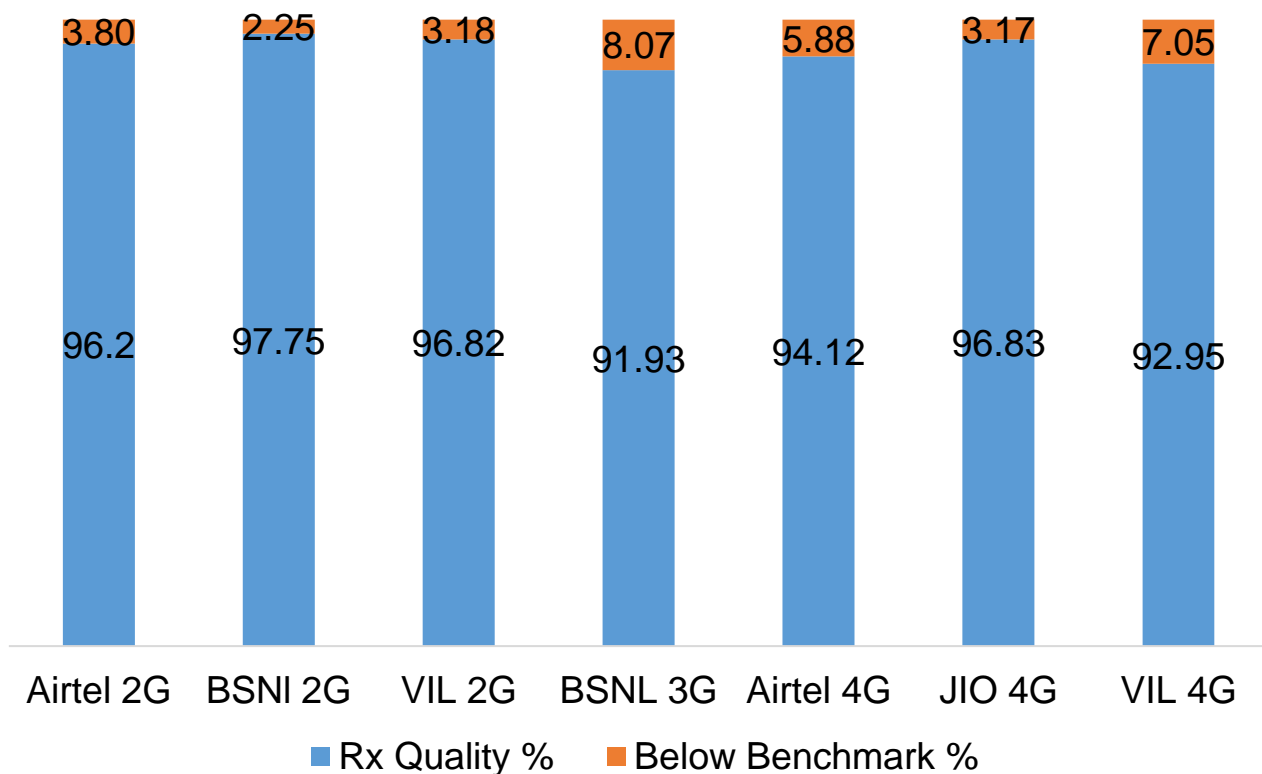
Airtel

Technology	Rx Quality %
2G	96.20%
3G	
VoLTE	94.12%

2G
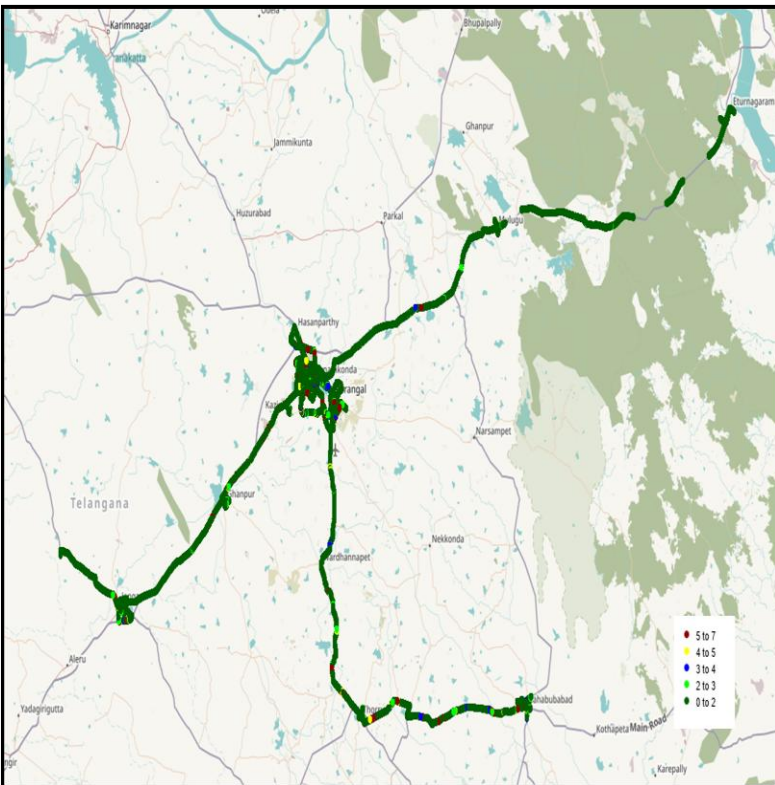
VoLTE
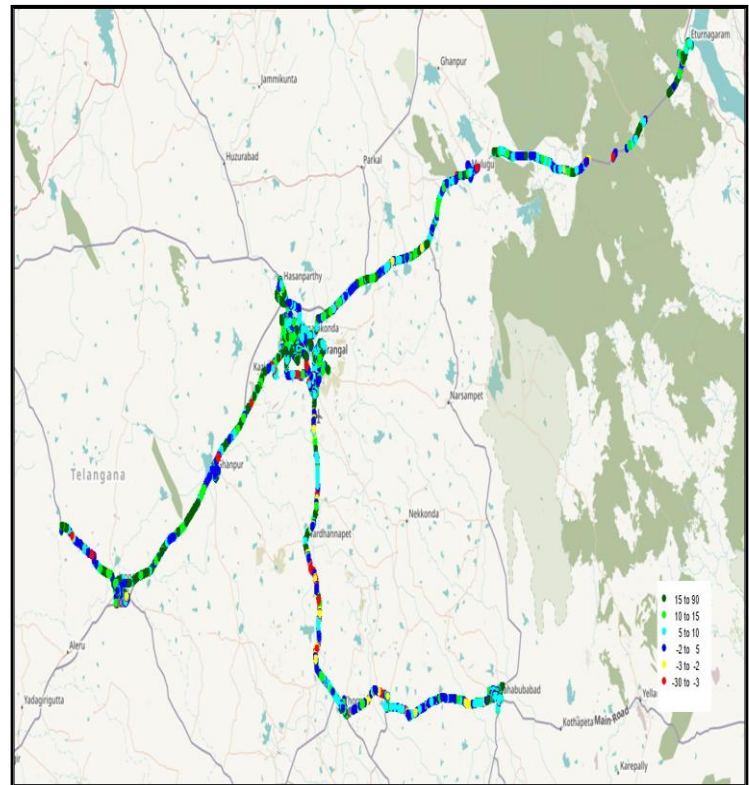
Overall Rx Quality	# Samples	%
(Min, <=2)	10118538	89.41%
(2, <=3)	380060	3.36%
(3 , <=4)	223316	1.97%
(4 , <=5)	165677	1.46%
(5 , <=Max)	430026	3.80%
Total	**11317617**	**96.20%**

