



Operator Assisted Drive Test (OADT)

For

Solapur

27th to 29th Jan 2026

TRAI RO, Bengaluru

Self-Drive Test by TSP



Drive Test Report
for
Jan Month 2026 Year
Solapur & Nearby Area
27 Dec to 29 Dec 2025
by
TRAI RO ,Bengaluru

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1. Overview

The Operator Assisted Drive Test carried out in Solapur and nearby areas from date 27/01/26 to 29/12/26 From 10:00 AM to 7:00 PM. The drive test covered drive route of around 346 KMs in 3 days and 6 hotspot locations.

1.1 Telecom Service Providers(TSPs),Technologies and frequency bands captured during Drive Test are as below:

Sl. No.	Name of TSP	Technology	Frequency Bands (In MHz)
1	Bharti Airtel Ltd.	2G	1800
2	Bharti Airtel Ltd.	4G	850 , 1800 , 2100 , 2300
3	Bharti Airtel Ltd.	5G	3500
4	BSNL	2G	900
5	BSNL	3G	2100
6	BSNL	4G	2100,700 ,2500
7	Reliance JIO Infocomm Ltd.	4G	850 ,1800 ,2300
8	Reliance JIO Infocomm Ltd.	5G	700 ,3500
9	Vodafone Idea Ltd.	2G	900, 1800
10	Vodafone Idea Ltd.	3G	NA
11	Vodafone Idea Ltd.	4G	900 ,1800 , 2100,2300 ,2500

(1) Quality of Service parameters measured:

Voice Service:

Dynamic	Static (Hotspot Location)
Call setup time	Call setup time
Call setup success rate (CSSR)	Call setup success rate (CSSR)
Dropped Call rate	Dropped Call rate
Call Silence Rate	
Handover Success Rate (HOSR)	
Packet Drop Rate (Uplink & Downlink)	
Mean Opinion Score (MOS)	
Signal Strength	

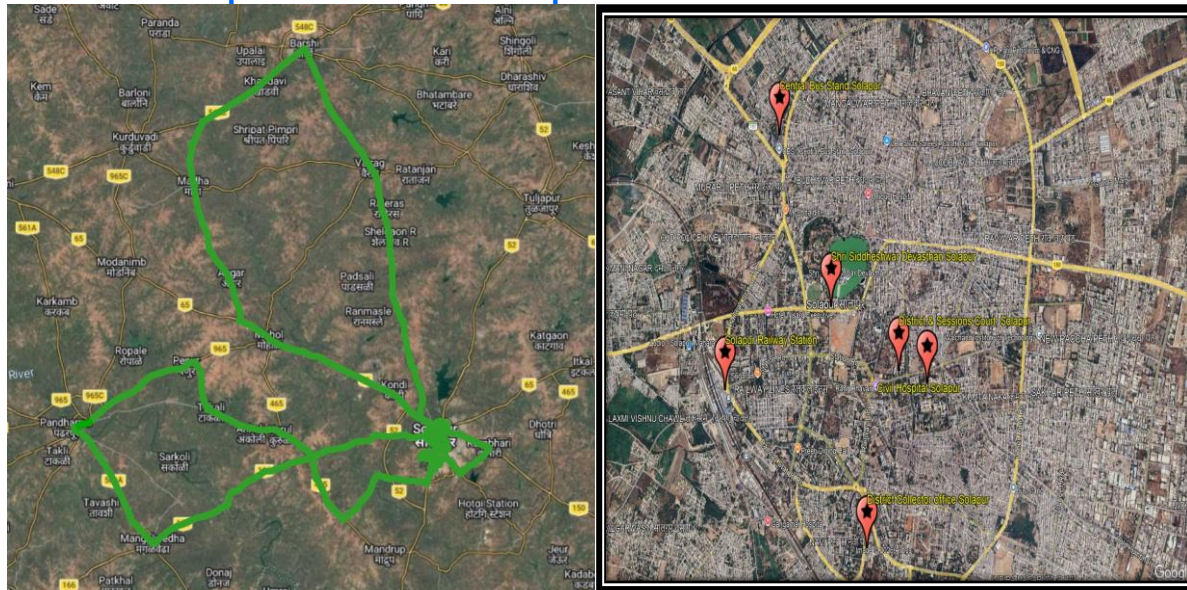
(2) Data Service:

Dynamic	Static (Hotspot Location)
Data speed (DL / UL both)	Data speed (DL/UL both)
Latency	Latency
Jitter	Jitter
	Session Setup Success Rate (DL/UL)
	Packet Drop rate
	Web browsing delay
	Video Streaming performance

2. Executive Summary

This report covers the findings of the OADT undertaken in Solapur, Maharashtra License Service Area (LSA) during the month of Jan (2026) under the supervision of TRAI Regional Office (RO), Bengaluru. Details of route/ area covered during the OADT is as given below:

2.1 Route Map of Drive test & Hotspot locations:



2.2 Drive Test Area detail

Date	Duration 09:00 AM to 08:00 PM	Drive test route	Distance covered (in Kms)
27-Jan-26	09:00AM to 08:00 PM	Solapur-Barshi- Madha-Mohol-Solapur	170
28-Jan-26	09:00AM to 08:00 PM	Solapur- Penum-Pandharpur- Mangalwedha-Solapur	180
29-Jan-25	09:00AM to 08:00 PM	Solapur City and Surrounding Areas	65

Date	Time	Hotspot Location	Latitude / Longitude
27-Jan	2:41 pm	Railway Station Solapur	17.664768, 75.893764
27-Jan	5:30 pm	Collectorate office	17.655090, 75.906742
28-Jan	4:58 pm	Siddheshwar Temple	17.670880, 75.903394
28-Jan	3:30 pm	District Court Solapur	17.665822, 75.909629
28-Jan	4:30 pm	District Hospital Solapur	17.665528, 75.912384
29-Jan	4:30 pm	MSRTC Central Bus Stand	17.681822, 75.898523

2.3 Details of Drive Test Tools used:

Airtel - TEMS Investigation 27.1

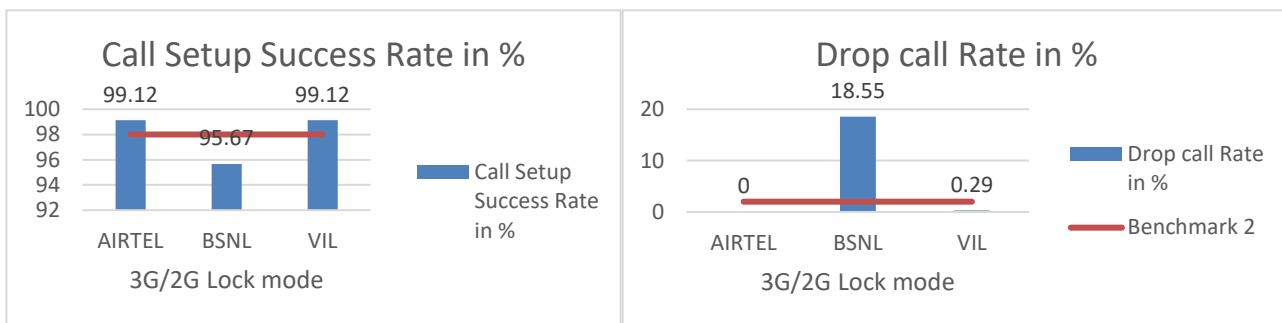
BSNL – Azenqos 4 Handsets & NEMO Handy 01.

JIO – XCAL.

VIL – Azenqos

2.4 Key findings(Voice & Data)

2.4.1 Voice Service performance in 3G/2G mode only

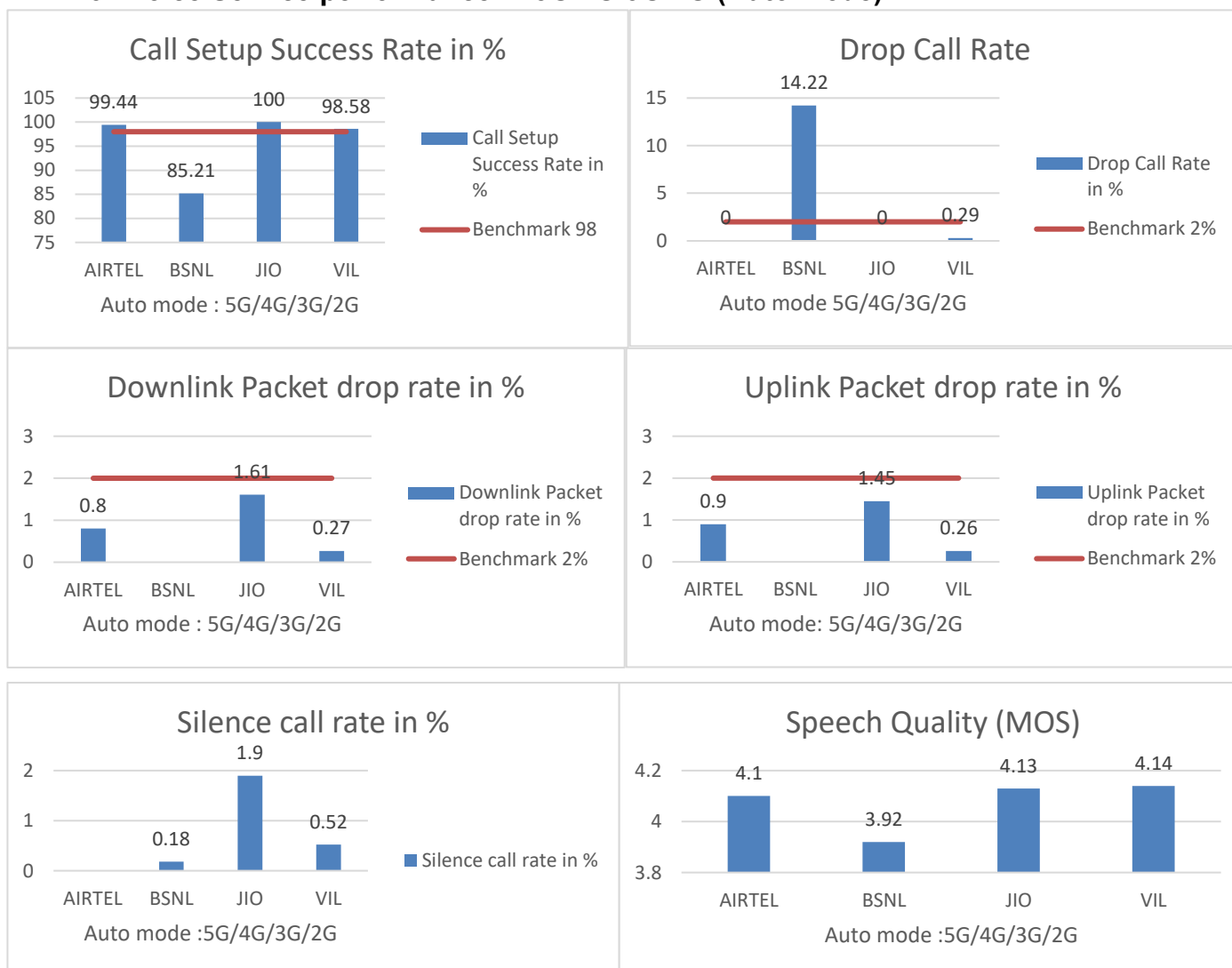


Parameter	Benchmark	AIRTEL	BSNL	VIL
Call Attempts		336	193	342
Call Setup Success Rate(in%)	$\geq 98.0\%$	99.12%	95.67	99.12
Drop Call Rate(in%)	$\leq 2\%$	0	18.55	0.29
Call Setup Time-Average(in Seconds)		3.57	3.58	2.93
Handover Success Rate(in %)	$\geq 95\%$	99.20%	90.02	98.52

