

# Operator Assisted Drive Test Report

For

## Ernakulam

12<sup>th</sup> to 15<sup>th</sup> Dec 2023

Ernakulam – Thrishur - Ernakulam (NH/SH) - 148 Kms  
(12<sup>th</sup> Dec 2023)

Ernakulam & Surrounding Area - 262 Kms  
(13<sup>th</sup> to 15<sup>th</sup> Dec 2023)

## 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 3G/4G TSPs have not met the Rx Quality.

The Operator Assisted Drive Test has been carried out by the Regional Office, Bangalore with the help of Service Providers from **12<sup>th</sup> to 15<sup>th</sup> Dec 2023**. The drive test covered the route of **410 Kms** including NH/SH of **148 Kms** & **6** hotspots. Approximately **550** calls were made for each of the **8** networks: three 2G networks, one 3G network, and four LTE networks covering four TSPs.

Overview

Voice  
Summary

Data  
Summary

# Overview

Regional Office, TRAI Bengaluru conducted Operator Assisted Drive Test from **12<sup>th</sup> to 15<sup>th</sup> Dec 2023** covering various locations in **Ernakulam & Surrounding Region**. The performance of Airtel, BSNL, Vodafone Idea, and Jio were monitored across various technologies (2G, 3G, and 4G/4G). The test results obtained from these drive tests were utilized to assess the network quality for Voice and Data services in terms of

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

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

## Drive Test Details:

**Voice Tests:** Calls were made for 90 sec duration with a wait time of 10 sec between calls in all technologies. The drive test covered a drive route of approximately **410 KMs** including **NH/SH of 148 Kms** over a period of 4 days from **12<sup>th</sup> to 15<sup>th</sup> Dec 2023**. Approximately 550 calls were made for each of the 8 networks: three 2G (Lock Mode) networks, one 3G (Dual mode) network, and four 4G networks covering 4 unique TSPs.

**Data Tests:** Dynamic data test (Test Data on Move) was conducted for **410 KMs** including **NH/SH of 148 Kms** over a period of 4 days for download throughput for 3G & 4G technology. Data Tests were performed at 6 static locations; three 2G (Lock mode) networks, one 3G (Dual mode) network, and four 4G (Free mode) networks covering 4 unique TSPs were tested. **All the data through put figure mentioned in the report are based on the average value.**

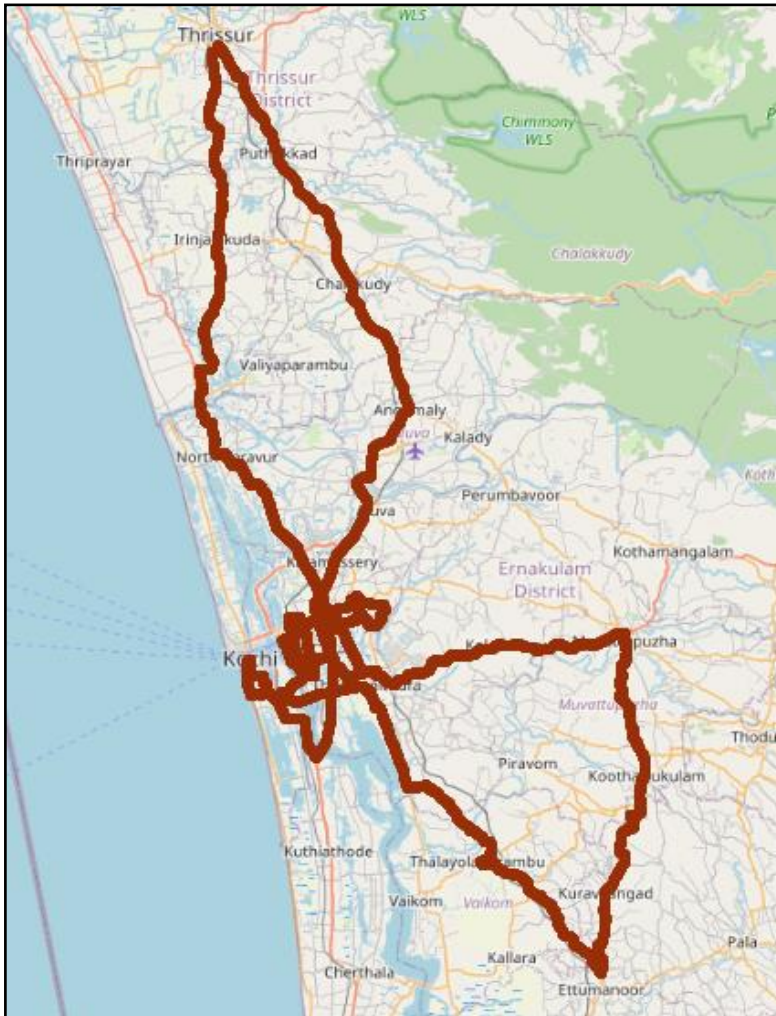
\* For Voice and Data KPI's, 2G measurement is done with UE locked on 2G, 3G measurement is done with UE in Dual mode (2G & 3G) and 4G measurement is done with UE in Free Mode.

\* 3G KPI's which are calculated from UE in Dual Mode (2G & 3G) includes samples and events of 2G.

\* 4G KPI's which are calculated from the UE in Free Mode included samples and events of 2G & 3G.