Overall SINR	# Samples	%
(Min, <=-3)	430746	2.38%
(-3, <=0)	633837	3.5%
(0, <=5)	4362224	24.1%
(5, <=10)	5186092	28.66%
(10, <=15)	3834544	21.19%
(15, <=Max)	3650794	20.17%
Total	**18098237**	**94.12%**

BSNL

Technology	Rx Quality %
2G	**97.75**
3G	**91.93**

2G	**3G**
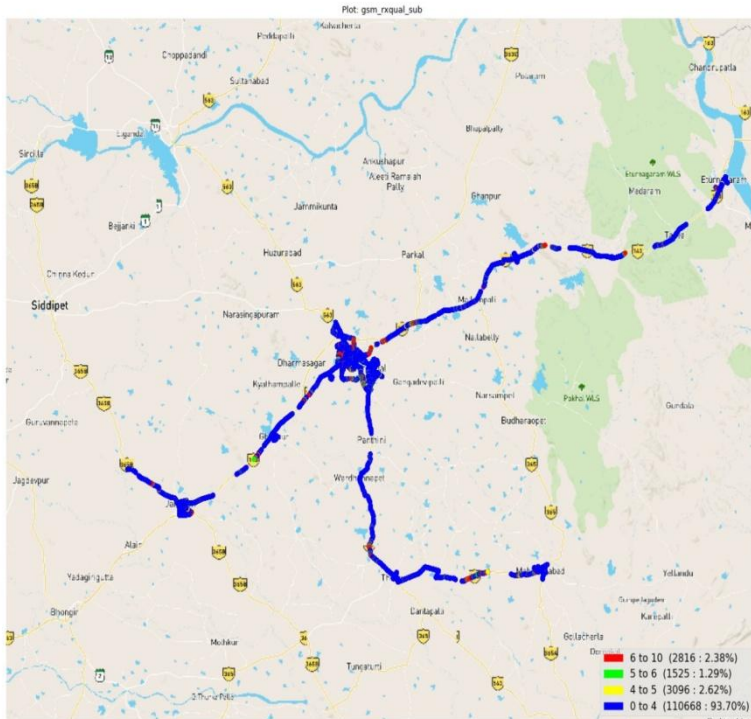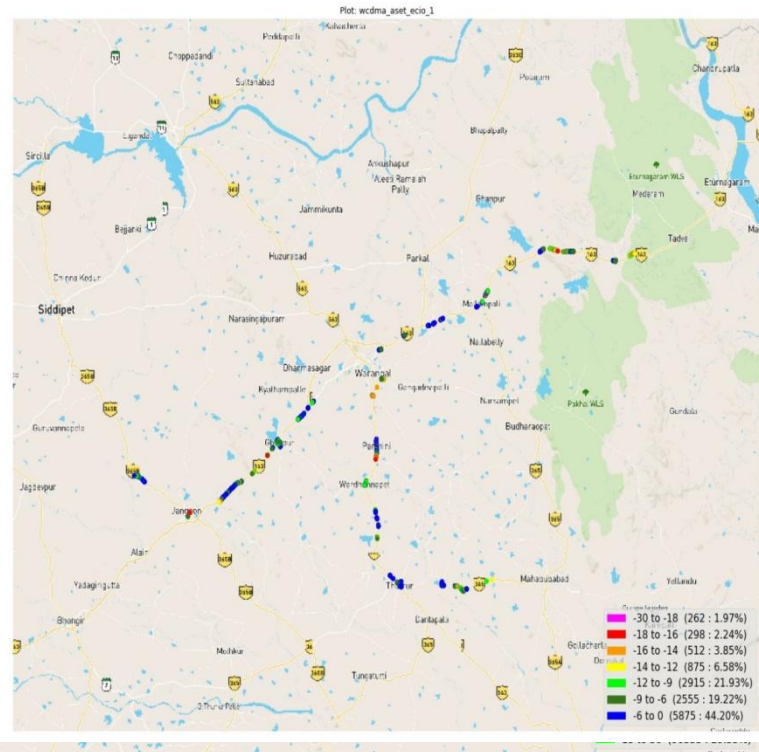
Overall Rx Quality	# Samples	%
(Min, <=4)	110668	93.70
(5, <=4)	3096	2.63
(6 , <=5)	1525	1.29
(6 , <=Max)	2816	2.38
Total		100

Overall ECNO	# Samples	%
(Max, <=-6)	5875	44.20
(-6, <=-9)	2555	19.22
(-12, <=-9)	2915	21.93
(-14, <=12)	875	6.58
(-16, <=14)	512	3.85
(16, <=Min)	560	4.21
Total	305803	100

BSNL

Technology	Rx Quality %
2G	97.62
3G	87.19

2G	3G
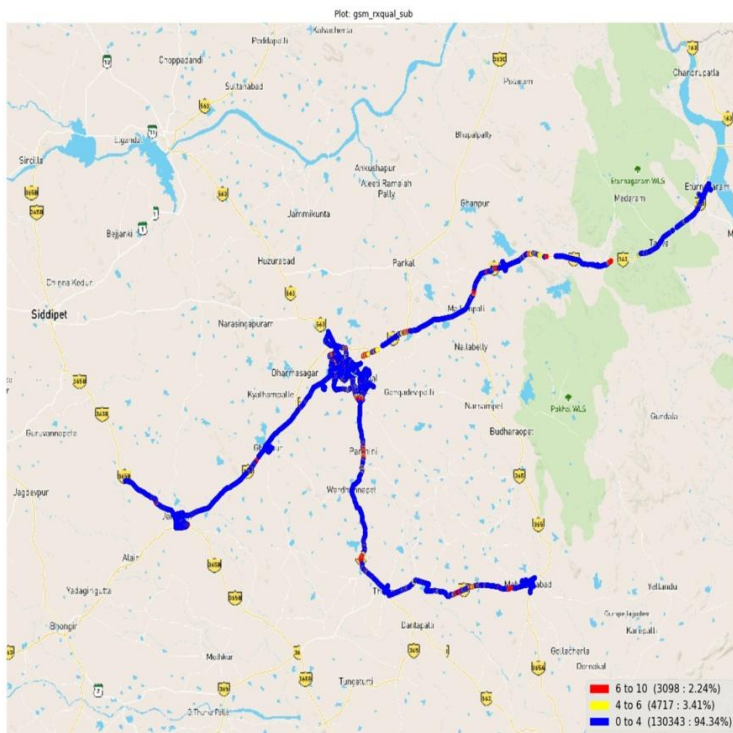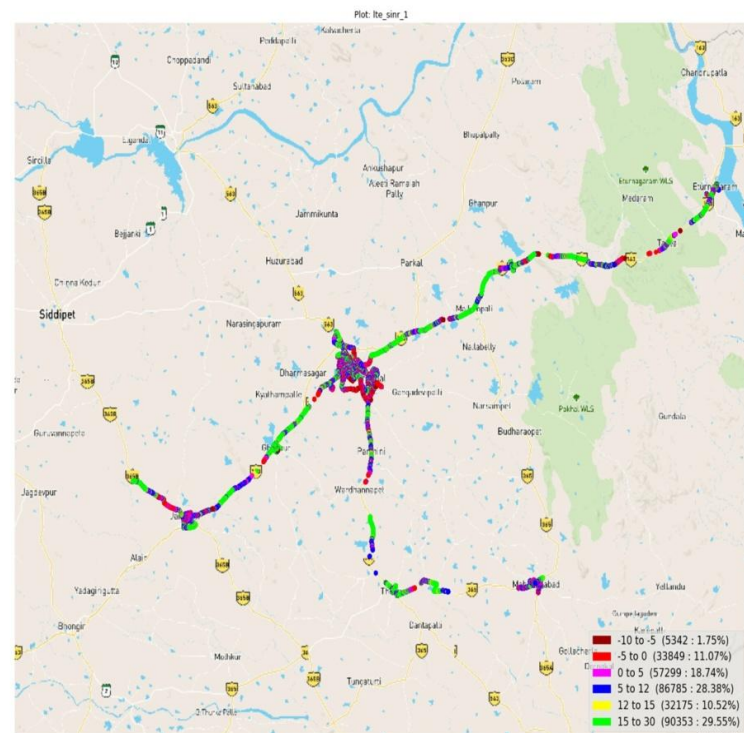
Overall Rx Quality	# Samples	%
(Min, <=4)	110668	93.70
(5, <=4)	3096	2.63
(6 , <=5)	1525	1.29
(6 , <=Max)	2816	2.38
Total	118105	100