2.4.2 Number of Cell ids latched during drive test (3G/2G)

Technology	AIRTEL	BSNL	VIL
3G	NA	179	NA
2G	428	210	476

2.4.3 Voice Service performance in 5G/4G/3G/2G (Auto mode)

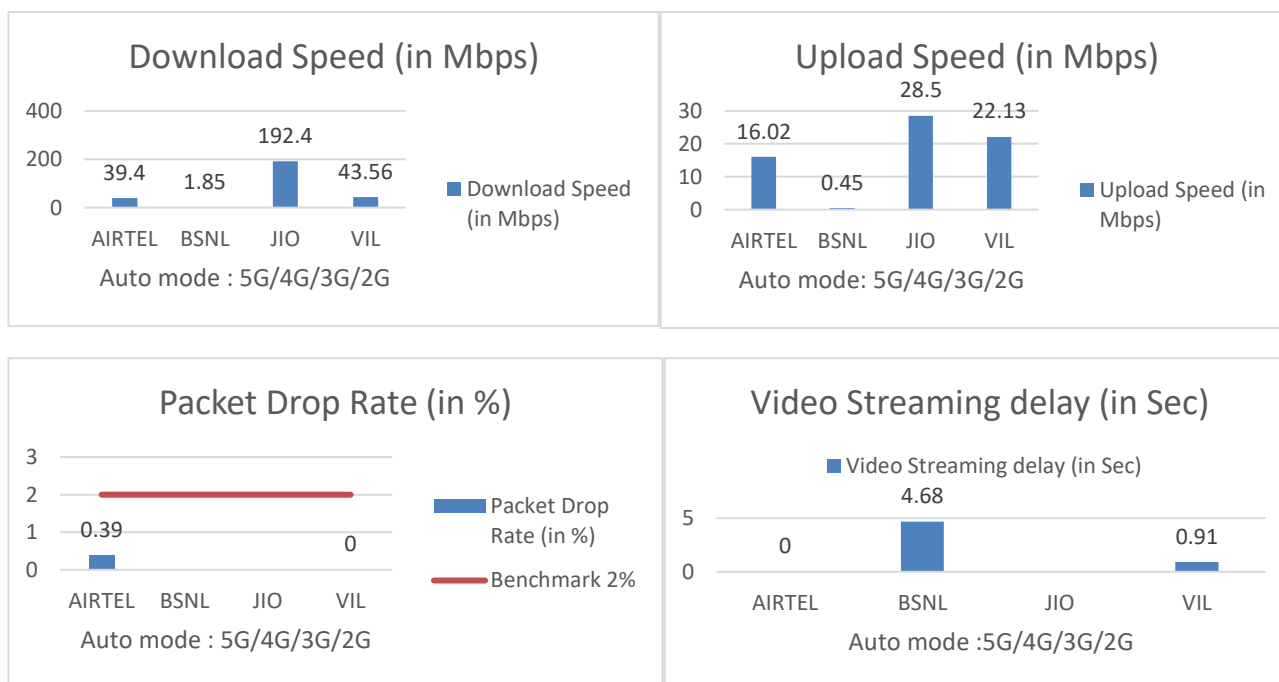


Parameter	AIRTEL	BSNL	RJIL	VIL
Call Attempts	358	274	313	352
Call Setup Success Rate%	99.44%	85.21	100%	98.58
Drop Call Rate%	0	14.22	0%	0.29
Call Setup Time-Average(Second)	0.39Sec	3.9	1.09	1
Handover Success Rate%	99.66%	98.51	100%	99.94
Downlink Packet drop rate %	0.80%	NA	1.61%	0.27
Uplink Packet drop rate%	0.90%	NA	1.45%	0.26
Silence Call Rate%*	-	0.18	1.90%	0.52
Speech Quality (AverageMOS)	4.001	3.92	4.13	4.14

2.4.4 Number of Cell ids latched during drive test (Automode)

Technology	AIRTEL	BSNL	RJIL	VIL
5G	0	-	274	NA
4G	917	0	1033	521
3G	NA	11	-	NA
2G	0	72	-	1

2.4.5 Data performance in 5G/4G/3G/2G(Automode)



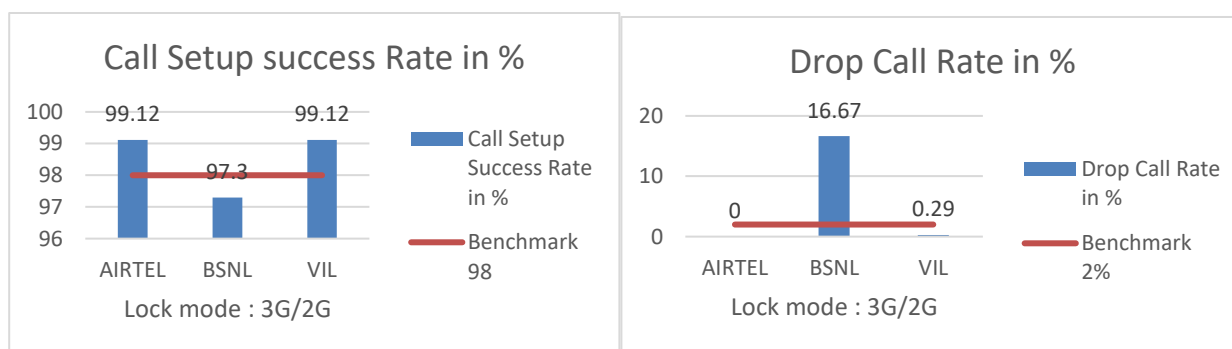
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	9.43	1.854	-	24.6
	Average	39.4	16.358	192.4	43.56
	80thPercentile	60.209	44.152	358.9	73.02
Download Session Setup Success Rate%		100%	62.01%	100	100
Upload speed (Mbits/s)	Typical	2.85	0.45	-	10.2
	Average	16.02	4.562	28.5	22.13
	80thPercentile	29.28	14.205	51.7	32.97
Upload Session Setup Success Rate%		100%	55.27%	100	100
Latency(in ms)	50thPercentile	57.2	NA	26	35.29
Jitter(in ms)	Average	5.9 ms	NA	14.4	0.38

Packet Drop Rate%	0.39%	NA	NA	0
Web browsing delay(in sec)	-	9.82	NA	1.9
Video Streaming performance for video	-	4.68	NA	0.91

Detailed QoS Performance Analysis

3. Performance Analysis-Dynamic

3.1 Voice Service Performance(3G/2GLockmode)-Dynamic



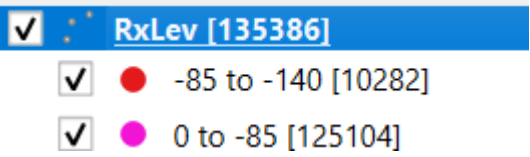
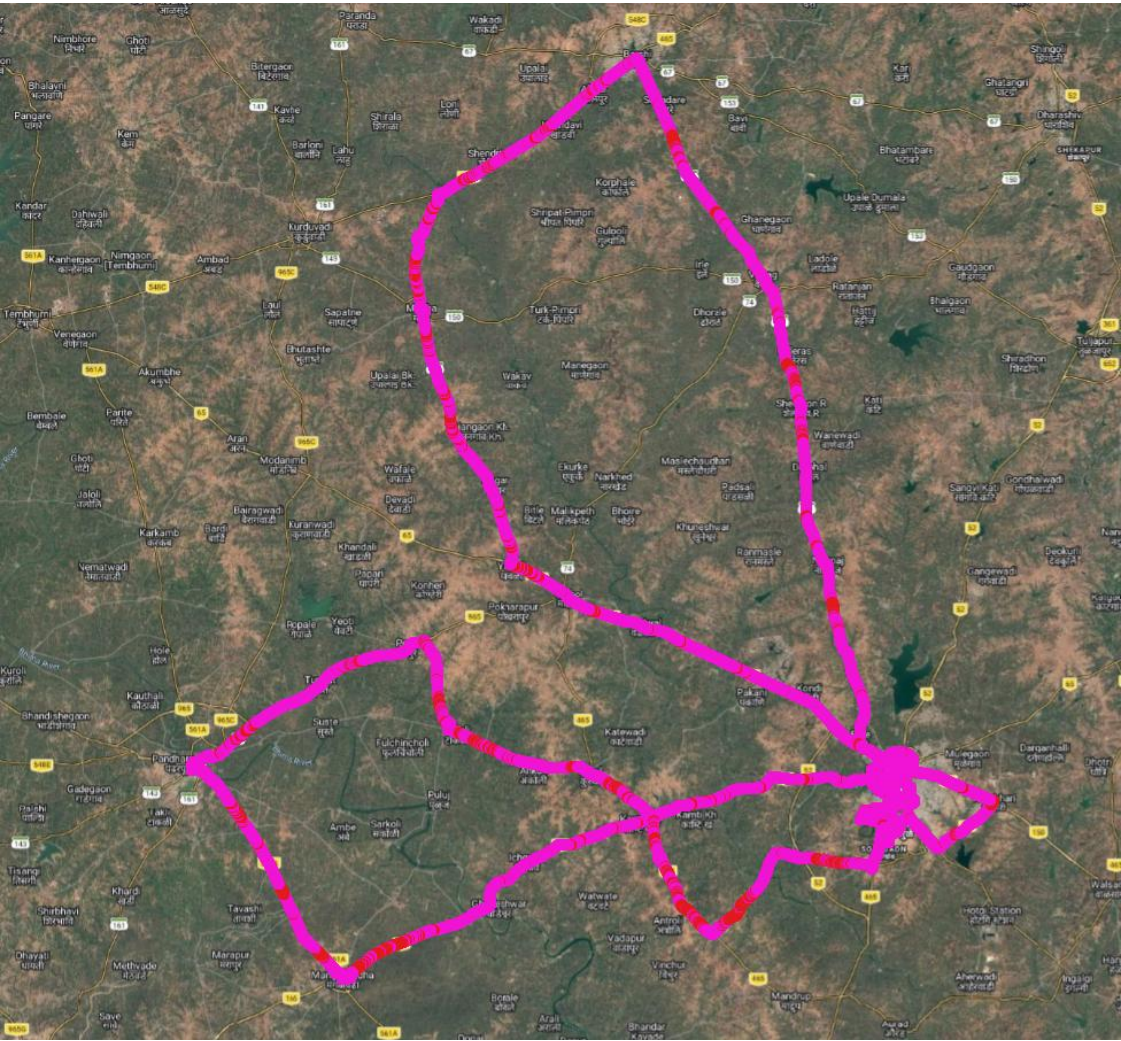
Parameters	Airtel	BSNL	RJIL	VIL
Total Distance covered(in Kms)	415	360	N/A	415
No .of Call Attempts	339	222	N/A	342
No. of Call Established	336	216	N/A	339
Call setup success rate(CSSR)%	99.12%	97.30%	N/A	99.12
No. of Drop Call	0	36	N/A	3
Drop Call Rate%	0%	16.67%	N/A	0.29
Call Setup Time Average(Sec.)	3.57	3.32	N/A	2.93
No. of Handover Attempts	470	188	N/A	676
No .of Handover success	463	173	N/A	666
HOSR%	98.51%	92.02%	N/A	98.52
Total no of RLT Occurrence	103547	NA	N/A	NA
No of RLT>48	0	NA	N/A	NA

3.1.1 Number of Cell ids latched during drive test (3G/2G-Lockmode)

Number of unique Cell ids covered in Voice test				
Technology	AIRTEL	BSNL	RJIL	VIL
3G	NA	179	NA	NA
2G	428	233	NA	476