Overall SINR	# Samples	%
(Min, <=-5)	5342	1.75
(-5, <=0)	33849	11.06
(0, <=5)	57299	18.74
(5, <=12)	86785	28.38
(12, <=15)	32175	10.52
(15, <=Max)	90353	29.55
Total	305803	100

JIO

Technology	Rx Quality %
VoLTE	96.83

VoLTE

LTE KPI PCell SINR[dB]
- 15 <= x (26.18%, 17057)
- 10 <= x < 15 (22.75%, 14820)
- 5 <= x < 10 (26.44%, 17228)
- 0 <= x < 5 (21.46%, 13986)
- -3 <= x < 0 (1.06%, 693)
- x < -3 (2.11%, 1373)
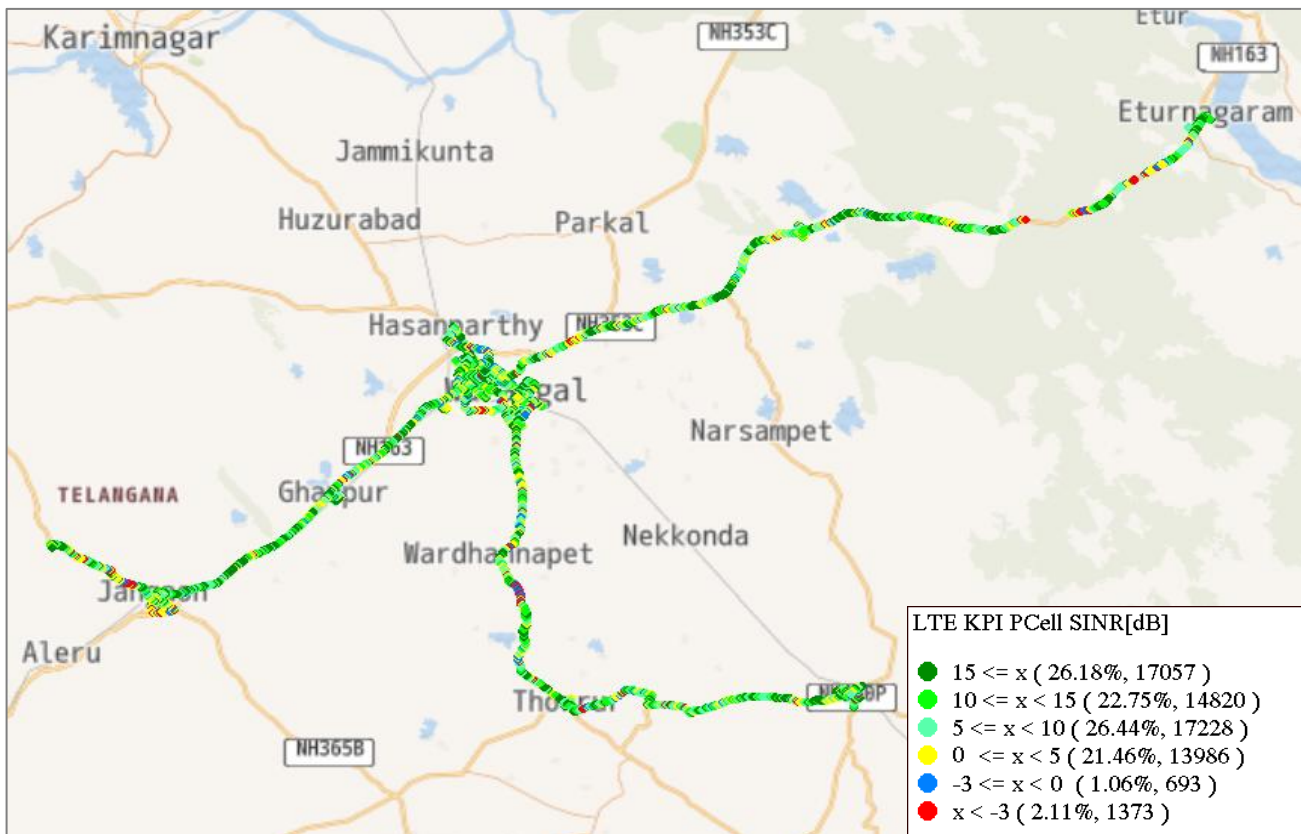
Overall SINR	# Samples	%
(Min, <=-6)	1373	2.11
(-6, <=0)	693	1.06
(0, <=5)	13986	21.46
(5, <=10)	17228	26.44
(10, <=15)	14820	22.75
(15, <=Max)	17057	26.16
Total	**65157**	**100**

VIL

Technology	Rx Quality %
2G	96.82
VoLTE	92.95

2G	VoLTE
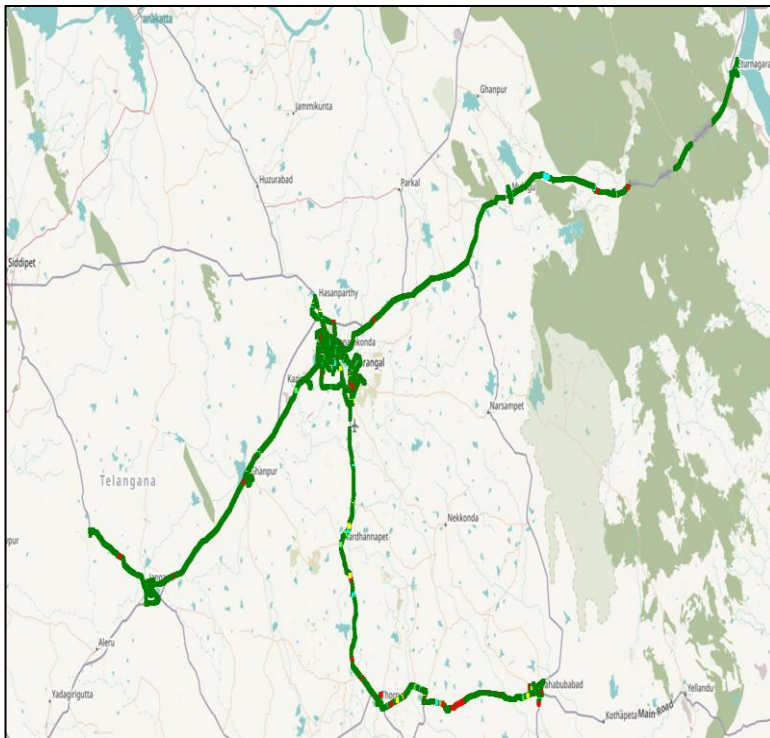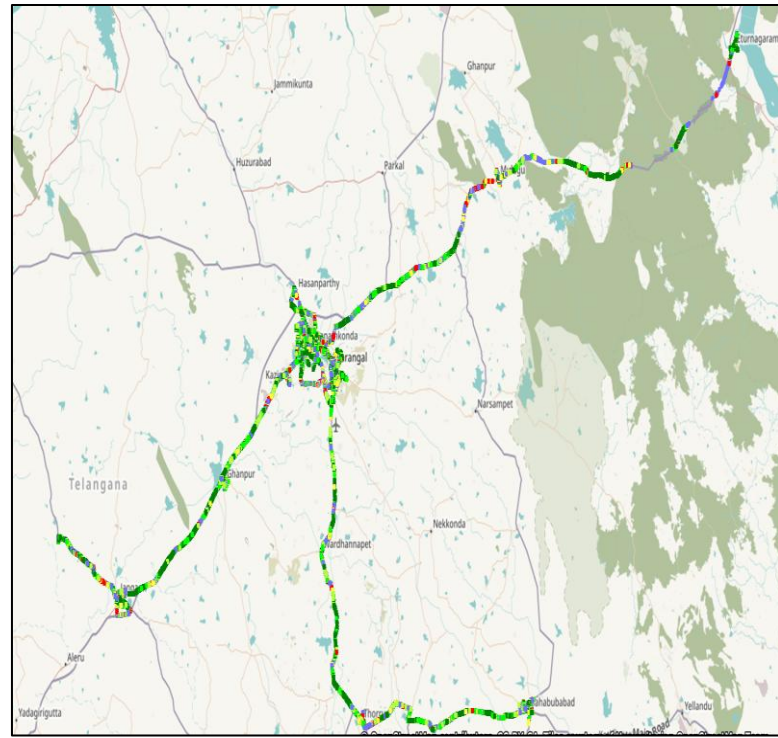
Overall Rx Quality	# Samples	%
(Min, <=2)	6836289	92.93
(2, <=3)	94559	1.29
(3 , <=4)	90090	1.22
(4 , <=5)	101418	1.38
(5 , <=Max)	233798	3.18
Total		100

Overall SINR	# Samples	%
(Min, <=-3)	421186	2.32
(-3, <=0)	858424	4.73
(0, <=5)	2814466	15.49
(5, <=10)	3521882	19.39
(10, <=15)	3502828	19.28
(15, <=Max)	7046500	38.79
Total		100

TSP	% of Time Spent on 3G/VoLTE
BSNL 3G	79.90
Airtel VoLTE	100
JIO VoLTE	99.91
VIL VoLTE	99.89
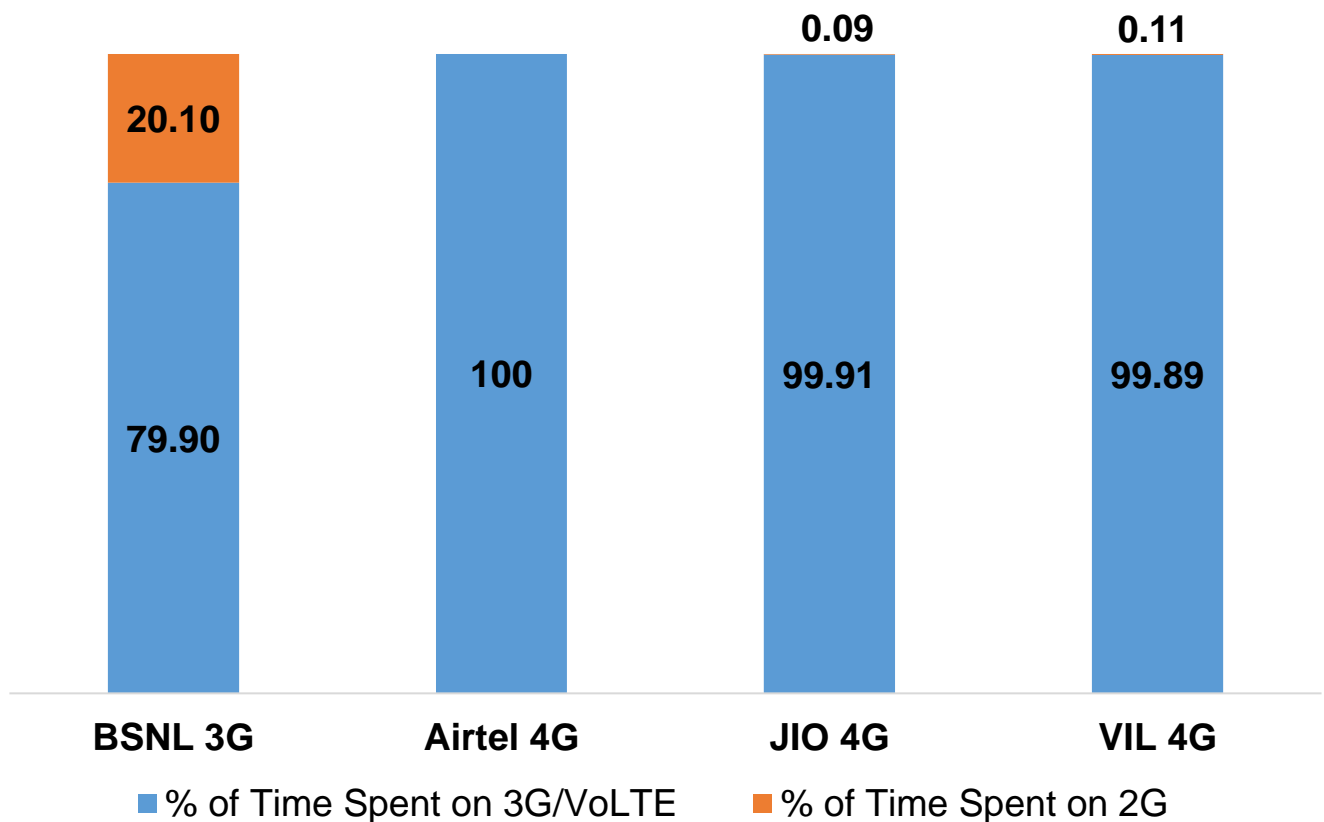
■ % of Time Spent on 3G/VoLTE   ■ % of Time Spent on 2G