3.1.2 Signal Strength Map:(3G/2G-Lockmode) Airtel

Signal Strength Map (for each TSP)	Map Legend: 2G- Pink (Rx Level $\geq$ -85 dBm), 3G- Sky blue (RSCP Level $\geq$ -90 dBm) Red (Rx Level $<$-85 dBm) Dark Blue (RSCP Level $<$ -90 dBm)
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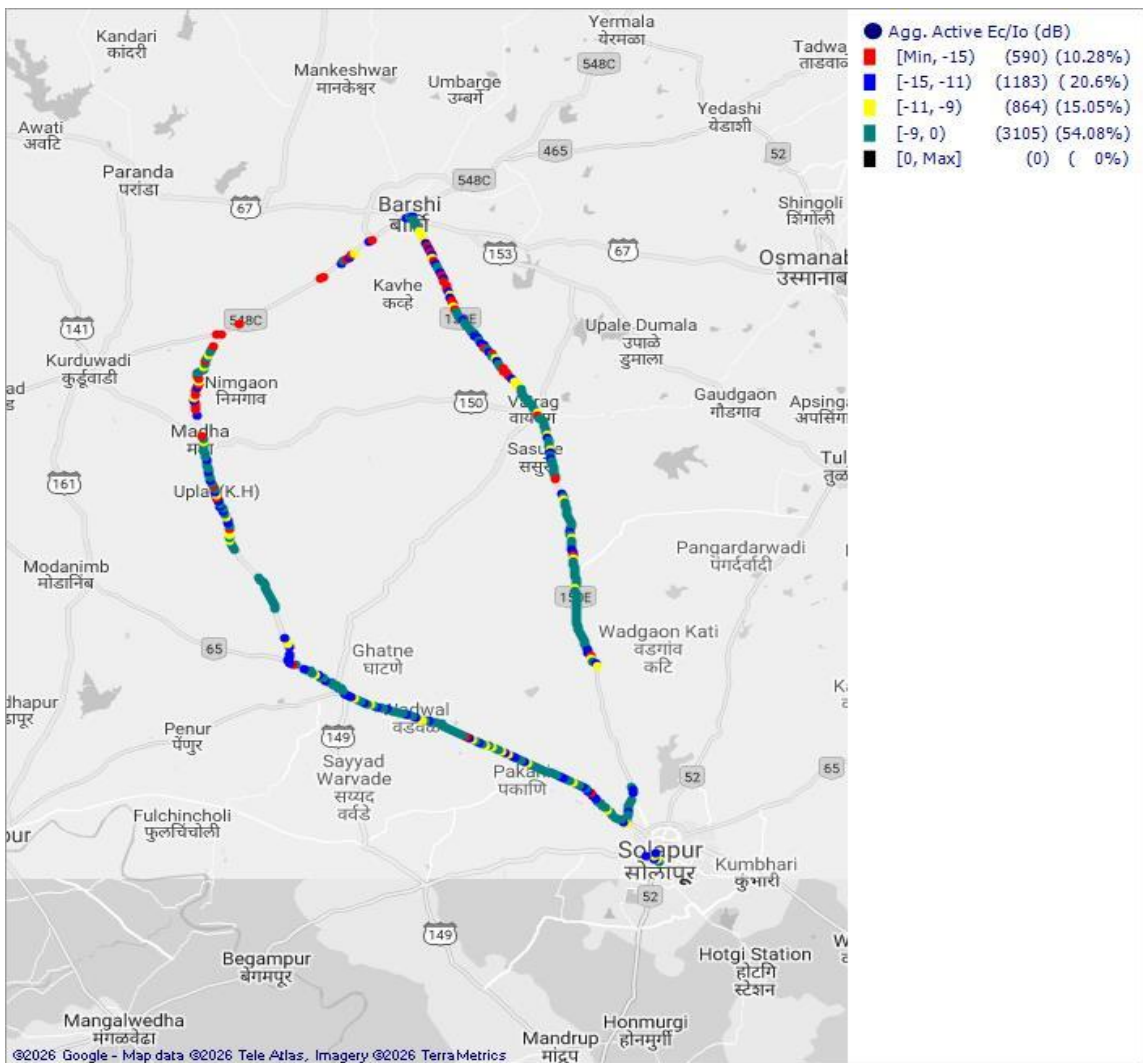
Signal Strength Map (for each TSP)

Map Legend:

2G- **Pink** (Rx Level ≥ -85 dBm),
3G- **Sky blue** (RSCP Level ≥ -90 dBm)

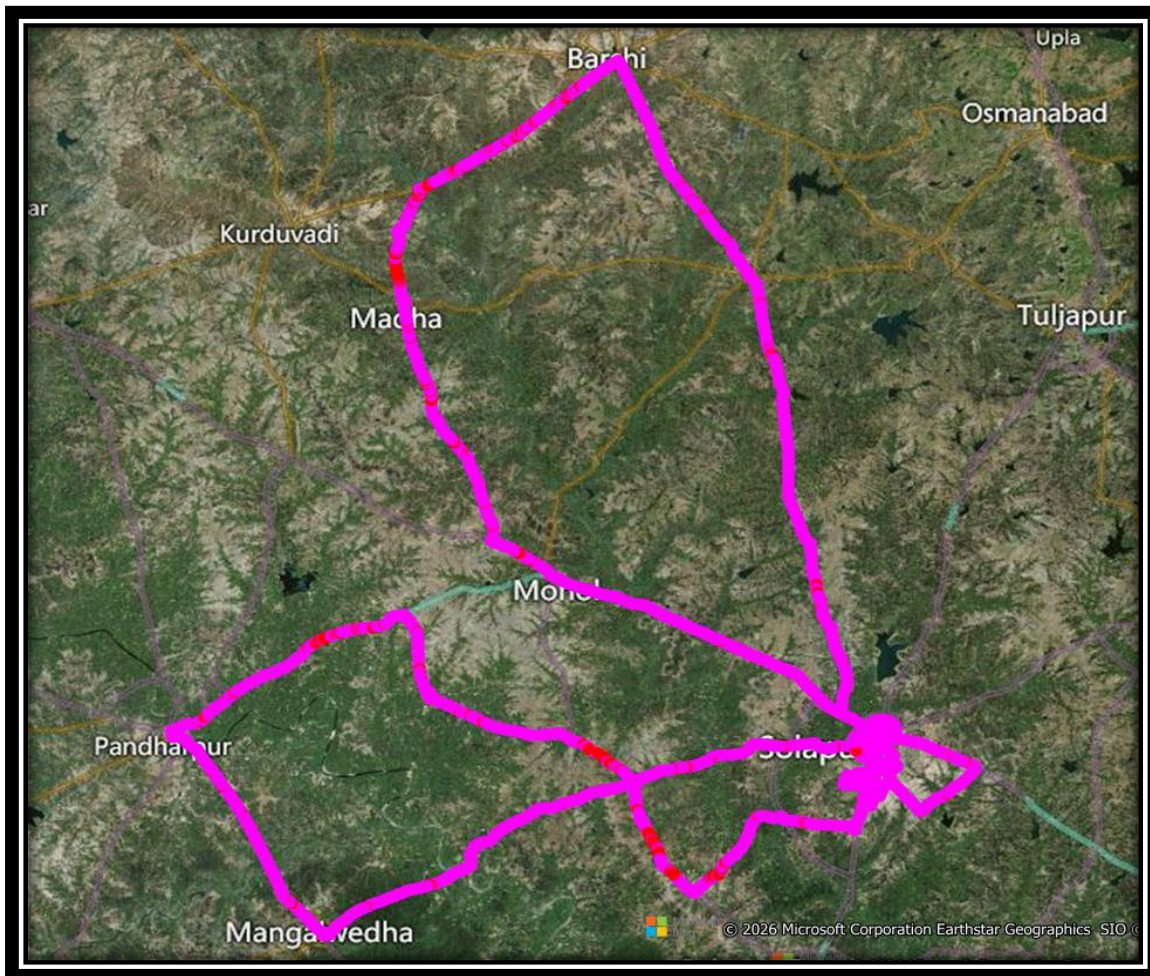
Red (Rx Level < -85 dBm)
Dark Blue (RSCP Level < -90 dBm)

Signal Strength Map:(3G/2G-Lockmode) BSNL



Signal Strength Map:(3G/2G-Lockmode) VIL

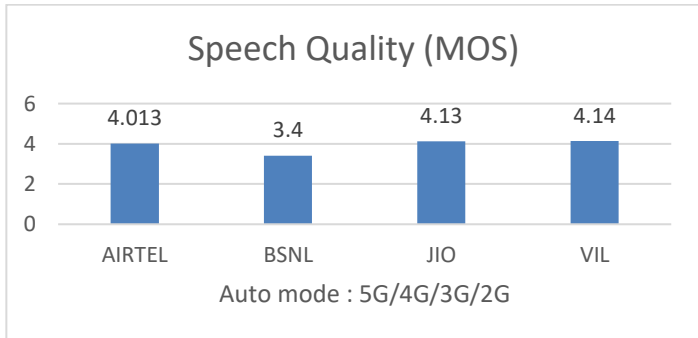
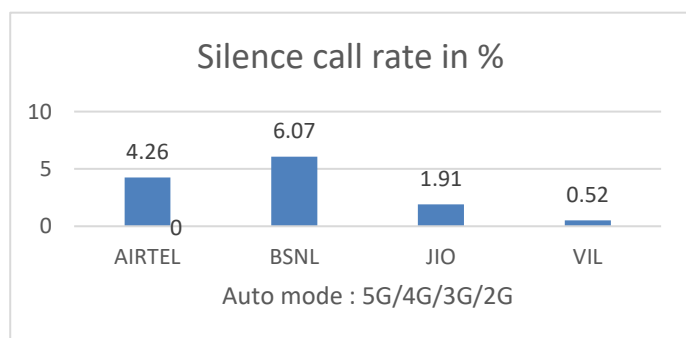
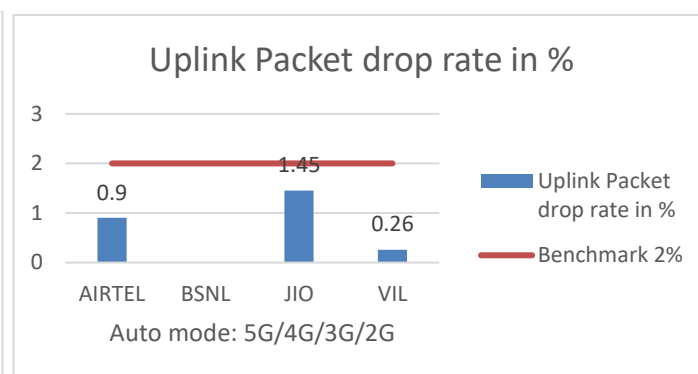
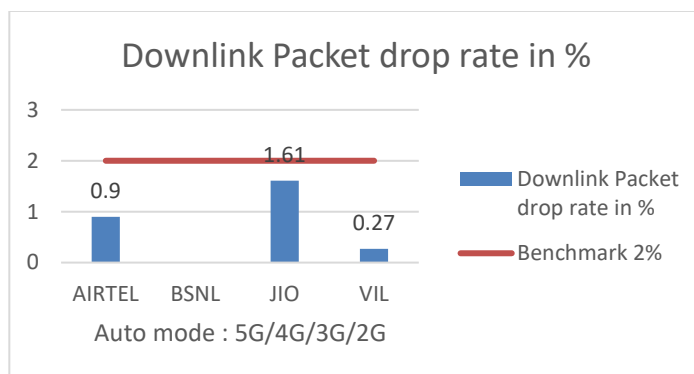
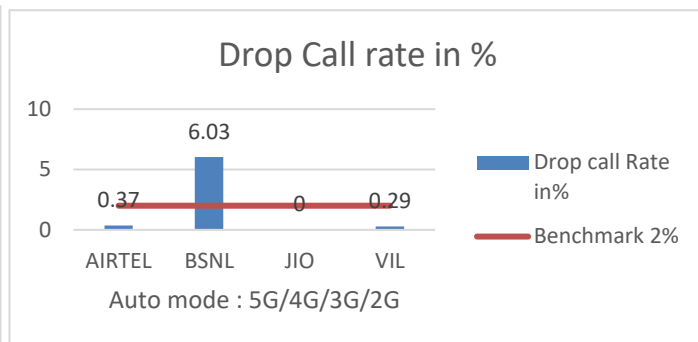
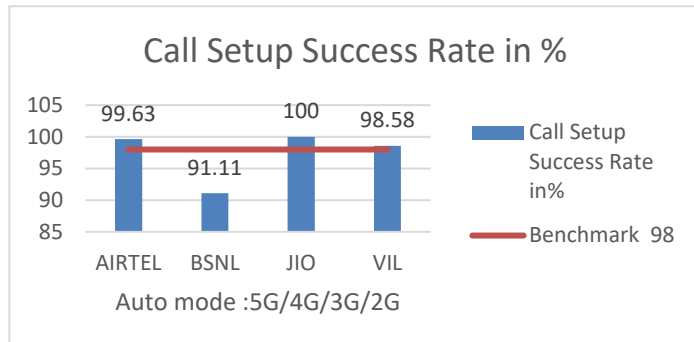
Signal Strength Map (for each TSP)	Map Legend:
	2G- Pink (Rx Level $\geq$ -85 dBm),
	3G- Sky blue (RSCP Level $\geq$ -90 dBm)
	Red (Rx Level $<$ -85 dBm)
	Dark Blue (RSCP Level $<$ -90 dBm)