Airtel

Technology	Time Spent %
3G / VoLTE	100
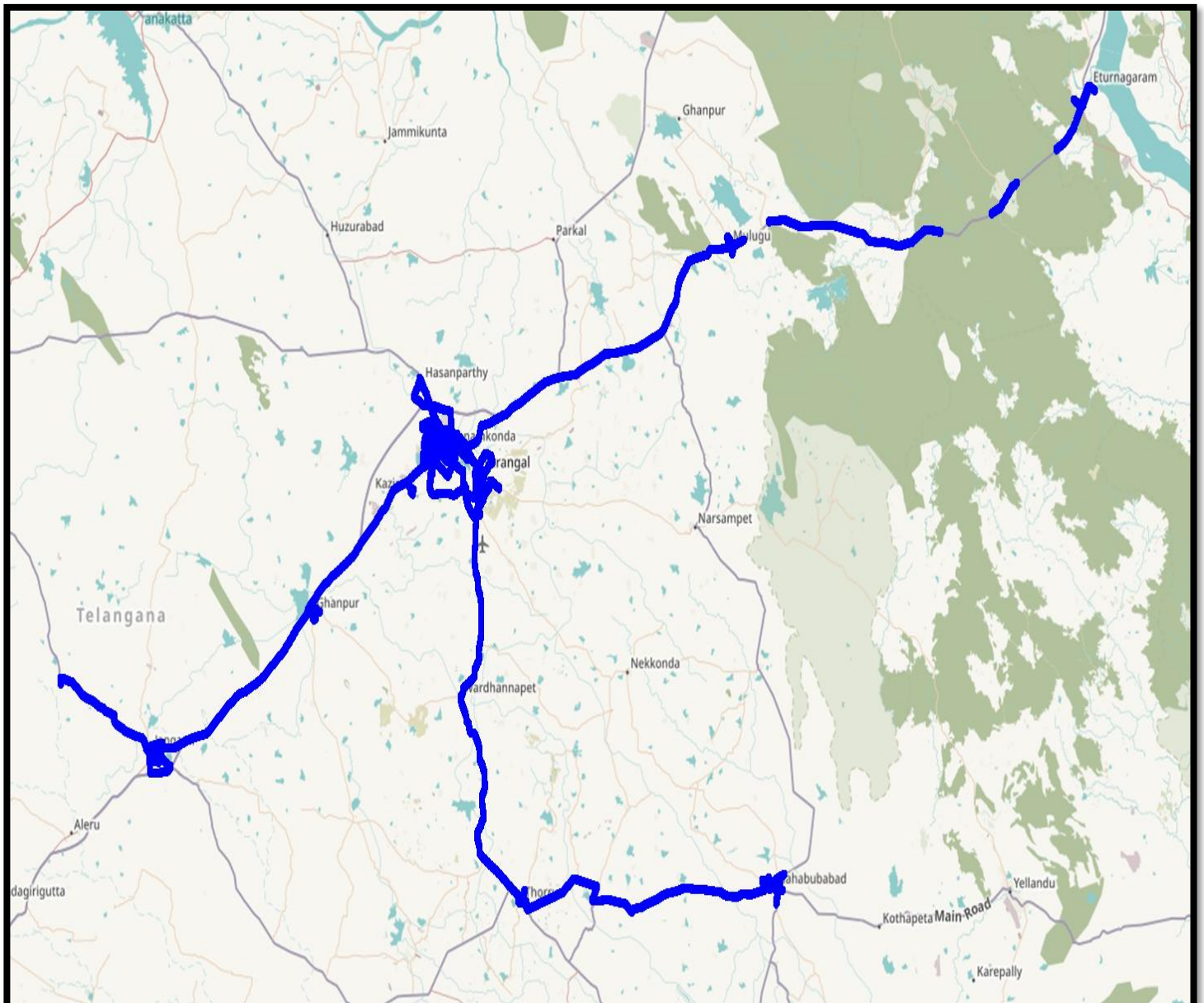
BSNL

Technology	Time Spent on 3G
3G	79.90
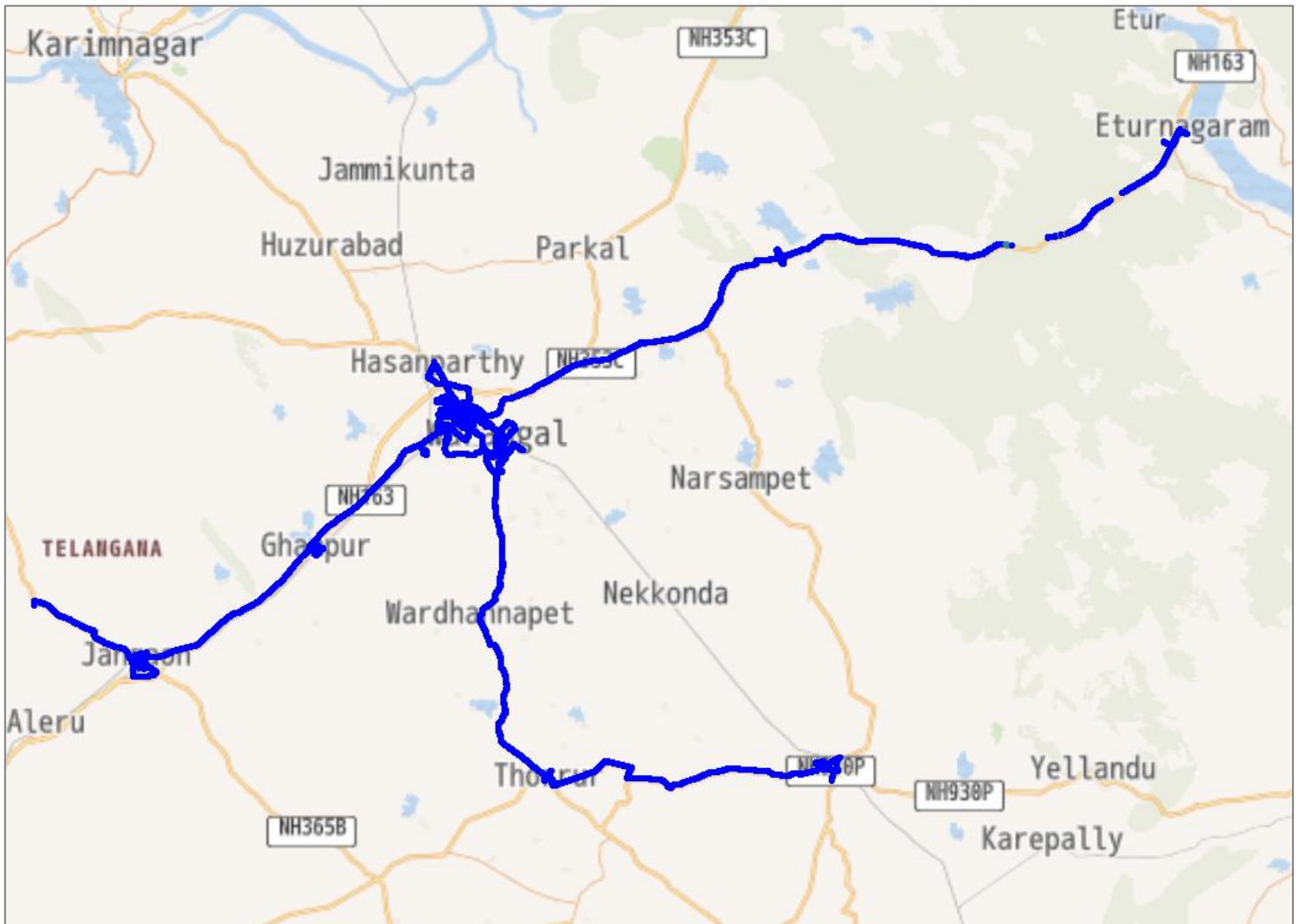
Plot: lte_inst_rsrp_1

Legend:
- -90 to 0 (116590 : 37.86%)
- -95 to -90 (42556 : 13.82%)
- -105 to -95 (76436 : 24.82%)
- -110 to -105 (30499 : 9.90%)
- -120 to -110 (35487 : 11.52%)
- -140 to -120 (6364 : 2.07%)

JIO

Technology	Time Spent %
3G / VoLTE	99.91

VIL

Technology	Time Spent %
3G / VoLTE	99.89
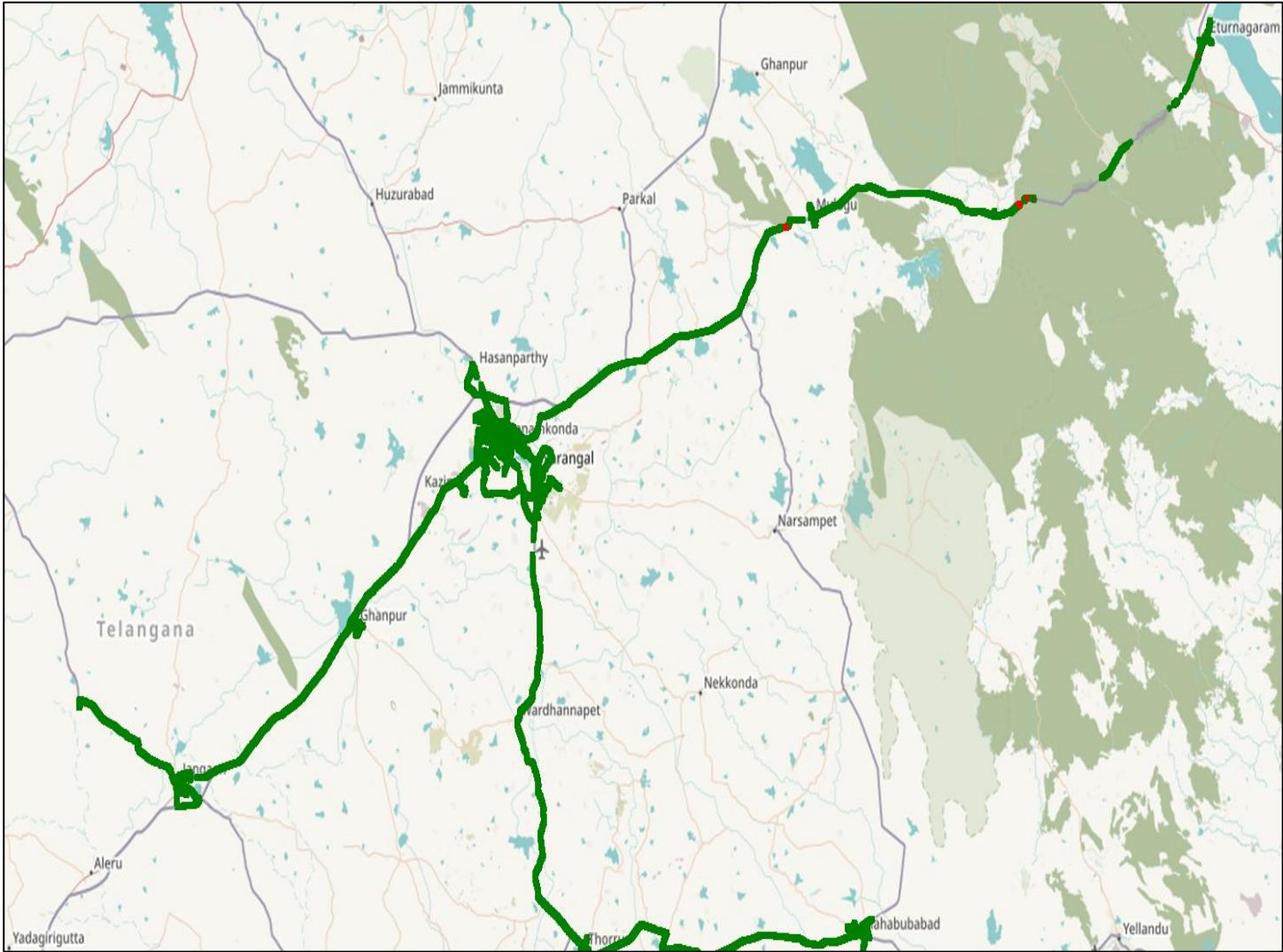
Airtel

Data Statistics - Dynamic Complete SSA

Data KPIs - Overall	4G
Download Throughput (Mbps)	26.97
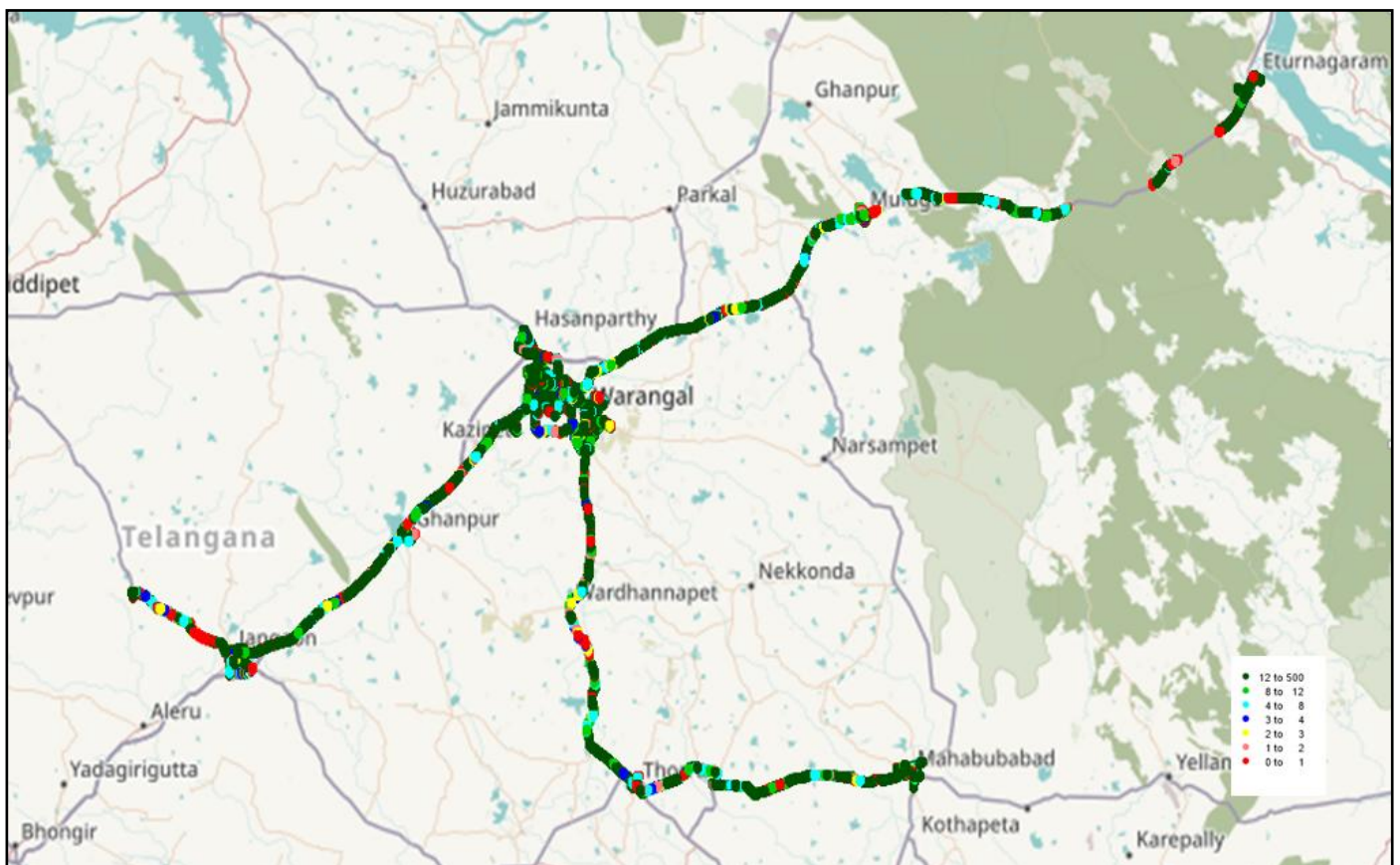
DL throughput	No of Sample	%
0 to 1 Mbps	1217888	6.1
1 to 2 Mbps	360497	1.8
2 to 3 Mbps	371086	1.8
3 to 4 Mbps	391166	1.9
4 to 8 Mbps	1492604	7.4
8 to 12 Mbps	1405587	7.0
>12 Mbps	14828067	73.89
Total	**20066895**	**100**