3.1.3 Signal Strength Distribution:(3G/2G-Lockmode)

RxLevel-2G								
Overall Rx Level	No of Sample				Sample%			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max,≥-65]	52577	2045	NA	58676	38.83%	12.08%	NA	53.92
[-65,≥-75)	42135	2721	NA	30646	31.12%	15.31%	NA	28.16
[-75,≥-85)	30392	4275	NA	15561	22.45%	25.40%	NA	14.3
[-85,≥Min)	10282	7771	NA	3942	7.59%	46.18%	NA	3.62
Total	135386	16812	NA	108825	100.00%	100.00%	NA	100
RxLevel-3G								
Overall RSCP	No of Sample				Sample%			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max,≥-70]	NA	NA	NA	NA	NA	NA	NA	NA
[-70,≥-80)	NA	NA	NA	NA	NA	NA	NA	NA
[-80,≥-90)	NA	NA	NA	NA	NA	NA	NA	NA
[-90,≥Min)	NA	NA	NA	NA	NA	NA	NA	NA
Total	NA		NA	NA	NA		NA	NA

3.2 Voice Service Performance in 5G/4G/3G/2G(Automode)-Dynamic



3.2 Voice Service Performance in 5G/4G/3G/2G(Automode)-Dynamic

Parameters	Airtel	BSNL	RJIL	VIL
Total Distance covered(in Kms)	415 km	360	415	415
No. of Call Attempts	273	315	313	352
No. of Call Established	272	287	313	347
Call setup success rate(CSSR)%	99.63%	91.11%	100%	98.58
No. of Drop Call	1	19	0	5
Drop Call Rate%	0.37%	6.03%	0%	0.29
Call Setup Time Average(Sec.)	0.39	2.65	1.09	1
No. of Handover Attempts	424	592	3933	1696
No. of Handover success	423	576	3933	1695
HOSR%	99.76%	97.30%	100%	99.94
Packet Drop Rate (Downlink)	0.90%	NA	1.61%	0.27
Packet Drop Rate (Uplink)	0.90%	NA	1.45%	0.26
Number of silence call for>2sec.	1.26%	NA	6	19
Silence Call Rate%	4.26%	6.07%	1.91%	0.52
Number of MOS samples	2251	NA	2357	3620
Average MOS score	4.013	3.4	4.13	4.14

3.2.1 Number of Cell ids latched during drive test 5G/4G/3G/2G-Automode)

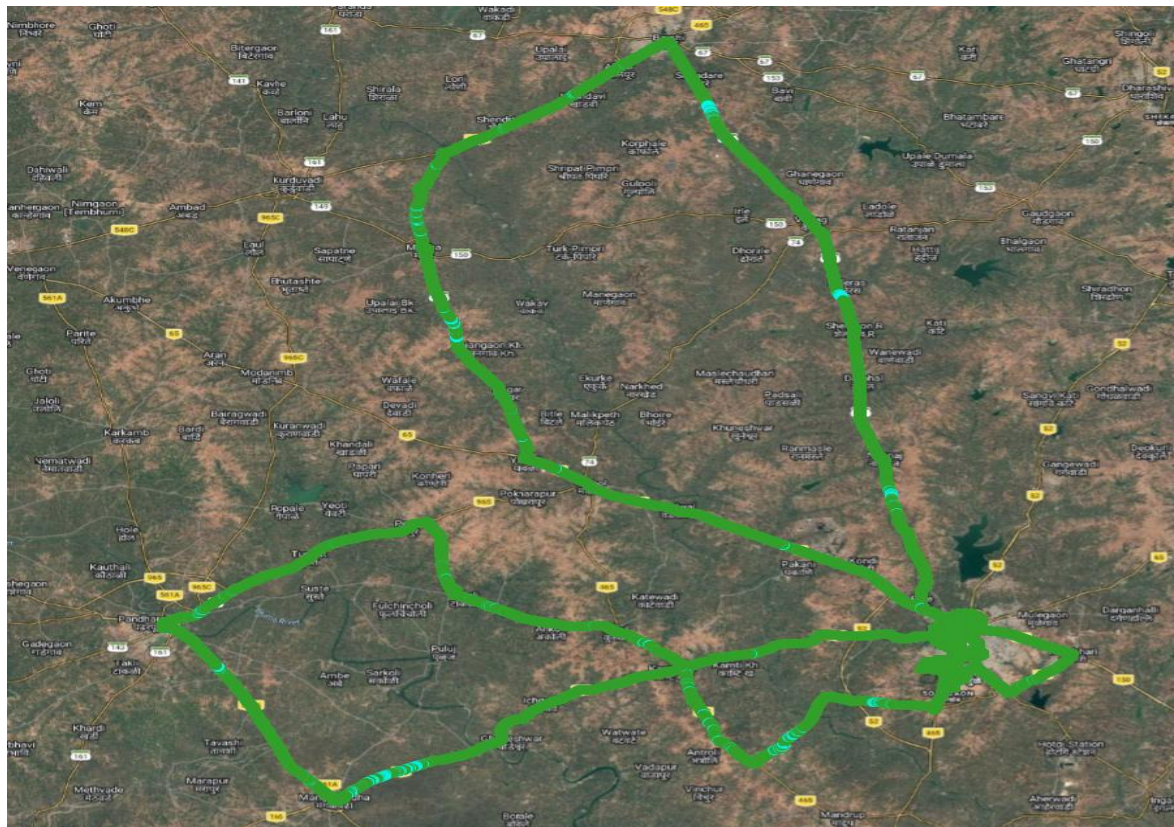
Number of unique cell ids covered in Voice test				
Technology	Service Provider			
	AIRTEL	BSNL	RJIL	VIL
3G	NA	18	-	NA
2G	0	85	-	1
4G	917	317	1033	521
5G	0	NA	274	NA

3.2.2 Signal Strength Map:(5G/4G/3G/2G-Automode)

Signal Strength Map	Map Legend- 2G- Pink (Rx Level ≥ -85 dBm), 3G- Sky blue (RSCP Level ≥ -90 dBm)	Red (Rx Level < -85 dBm) Dark Blue (RSCP Level < -90 dBm)
	Map Legend- 4G- Light Green (RSRP Level ≥ -110 dBm), 5G- Light Yellow (RSRP Level ≥ -110 dBm),	Dark Green (RSRP Level < -110 dBm) Dark Yellow (RSRP Level < -110 dBm)

Technology	Parameter	Range	Colour
2G	Rx Level	≥ -85 dBm	Pink
		< -85 dBm	Red
3G	RSCP	≥ -90 dBm	Sky blue
		< -90 dBm	Dark Blue
4G	RSRP	≥ -110 dBm	Light Green
		< -110 dBm	Dark Green
5G	RSRP	≥ -110 dBm	Light Yellow
		< -110 dBm	Dark Yellow

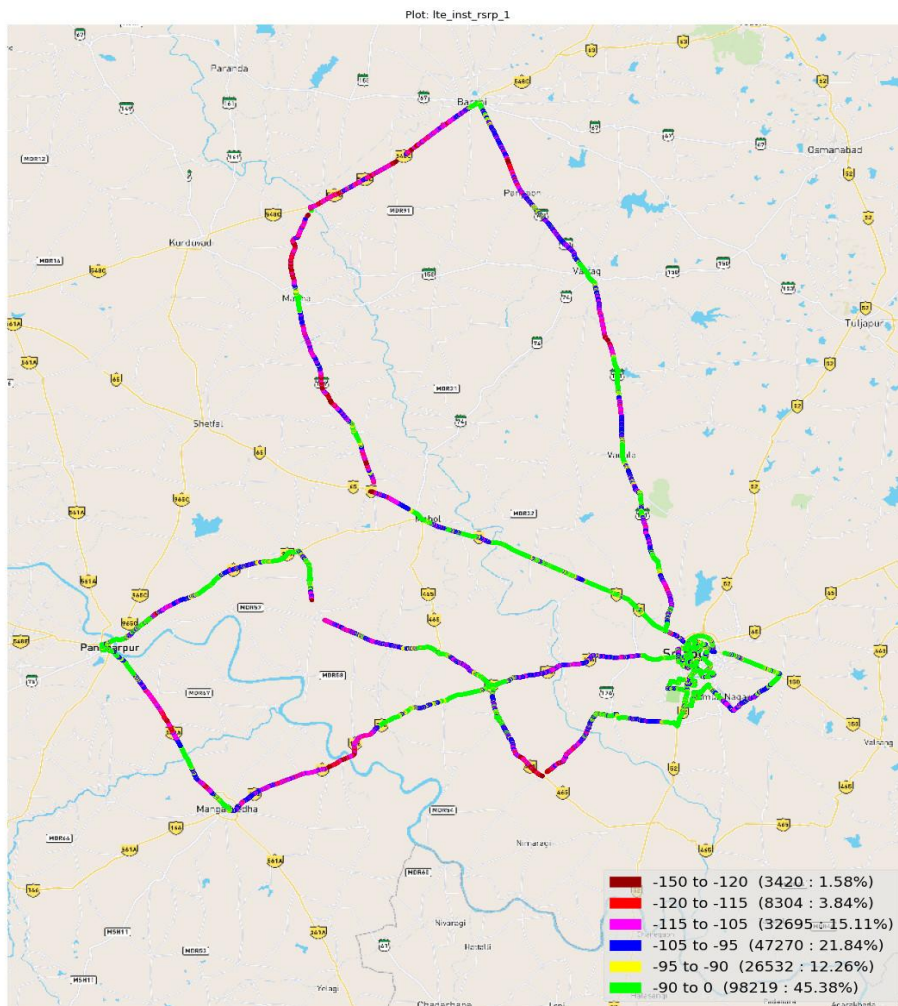
Signal Strength Map - Airtel :(5G/4G/3G/2G-Automode)



☒	Rsrp [56093]
☒	-110 to -140 [1011]
☒	0 to -110 [55082]

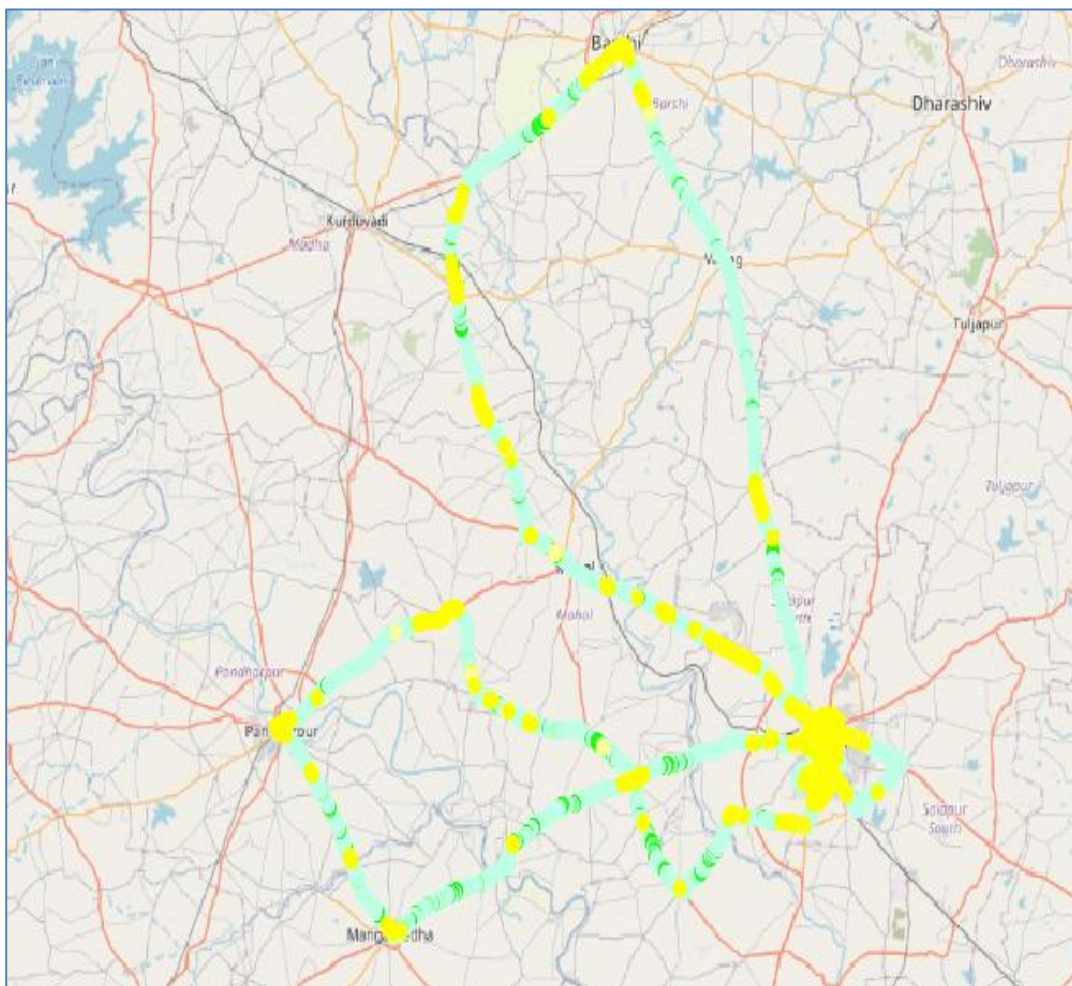
Signal Strength Map - BSNL : (5G/4G/3G/2G-Automode)

SignalStrength Map	MapLegend- 2G- Pink (RxLevel $\geq$ -85dBm), 3G- Skyblue (RSCPLLevel $\geq$ -90dBm)	Red (RxLevel $<$ -85dBm) DarkBlue (RSCPLLevel $<$ -90dBm)
	MapLegend- 4G- Light Green (RSRPLLevel $\geq$ -110 dBm), DarkGreen (RSRPLLevel $<$ -110 dBm) 5G- Light Yellow (RSRP Level $\geq$ -110 dBm), DarkYellow (RSRPLevel $<$ -110dBm)	



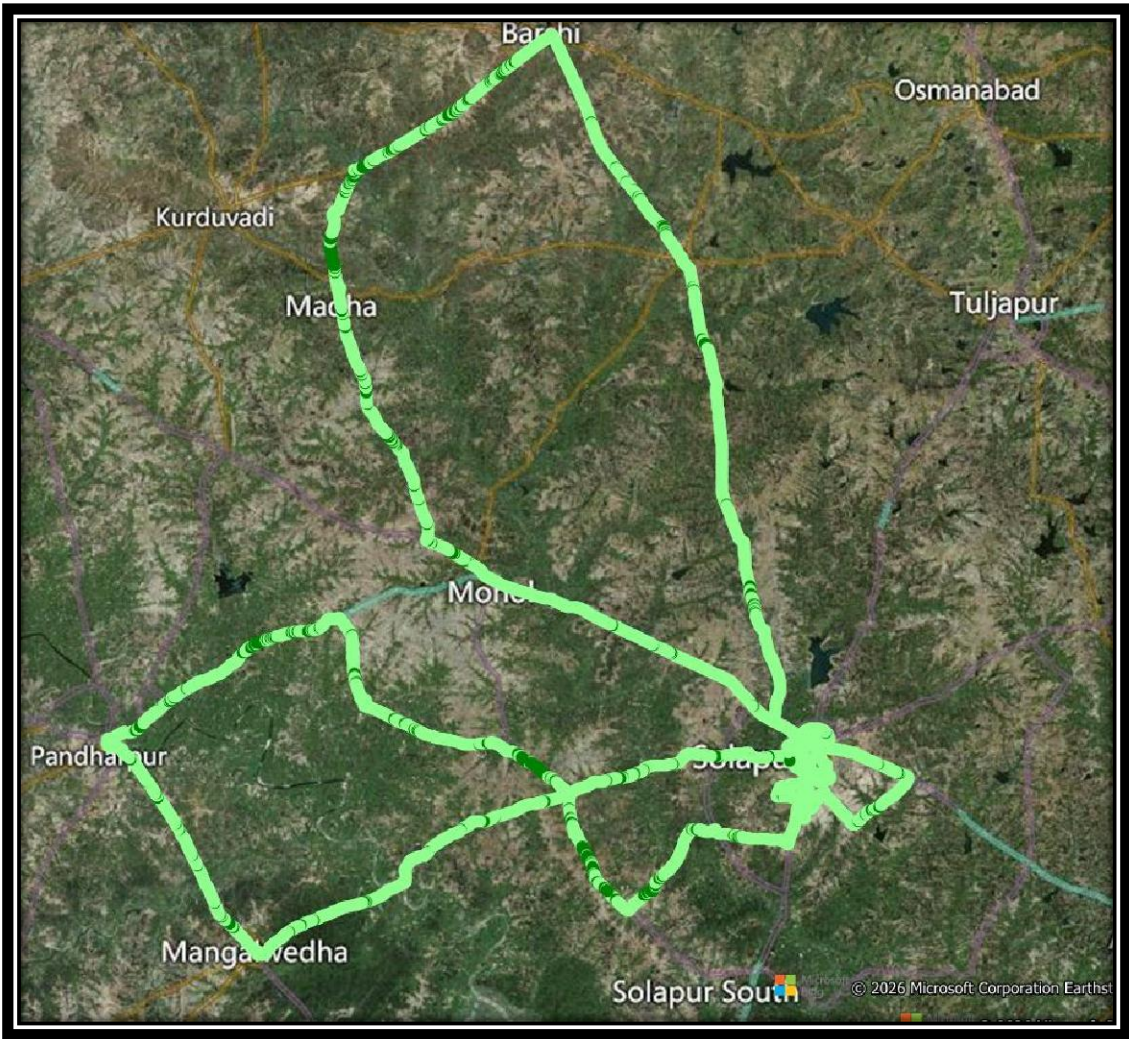
Signal Strength Map: JIO (5G/4G/3G/2G-Automode)

Signal Strength Map	Map Legend- 2G- Pink (Rx Level $\geq$ -85 dBm), 3G- Sky blue (RSCP Level $\geq$ -90 dBm)	Red (Rx Level $<$ -85 dBm) Dark Blue (RSCP Level $<$ -90 dBm)
	Map Legend- 4G- Light Green (RSRP Level $\geq$ -110 dBm), 5G- Light Yellow (RSRP Level $\geq$ -110 dBm),	Dark Green (RSRP Level $<$ -110 dBm) Dark Yellow (RSRP Level $<$ -110 dBm)



Signal Strength Map: VIL (5G/4G/3G/2G-Automode)

Signal Strength Map	Map Legend-
	2G- Pink (Rx Level $\geq$ -85 dBm), Red (Rx Level $<$ -85 dBm)
	3G- Sky blue (RSCP Level $\geq$ -90 dBm) Dark Blue (RSCP Level $<$ -90 dBm)
	Map Legend-
	4G- Light Green (RSRP Level $\geq$ -110 dBm), Dark Green (RSRP Level $<$ -110 dBm)
	5G- Light Yellow (RSRP Level $\geq$ -110 dBm), Dark Yellow (RSRP Level $<$ -110 dBm)



3.2.3 Signal Strength distribution:(5G/4G/3G/2G-Automode)

RxLevel-2G								
Overall Rx Level	No of Sample				Sample%			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max,≥-65]	52577	5	NA	NA	38.83%	0.09	NA	NA
[-65,≥-75)	42135	220	NA	NA	31.12%	4.04	NA	NA
[-75,≥-85)	30392	828	NA	NA	22.45%	15.2	NA	NA
[-85, ≥Min)	10282	4395	NA	NA	7.59%	80.67	NA	NA
Total	135386	5448	NA	NA	100.00%	100	NA	NA

RxLevel-3G								
Overall RSCP	No of Sample				Sample%			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max,≥-70]	NA	NA	NA	NA	NA	NA	NA	NA
[-70,≥-80)	NA	NA	NA	NA	NA	NA	NA	NA
[-80,≥-90)	NA	NA	NA	NA	NA	NA	NA	NA
[-90, ≥Min)	NA	NA	NA	NA	NA	NA	NA	NA
Total	NA	NA	NA	NA	NA	NA	NA	NA

RxLevel-4G								
Overall RSRP	No of Sample				Sample%			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max,≥-80]	14506	8741	9468	41786	25.86%	7.30%	26%	18.61
[-80,≥-95]	27344	48659	14073	66382	48.75%	40.66%	38%	29.57
[-95,≥-110]	13232	47328	12044	106209	23.59%	39.55%	33%	47.32
[-110,≥Min]	1011	14943	1304	10094	1.80%	12.49%	3%	4.5
Total	56093	119671	36889	224471	100	100.00%	100	100

RxLevel-5G								
Overall RSRP	No of Sample				Sample%			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max,≥-80]	44389	NA	6038	NA	33.18%	NA	34%	NA
[-80,≥-95]	43250	NA	9539	NA	32.33%	NA	54%	NA
[-95,≥-110]	36546	NA	1845	NA	27.32%	NA	11%	NA
[-110,≥Min]	9577	NA	136	NA	7.15%	NA	1%	NA
Total	133762	NA	17558	NA	100%	NA	100	NA

3.3 Data Service performance in 5G/4G/3G/2G(Automode)-Dynamic

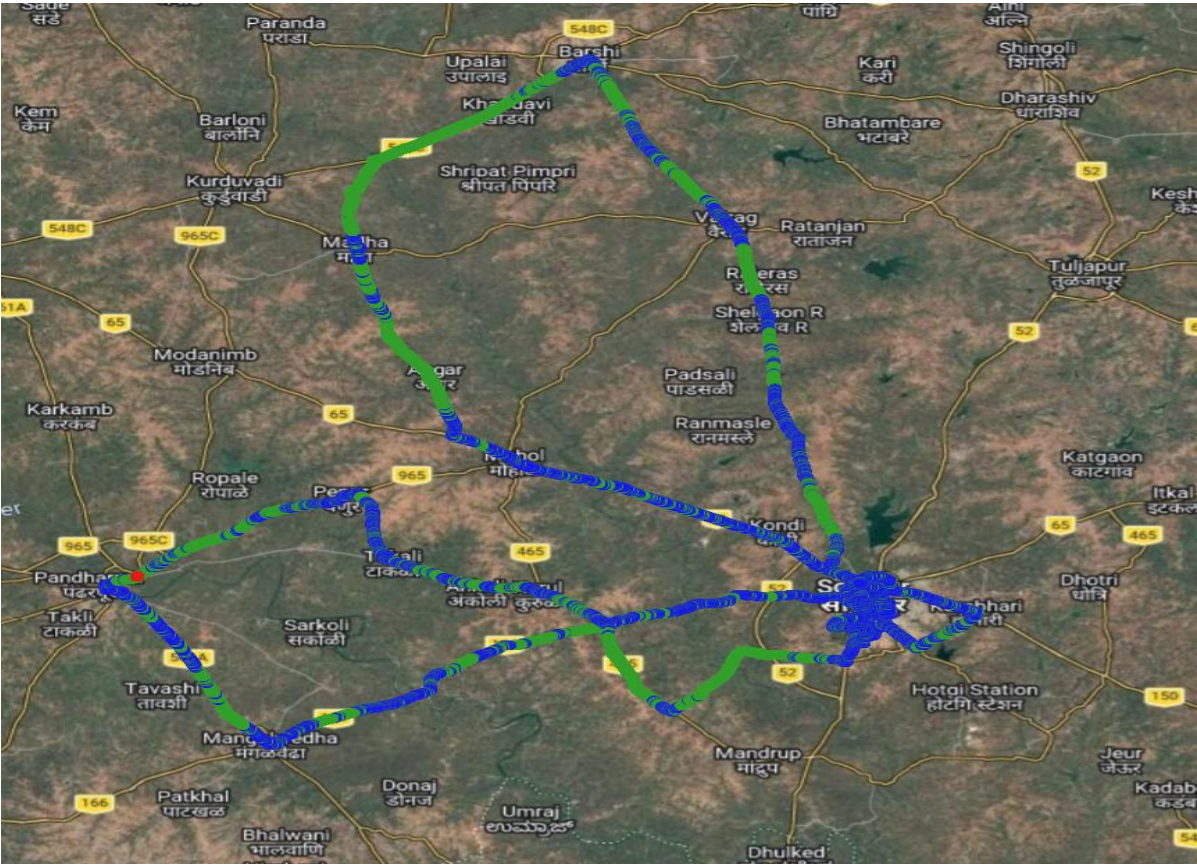
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (M bits/s)	Average	51.68	10.83	192.4	43.56
	80thPercentile	76.67	17.08	358.9	73.02
	20thPercentile	13.38	9.32	11.2	24.6
Upload speed (M bits/s)	Average	23.09	7.29	28.5	22.13
	80thPercentile	38.36	11.43	51.7	32.97
	20thPercentile	5.39	3.17	1.6	10.2
Latency (ms)	Average	62.54	NA	-	70.57
	50thPercentile	62.54	NA	26	35.29
Jitter(ms)	Average	9.2 ms	NA	14.4	0.38