BSNL

Data Statistics - Dynamic Complete SSA

Data KPIs - Overall	3G
Download Throughput (Mbps)	5.45

Plot: lte_l1_dl_throughput_all_carriers

Legend:
- 0 to 512 (11136 : 18.14%)
- 512 to 1024 (5952 : 9.70%)
- 1024 to 2048 (8379 : 13.65%)
- 2048 to 4096 (10775 : 17.55%)
- 4096 to 50000 (25145 : 40.96%)
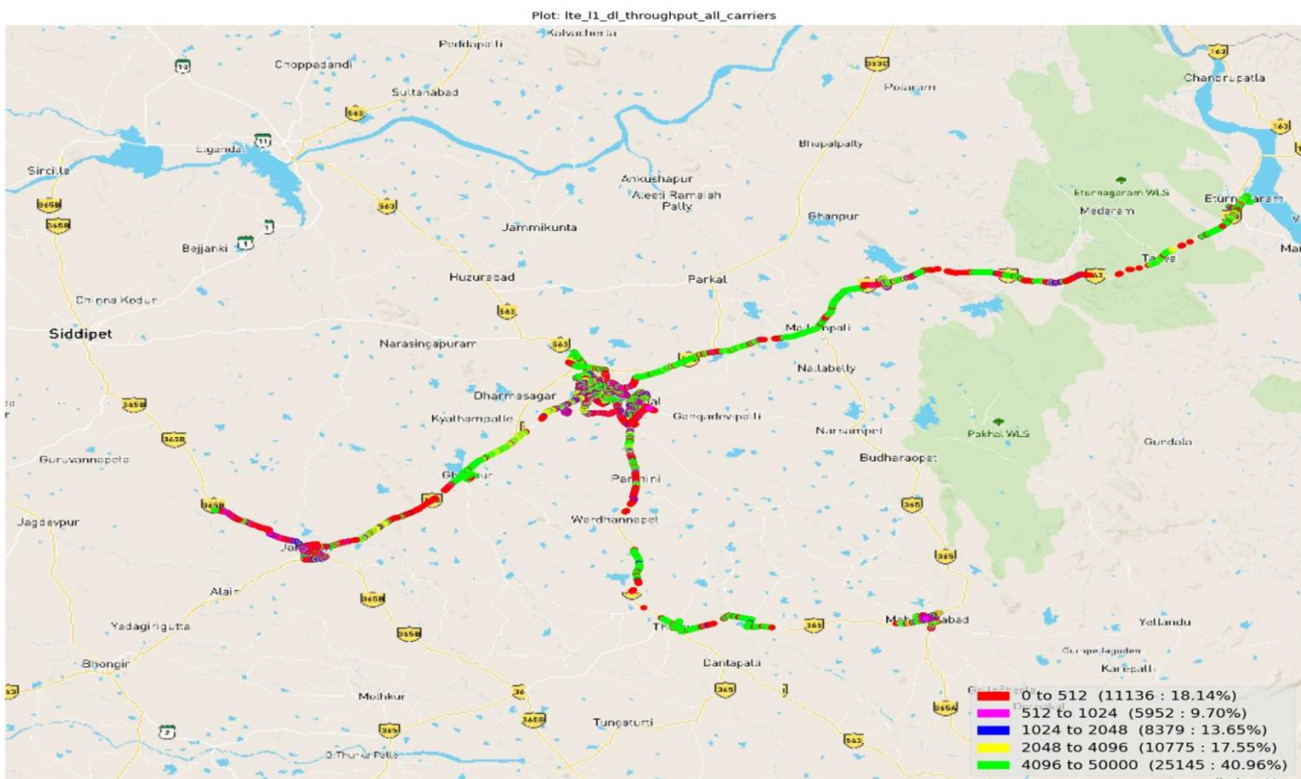
DL throughput	No of Sample	%
0 to 500 kbps	11136	18.14
500Kbps to 1 Mbps	5952	9.7
1 to 2 Mbps	8379	13.65
2 to 4 Mbps	10775	17.55
>4 Mbps	25145	40.96
Total	61387	100

JIO

Data Statistics - Dynamic Complete SSA

Data KPIs - Overall	4G
Download Throughput (Mbps)	48.59

LTE KPI MAC DL Throughput[Mbps]

- 12 <= x (75.66%, 45432)
- 8 <= x < 12 (6.86%, 4122)
- 4 <= x < 8 (7.06%, 4238)
- 3 <= x < 4 (1.64%, 989)
- 2 <= x < 3 (1.61%, 967)
- 1 <= x < 2 (1.57%, 943)
- 0 <= x < 1 (5.60%, 3360)
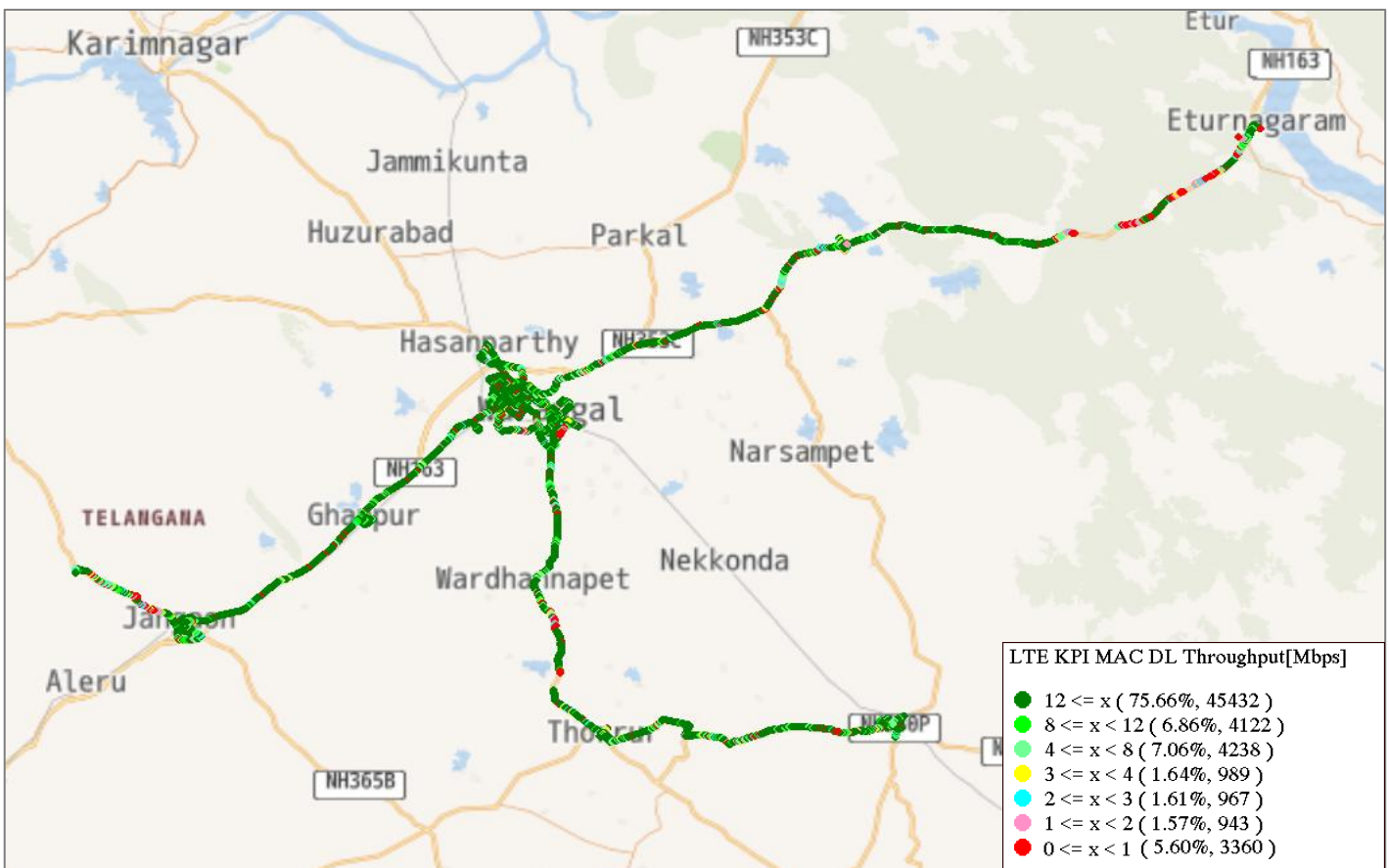
DL Throughput	No of Sample	%
0 to 1 Mbps	3360	5.60
1 to 2 Mbps	943	1.57
2 to 3 Mbps	967	1.61
3 to 4 Mbps	989	1.64
4 to 8 Mbps	4238	7.06
8 to 12 Mbps	4122	6.86
>12 Mbps	45432	75.66
Total	60051	100