3.4 Time Spent(Technology-wise) Airtel

Time Spent Map (for each TSP)	Map Legend:
	2G – Red 3G – Yellow
	4G – Green 5G - Blue

☒ Technology [201121]

- ☒ GSM [25]
- ☒ 4G [66302]
- ☒ 5G [134794]



Time Spent(Technology-wise) BSNL

Time Spent Map (for each TSP)

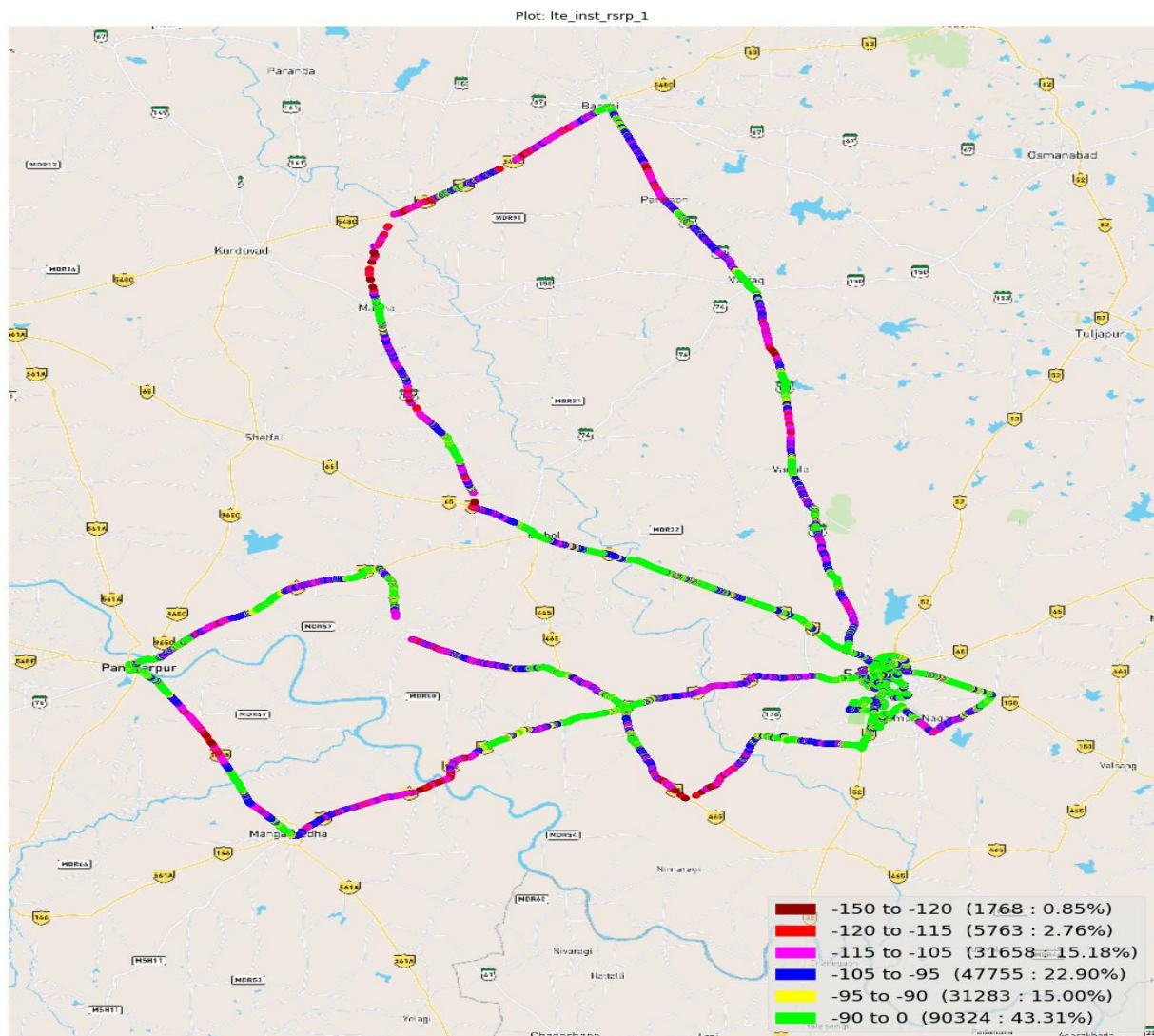
Map Legend:

2G – Red

4G – Green

3G – Yellow

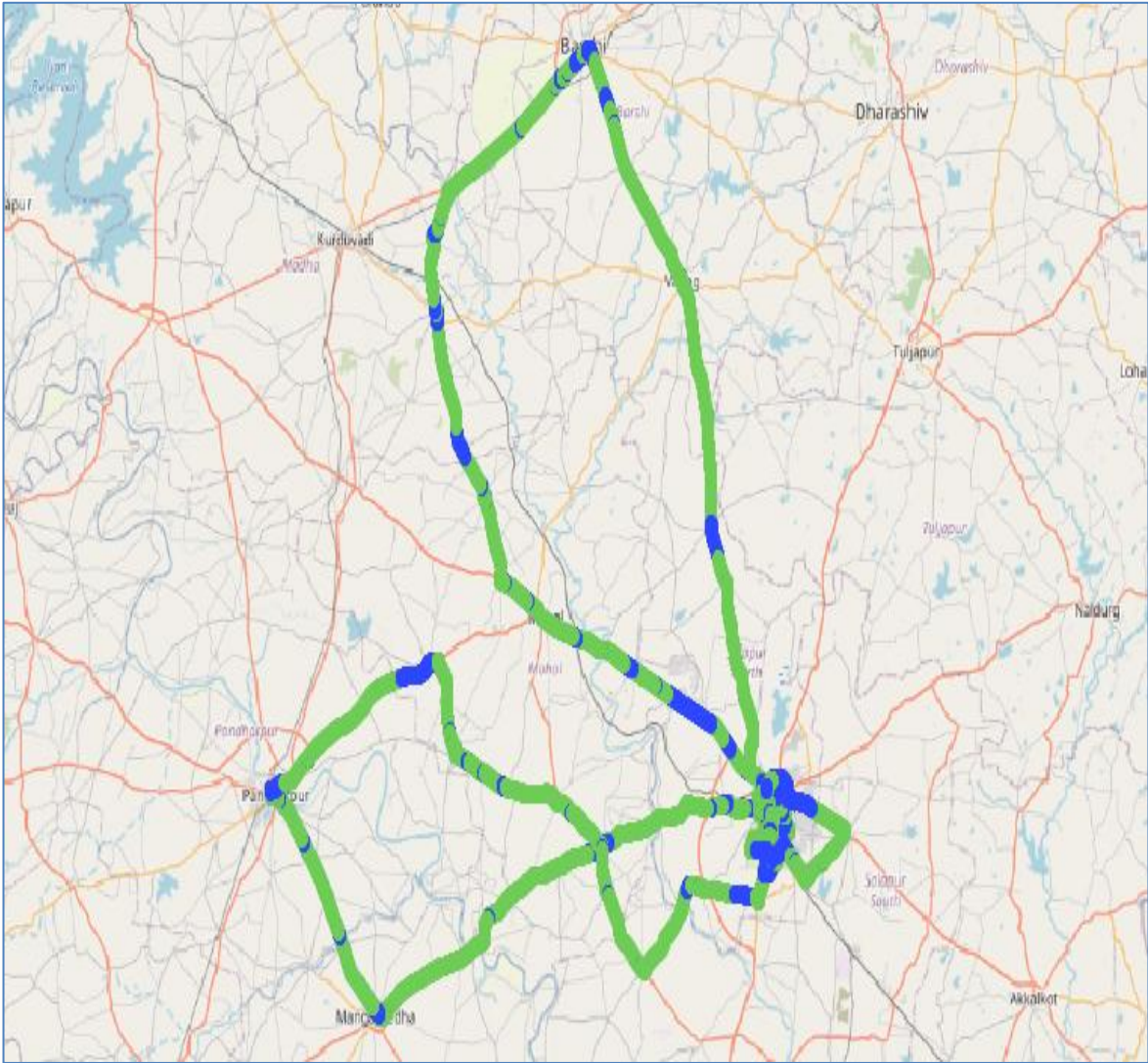
5G - Blue



Note:-As system was not permitting to change the color of legend. Also, due to lack of licences only LTE time stamp is acquired by the post processing tool.

Time Spent(Technology-wise) JIO

Time Spent Map (RJIL)	Map Legend: 4G – Green 5G - Blue
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Time Spent(Technology-wise) VIL

Time Spent Map (for each TSP)

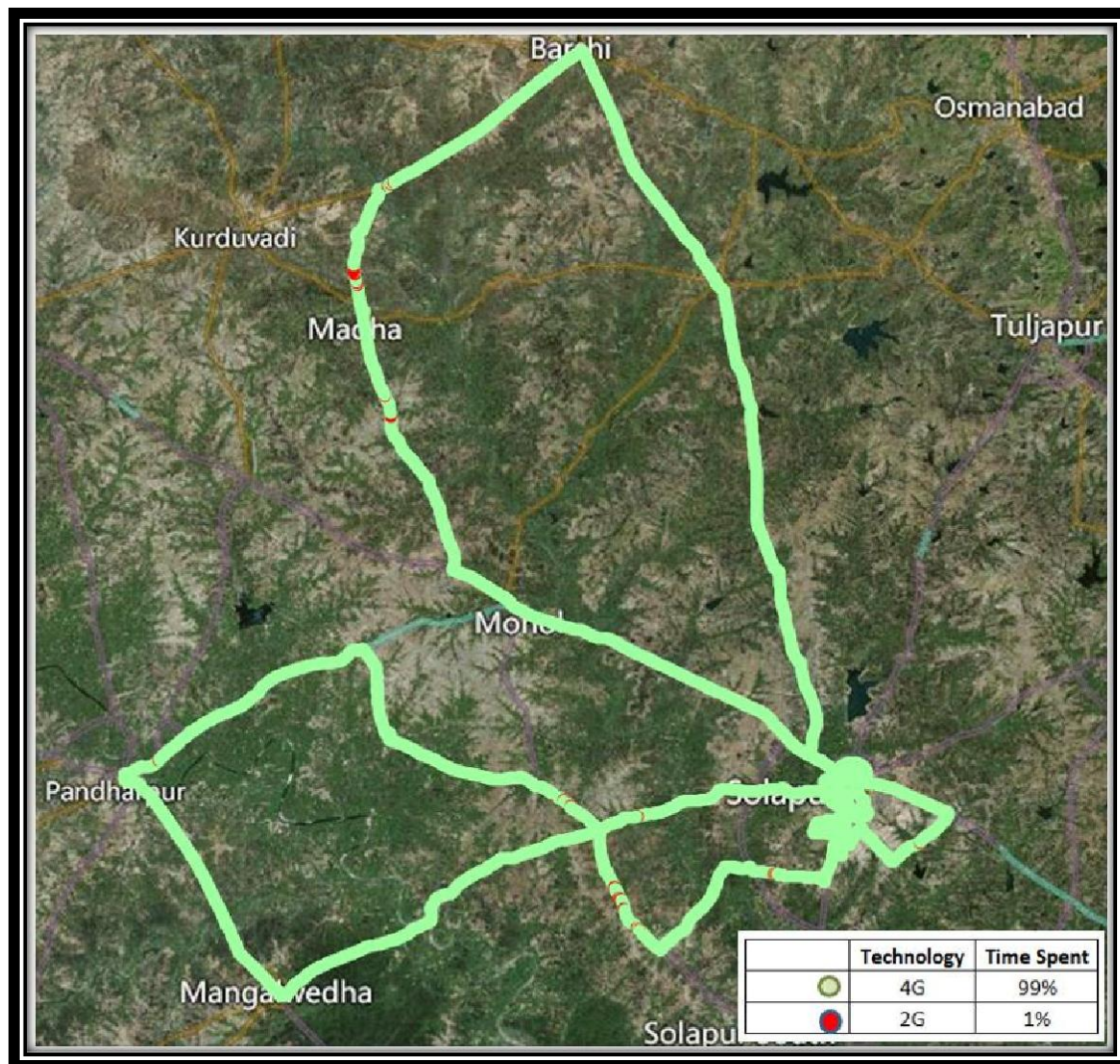
Map Legend:

2G - Red

Green

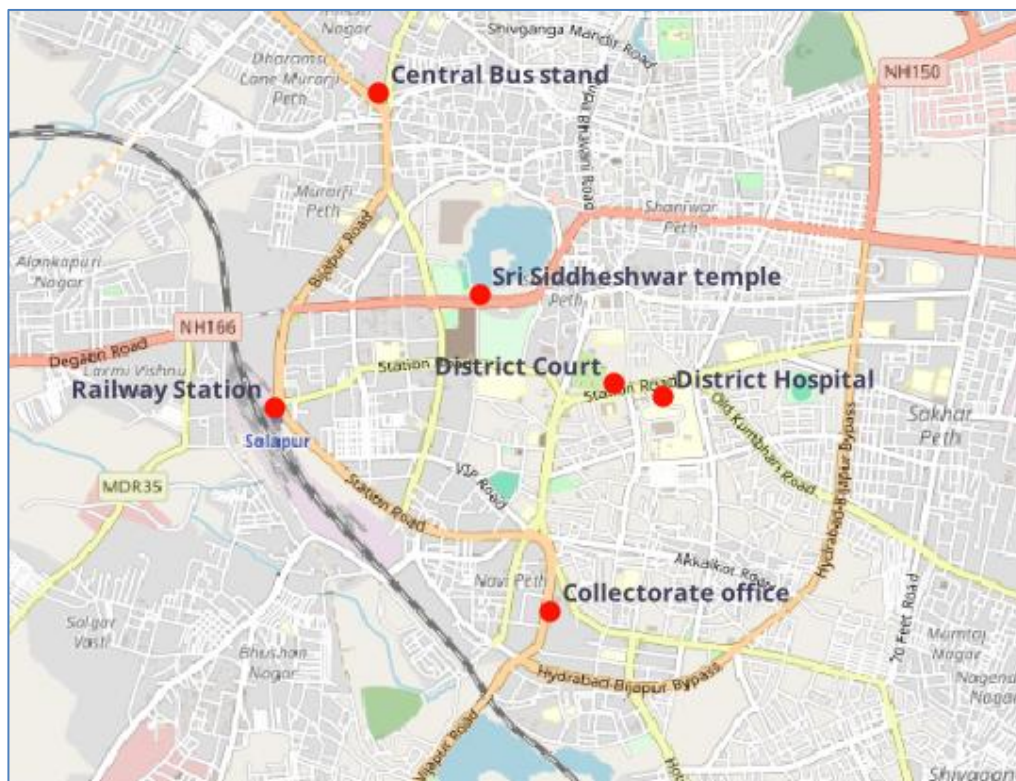
5G - Blue

3G - Yellow 4G -



QoS Performance Analysis-Static

4.1 Hotspot Locations



Hotspot Name	Latitude & Longitude	Date of Measurement	Time of Measurement
Railway Station Solapur	17.664768, 75.893764	27-Jan	2:41 pm
Collectorate office	17.655090, 75.906742	27-Jan	5:30 pm
Siddheshwar Temple	17.670880, 75.903394	28-Jan	4:58 pm
District Court Solapur	17.665822, 75.909629	28-Jan	3:30 pm
District Hospital Solapur	17.665528, 75.912384	28-Jan	4:30 pm
MSRTC Central Bus Stand	17.681822, 75.898523	29-Jan	4:30 pm

4.2 Voice Service Performance(5G/4G/3G/2G-Automode)–Overall

Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	60	60	60	60
No of Call Established	60	60	60	60
Call setup success rate(CSSR)%	100	100	100	100
No. of Drop Call	0	0	0	0
Drop Call Rate%	0	0	0	0
Call Setup Time Average(.)	0.54	2.21	1.03	0.77

4.3 Data Service Performance(5G/4G/3G/2G-Automode)–Overall

QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed(M bits/s)	Typical	25.77	0.976	-	32.58
	Average	50.83	11.51	163.6	35.99
	80thPercentile	70.83	14.38	259.7	38.68
Download Session Setup Success Rate%		100	96.66%	100	100
Upload speed (M bits/s)	Typical	22.66	0.167	-	15.8
	Average	33.78	1.66	31.1	17.21
	80thPercentile	42.57	2.7	42.4	18.85
Upload Session Setup Success Rate%		100	93.33%	100	100
Latency(in ms)	50thPercentile	38.58 ms	NA	25.7	34.83
Jitter(in ms)	Average	2.89 ms	NA	11.6	0.38
Packet Drop Rate%		0	NA	0	0
Web browsing delay(in)		2.45 sec	9.99	0.87	1.9
Video Streaming performance for video		1.25 sec	4.8	0.81	0.91

4.4 Voice Service Performance (5G/4G/3G/2G-Automode) at Railway Station Solapur.

Name of Hotspot Location 1	Railway Station Solapur			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	10	10	10
No of Call Established	10	10	10	10
Call setup success rate(CSSR)%	100	100	100	100
No. of Drop Call	0	0	0	0
Drop Call Rate%	0	0	0	0
Call Setup Time Average(.)	0.35	2.2	1.03	0.77
Total no of RLT Occurrence	-	0	-	-
No of RLT>48	-	0	-	-

4.5 Data Service Performance (5G/4G/3G/2G-auto mode) at Railway Station Solapur

Name of Hotspot Location 1		Railway Station Solapur			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed(M bits/s)	Typical	34.67	0.25	-	8.52
	Average	64.68	2.71	104.4	10.99
	80thPercentile	96.28	12..03	125.5	13.64
Download Session Setup Success Rate%		100	97.58%	100	100
Upload speed (M bits/s)	Typical	35.67	0.34	-	7.5
	Average	46.28	0.95	23.5	8.88
	80thPercentile	54.66	5.61	31.7	9.93
Upload Session Setup Success Rate%		100	95.33%	100	100
Latency(in ms)	50thPercentile	35	NA	26	40.5
Jitter(in ms)	Average	3.9 ms	NA	10.2	0
Packet Drop Rate%		0	NA	0	0
Web browsing delay(in)		2.61 sec	9.75	0.66	2.53
Video Streaming performance for video		2.11 sec	4.61	0.62	1.35

Voice Service Performance (5G/4G/3G/2G-Automode) at Collectorate office Solapur

Name of Hotspot Location 2	Collector Office Solapur			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	10	10	10
No of Call Established	10	10	10	10
Call setup success rate(CSSR)%	100%	100	100	100
No. of Drop Call	0	0	0	0
Drop Call Rate%	0%	0	0	0
Call Setup Time Average(sec.)	0.49	2.21	1.03	0.82
Total no of RLT Occurrence	-	0	-	-
No of RLT>48	-	0	-	-

Data Service Performance (5G/4G/3G/2G-auto mode) at Collectorate office Solapur

Name of Hotspot Location 2		Collector Office Solapur			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed(M bits/s)	Typical	22.65	0.52	-	57.15
	Average	48.48	3.4	161.5	64.46
	80thPercentile	63.64	7.45	208.5	69.1
Download Session Setup Success Rate%		100	94.57%	100	100
Upload speed (M bits/s)	Typical	22.36	0.21	-	27.15
	Average	31.75	0.69	34	27.74
	80thPercentile	43.19	5.26	39.2	28.63
Upload Session Setup Success Rate%		100	94.22%	100	100
Latency(in ms)	50thPercentile	39	NA	25	29.5
Jitter(in ms)	Average	2.71 ms	NA	11.1	0.62
Packet Drop Rate%		0	NA	0	0
Web browsing delay(in)		2.53 sec	9.91	0.79	1.46
Video Streaming performance for video		1.23 sec	4.56	0.86	0.78

Voice Service Performance (5G/4G/3G/2G-Automode) at Sri Siddheshwar Temple Solapur

Name of Hotspot Location 3	Sri Siddheshwar Temple Solapur			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	10	10	10
No of Call Established	10	10	10	10
Call setup success rate(CSSR)%	100	100	100	100
No. of Drop Call	0	0	0	0
Drop Call Rate%	0%	0	0%	0
Call Setup Time Average(.)	0.56	2.2	0.99	0.79
Total no of RLT Occurrence	-	0	-	-
No of RLT>48	-	0	-	-

Data Service Performance (5G/4G/3G/2G-auto mode) at Sri Siddheshwar Temple Solapur

Name of Hotspot Location 3		Sri Siddheshwar Temple Solapur			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed(M bits/s)	Typical	24.47	0.82	-	67.77
	Average	49.31	4.12	288.7	69.63
	80thPercentile	72.8	8.15	335.6	71.13
Download Session Setup Success Rate%		100	93.12%	100	100
Upload speed (Mbits/s)	Typical	23.15	0.17	-	31.83
	Average	32.57	0.54	51.9	32.89
	80thPercentile	42.41	1.98	66.3	34.48
Upload Session Setup Success Rate%		100	93.54%	100	100
Latency(in ms)	50thPercentile	32	NA	26	31
Jitter(in ms)	Average	3.14 ms	NA	10.6	0.76
Packet Drop Rate%		0	NA	0	0
Web browsing delay(in)		2.51 sec	9.75	0.91	2.04
Video Streaming performance for video		0.83 sec	4.97	1.03	0.62

Voice Service Performance (5G/4G/3G/2G-Automode) at District Court Solapur

Name of Hotspot Location 4	Civil Court Solapur			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	10	10	10
No of Call Established	10	10	10	10
Call setup success rate(CSSR)%	100%	100	100	100
No. of Drop Call	0	0	0	0
Drop Call Rate%	0%	0	0	0
Call Setup Time Average(.)	0.69	2.21	1.02	0.76
Total no of RLT Occurrence	-	0	-	-
No of RLT>48	-	0	-	-

Data Service Performance (5G/4G/3G/2G-auto mode) at District Court Solapur

Name of Hotspot Location 4		Civil Court Solapur			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed(M bits/s)	Typical	24.93	1.24	-	19.14
	Average	51.96	4.25	188.8	22.24
	80thPercentile	67.96	8.69	415.3	26.95
Download Session Setup Success Rate%		100	94.55%	100	100
Upload speed (Mbits/s)	Typical	19.02	0.15	-	2.23
	Average	29.24	0.48	18.5	3.32
	80thPercentile	31.76	1.42	29.7	3.76
Upload Session Setup Success Rate%		100	94.12%	100	100
Latency(in ms)	50thPercentile	29.2	NA	26	38.5
Jitter(in ms)	Average	3.31 ms	NA	13.4	0.1
Packet Drop Rate%		0	NA	0	0
Web browsing delay(in)		2.03 sec	8.73	1	1.85
Video Streaming performance for video		1.061 sec	4.61	0.77	0.83