VIL

Data Statistics - Dynamic Complete SSA

Data KPIs - Overall	4G
Download Throughput (Mbps)	15.50
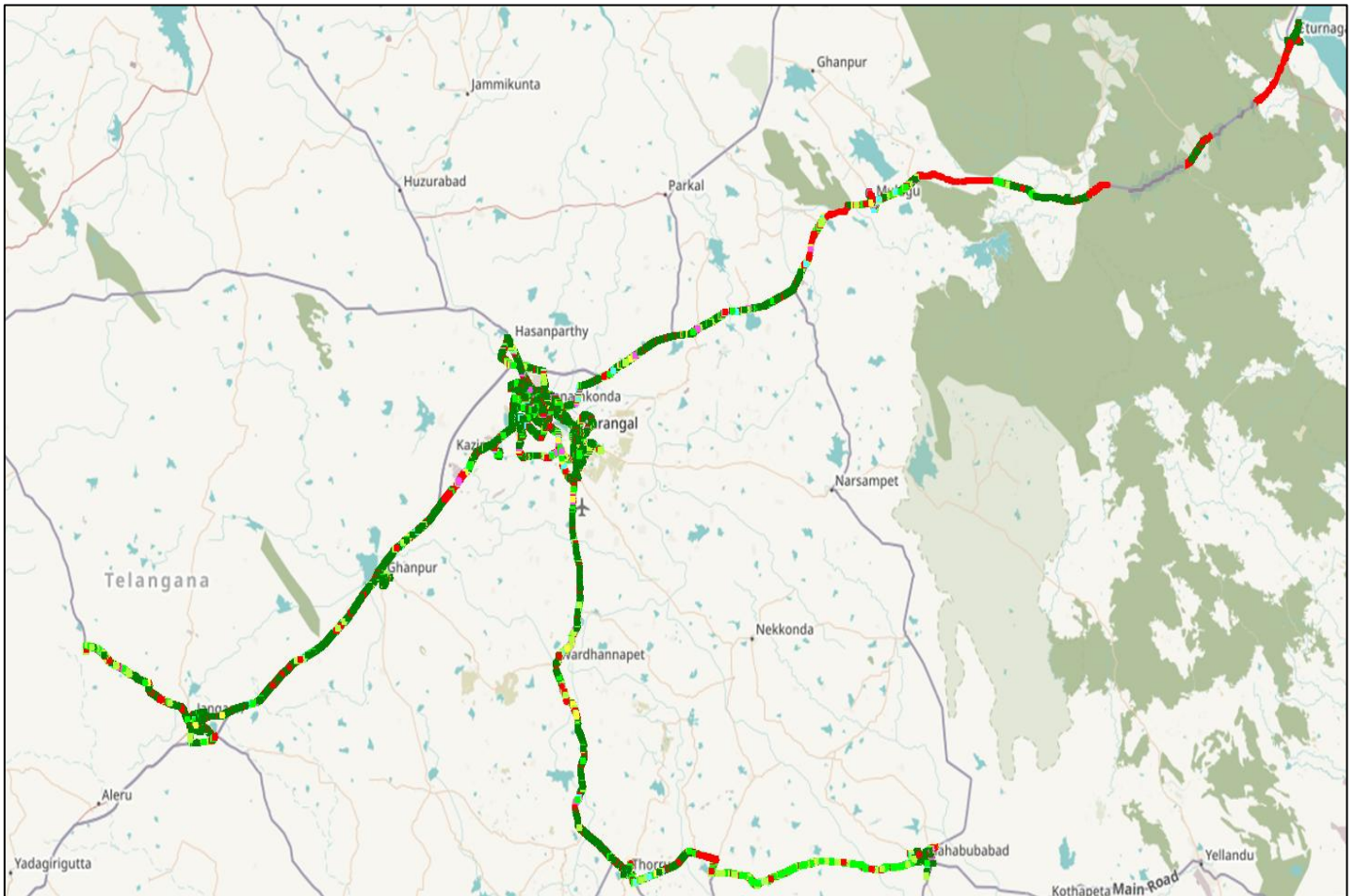
DL throughput	No of Sample	%
0 to 1 Mbps	1967023	7.03
1 to 2 Mbps	463611	1.66
2 to 3 Mbps	541706	1.94
3 to 4 Mbps	584394	2.09
4 to 8 Mbps	2733084	9.76
8 to 12 Mbps	3835872	13.70
>12 Mbps	17866557	63.82
Total	**27992247**	**100**

Airtel

Technology 4G	1.Mahabubabad Railway Station	2.Mulugu Bus Stand	3.Jangaon Bus Stand	4.Kazipet Railway Station	5.Hanamakonda Bus stand	6.Warangal Railway Station	7. Enumamula Market
Download in Mbps	66.40	68.72	72.82	70.67	68.66	56.06	126.43
Upload in Mbps	15.94	18.20	19.89	6.53	11.39	12.19	33.85

BSNL

Technology 4G	1.Mahabubabad Railway Station	2.Mulugu Bus Stand	3.Jangaon Bus Stand	4.Kazipet Railway Station	5.Hanamakonda Bus stand	6.Warangal Railway Station	7. Enumamula Market
Download in Mbps	3.33	30.17	8.49	10.51	10.05	15.06	10.80
Upload in Mbps	0.25	12.32	3.22	4.90	3.82	8.60	3.66

JIO

Technology 4G	1.Mahabubabad Railway Station	2.Mulugu Bus Stand	3.Jangaon Bus Stand	4.Kazipet Railway Station	5.Hanamakonda Bus stand	6.Warangal Railway Station	7. Enumamula Market
Download in Mbps	96.04	85.14	88.26	84.34	80.04	101.39	138.41
Upload in Mbps	17.59	14.95	11.07	11.85	15.51	17.32	34.55

VIL

Technology 4G	1.Mahabubabad Railway Station	2.Mulugu Bus Stand	3.Jangaon Bus Stand	4.Kazipet Railway Station	5.Hanamakonda Bus stand	6.Warangal Railway Station	7. Enumamula Market
Download in Mbps	34.96	22.01	39.45	23.31	22.67	22.85	22.98
Upload in Mbps	4.42	7.32	21.18	9.52	3.76	7.69	18.49

S.No	No of NH/SH routes	NH routes	SH routes	Distance (Km)
NH/SH Routes covered in OADT by Airtel / BSNL / RJIL / VIL
1	Warangal to Thorrur	563	-	51kms
2	Thorrur to Mahabubad	930P	-	40kms
3	Warangal to Eturnagaram	163	-	106kms
4	Hanamakonda to Jangaon	163/365B	-	56kms
5	Jangaon to Bachannapet	365B	-	16kms
6	Warangal to Hasanparthy	563	-	16kms