Voice Service Performance (5G/4G/3G/2G-Automode) at Dist Hospital Solapur

Name of Hotspot Location 5	Civil Hospital Solapur			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	10	10	10
No of Call Established	10	10	10	10
Call setup success rate(CSSR)%	100	100	100	100
No. of Drop Call	0	0	0	0
Drop Call Rate%	0	0	0	0
Call Setup Time Average(.)	0.63	2.19	1.02	0.74
Total no of RLT Occurrence	-	0	-	-
No of RLT>48	-	0	-	-

Data Service Performance (5G/4G/3G/2G-auto mode) at Dist Hospital Solapur

Name of Hotspot Location 5		Civil Hospital Solapur			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed(M bits/s)	Typical	25.94	1.75	-	15.21
	Average	47.67	4.25	184.7	19.1
	80thPercentile	62.41	17.4	412.2	20.95
Download Session Setup Success Rate%		100	96.45%	100	100
Upload speed (M bits/s)	Typical	17.53	0.15	-	6.27
	Average	31.23	0.4	18.6	7.95
	80thPercentile	42.28	1.75	34.3	9.92
Upload Session Setup Success Rate%		100	96.54%	100	100
Latency(in ms)	50thPercentile	43.15	NA	25	40
Jitter(in ms)	Average	2.36 ms	NA	12.6	0.15
Packet Drop Rate%		0	NA	0	0
Web browsing delay(in)		2.61 sec	7.1	0.72	1.79
Video Streaming performance for video		0.95 sec	3.7	0.73	1.06

Voice Service Performance (5G/4G/3G/2G-Automode) at MSRTC Bus Stand Solapur

Name of Hotspot Location 6	Bus Station Solapur			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	10	10	10
No of Call Established	10	10	10	10
Call setup success rate(CSSR)%	100	100	100	100
No. of Drop Call	0	0	0	0
Drop Call Rate%	0	0	0	0
Call Setup Time Average(.)	0.48	2.2	1.04	0.76
Total no of RLT Occurrence	-	0	-	-
No of RLT>48	-	0	-	-

Data Service Performance (5G/4G/3G/2G-auto mode) at MSRTC Bus Stand Solapur

Name of Hotspot Location 6		Bus Station Solapur			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed(M bits/s)	Typical	21.98	1.74	-	27.67
	Average	42.86	5.72	53.7	29.54
	80thPercentile	61.8	10.93	61	30.33
Download Session Setup Success Rate%		100	95..24%	100	80
Upload speed (Mbits/s)	Typical	18.23	0.05	-	19.82
	Average	31.62	0.23	40.1	22.5
	80thPercentile	41.099	0.75	52.9	26.37
Upload Session Setup Success Rate%		100	91.50%	100	100
Latency(I n ms)	50thPercentile	53.12	NA	26	29.5
Jitter(in ms)	Average	1.93 ms	NA	11.8	0.62
Packet Drop Rate%		0	NA	0	0
Web browsing delay(in)		2.41 sec	7.85	1.17	1.74
Video Streaming performance for video		1.32 sec	4.09	0.87	0.8

4.3 Signal Strength distribution at Static location–Overall

RxLevel-2G								
Overall Rx Level	No of Sample				Sample%			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max,≥-65]	426286	NA	NA	NA	38.57%	NA	NA	NA
[-65,≥-75)	441743	NA	NA	NA	39.97%	NA	NA	NA
[-75,≥-85)	217893	NA	NA	NA	19.71%	NA	NA	NA
[-85, ≥Min)	19260	NA	NA	NA	1.74%	NA	NA	NA
Total	1105182	0	NA		100%	0	NA	
RxLevel-3G								
Overall RSCP	No of Sample				Sample%			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max,≥-70]	NA	NA	NA	NA	NA	NA	NA	NA
[-70,≥-80)	NA	NA	NA	NA	NA	NA	NA	NA
[-80,≥-90)	NA	NA	NA	NA	NA	NA	NA	NA
[-90, ≥Min)	NA	NA	NA	NA	NA	NA	NA	NA
Total	NA		NA	NA	NA		NA	NA
RxLevel-4G								
Overall RSRP	No of Sample				Sample%			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max,≥-80]	288955	48553	NA	7110	15.00%	76.94%	NA	13.49
[-80,≥-95]	1171920	11807	NA	21697	60.85%	18.71%	NA	41.16
[-95,≥-110]	464904	2743	NA	23899	24.14%	4.35%	NA	45.34
[-110, ≥Min]	0	0	NA	6	0%	0	NA	0.01
Total	1925779	63103	NA	52712	100%	100.00%	NA	100
RxLevel-5G								
Overall RSRP	No of Sample				Sample%			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max,≥-80]	51742	NA	104	NA	38.08%	NA	6%	NA
[-80,≥-95]	64521	NA	1189	NA	47.49%	NA	66%	NA
[-95,≥-110]	19593	NA	506	NA	14.42%	NA	28%	NA
[-110, ≥Min]	0	NA	0	NA	0	NA	0%	NA
Total	135856		1799		100%		100	

5 Improvement plan for short coming observed during Drive Test

Sr.	Name of TSP	Route / Location	Name of Area & LSA	Lat. & Long.	Observation (No coverage / Poor coverage / Poor Signal Quality/ Call drops / Call Setup failure, and Hand Over failure/ Block/ Down Link Packet Drop/ Up Link Packet Drop/ speed less than 2Mb locations/)	Improvement Plan (Optimization/Radiation of New Site/up-gradation of existing site/upgradation of backhaul etc.)	Time Line/ Remarks
1	Airtel	Solapur-Mangawedha		17.51888, 75.46328	Poor Coverage Due to high inter site distance and AMSL variation	New Site	
2	Airtel	Mangalvedha-Pandharpur		17.5306, 75.43281	Poor Coverage Due to high inter site distance and AMSL variation	New Site	
3	Airtel	Pandharpur-Mohol		17.69203, 75.3557	Poor Coverage Due to high inter site distance and AMSL variation	New Site	
4	Airtel	Dongon-solapur		17.6046, 75.84614	Poor Coverage high AMSL/Physical Optimization Plan	DON773_NPO	
5	Airtel	Anjangaon to Uplai		17.9533, 75.5409	High Inter site distance/Physical optimization plan	MA4412_NPO	
6	BSNL	Day 1 Route	Solapur Rural	18.02537, 75.62228	Poor speed ,Low coverage ,2G/4G fluctuation	New site proposed, Turkpimpri	Oct -2026
7	BSNL	Day 1 route	Solapur Rural	18.02543, 75.65569	Poor speed , Low coverage ,3G/4G fluctuation	New site proposed, Hatkarwadi	Jun-26
8	BSNL	Day 2 route	Solapur Rural	17.7846, 75.7134	Low coverage due to OFC brake & Pakcet loss	Lamboti Site 4G was down due to OFC break in NHA1 work.	Jan-26
9	BSNL	Day 2 route	Solapur Rural	17.6586, 75.7765	Hardware fault	Tirhe Gaon site was down due to hardware fault, Hw damaged due to flood.	Feb-26
10	BSNL	Day 1- route/ Collector office, Solapur.	Solapur City	17.638935, 75.917734	Poor speed ,Low coverage, 2G/4G fluctuation	Optimization required, antenna height to be increase	Feb-26
11	BSNL	Day-2 route/ Bus stand, Solapur	Solapur City	17.64684, 75.91974	Poor coverage	Optimization required, antenna orientation required.	Dec-25
12	BSNL	Day 1/ Day 2/Day 3 Route Solapur.	Solapur City		Packet Loss and high latency	Transmission equipment need to upgrade, currently working on MADM, STM 16 ring	
13	VIL	Yawali	MAH	17.82968 & 75.60783	Poor Coverage in VoLTE	Optimization required	
14	VIL	Siddh eshwa r Factor y	MAH	17.615024 & 75.94519	Poor Coverage in VoLTE	Optimization required	
15	VIL	Mohol	MAH	17.81951 & 75.62518	Drop Call	Optimization required	
16	VIL	Yawali	MAH	17.83469 & 75.59552	Block Call	Optimization required	
17	VIL	Yawali	MAH	17.83561 & 75.59303	Drop Call	Optimization Required	
18	JIO	Employment Chowk/VIP road	solapur	17.66278 to 17.66212 & 75.90085 to 75.90265	No/Poor Coverage	Optimization	21-03-2026
19	JIO	Station road	solapur	17.66785 to 17.6639 & 75.89411 to 75.89455	No/Poor Coverage	Optimization	21-03-2026



6 Compliance Report for short comings observed during Drive Test Airtel

Drive Test Methodology adopted during the Drive test:

(1) VoiceTests:

Sl.No.	QoS Parameter	Measurement Criteria and methodology
1	Call setup time	Time taken from call initiate to call alerting/ringing.
2	Call setup success rate	CSSR=(Total Call Established/Total Call Attempt)*100 Call Setup attempt time: 30 sec. Call duration(City/Highway):90/180sec. Wait/ Guard Time: 15sec.
3	Dropped Call rate(DCR)	Call Drop Rate=(Total Call Drop/Total Call Established)*100
4	Call Silence Rate (Muting)	Silence call rate=(count of silence/Total calls established)*100 Continuous RTP gap ≥ 2 sec
5	Handover Success Rate	Handover Success Rate = Count of successful handovers (All Technology Handover combined) / Total count of Handover Attempt (All Technology Handover combined) *100 Handover types which are considered- 2G Inter & Intra cell, 3G Soft & IRAT, 4G Inter & Intra frequency & SRVCC, 5G Inter & Intra frequency & 5G to 4G handovers.
6	Packet Drop Rate(DL& UL)for Packet Switched Network (4G & 5G)	Number of RTP (Real-time Transport Protocol) Packets lost divided by total RTP packet received (against each source SSRC and sequence number) at call originating handset. This KPI will be calculated from MOS call for packet call only (VoNR/VoLTE)
7	Mean Opinion Score (MOS) Performance(in5G/4G/3G/2G:Auto mode)	Voice quality in mobile networks is measured with algorithms based on ITU-T P.863 (POLQA) Excellent: MOS ≥ 4 and < 5 , Good :MOS ≥ 3 and < 4 , Fair: MOS ≥ 2 and < 3 ,Poor :MOS ≥ 1 and < 2

(2) Data Tests:

Sl. No.	QoS Parameter	Measurement Criteria and methodology
1	Data speed in M bits/s (DL/UL both)	$\text{Download Speed} = \frac{\text{Total bytes transferred during download}}{\text{Total time for transfer}}$ $\text{Upload Speed} = \frac{\text{Total bytes transferred during upload}}{\text{Total time for transfer}}$ Download: File Size: 500 MB for 120 sec, 30 Sec Timeout Upload: File size: 250 MB for 120 sec, 30 Sec Timeout (Multithread 3-TCP Connection at a time for both DL&UL)
2	Latency (in ms)	Latency is the time taken by a packet to reach the receiving endpoint after being transmitted from the sending point in broadband service. Test with Packet of size of 512 Bytes - 1000 count on TSP's Test server using UDP packets (TWAMP)
3	Jitter (in ms)	Test with Packet of size of 512/256 Bytes - 1000 count on TSP's own Test server using UDP (TWAMP) & RTP packets separately
4	Session Setup Success Rate (in %)(DL/UL)	$\frac{\text{Total DL or UL session established (successfully connected to server)}}{\text{Total DL or UL session attempt}} \times 100$
5	Packet drop rate (in %)	No. of packets lost out of total packet transferred during the testing. - Packet loss rate = $\frac{\text{Total packet lost}}{\text{Total packet sent}} \times 100$ - Packet delay (RTT) > 90 ms considered as packet loss and included in Packet drop rate. - The measurements should include all major types of packets i.e., TCP, UDP and RTP in their representative ratio. The 90th percentile value of the packet drop measurements shall be considered the Packet drop rate.
6	Web browsing delay (in seconds)	Time taken to open the web pages successfully is considered as web browsing delay / web page download time. LSA-wise 3 popular websites to be taken
7	Video Streaming performance (in seconds)	TRAI Prescribed Video of 20 Sec with 25 sec Timeout & without caching https://www.youtube.com/watch?v=rH2RjvI0DFs