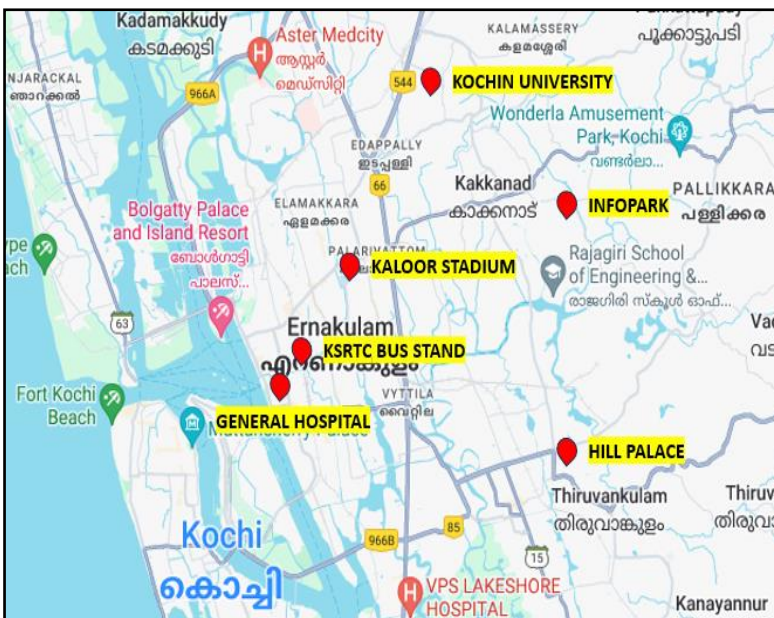
Service	Specifications
Download	2G (Locked) - 500KB, 3G (Dual) - 20 MB, 4G (Free) - 40 MB
Upload	2G (Locked) - 100KB, 3G (Dual) - 5 MB, 4G (Free) - 10 MB
Web Browsing	3 links of e/m commerce website <a href="http://www.amazon.in">www.amazon.in</a> , <a href="http://www.flipkart.com">www.flipkart.com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

## Voice & Dynamic Data Test (Data Test on Move) Drive Route



Areas covered	
ALUVA	ANGAMALI
CHALAKKUDI	PUTHUKKAD
THRISSUR	IRINJALAKUDA
KODUNGALLUR	PARAVOOR
EDAPPALLI	KANJIRAMATTAM
ETTUMANOOR	KOOTHATTUKULAM
MUVATTUPUZHA	KOLANCHERY
THRIPUNITHURA	FORT KOCHI
THEVARA	KADAVANTHARA
PALARIVATTOM	VYTILLA

## Data Service Test- Static Locations



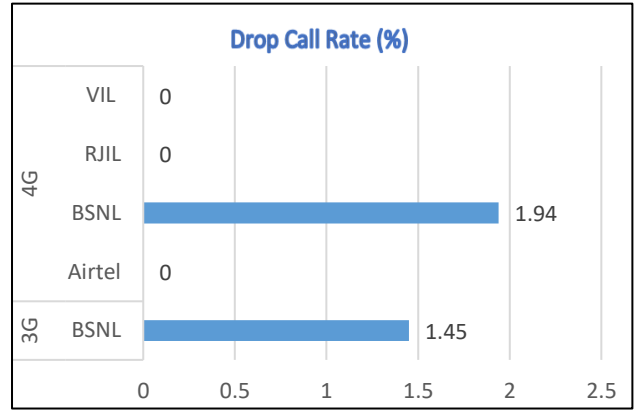
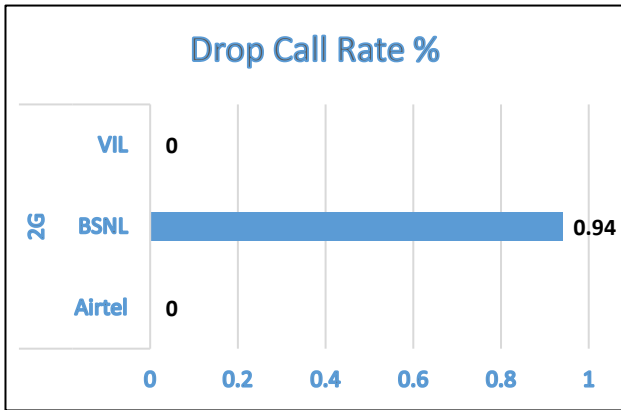
1. GENERAL HOSPITAL
2. KSRTC BUS STAND
3. KALOOR STADIUM
4. COCHIN UNIVERSITY
5. INFOPARK
6. HILL PALACE MUSEUM

# Voice Calls

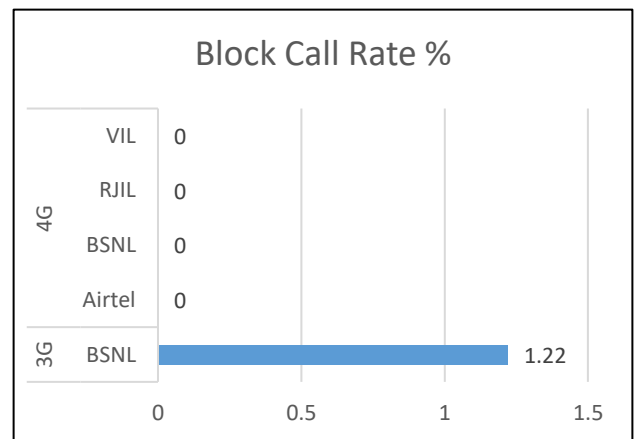
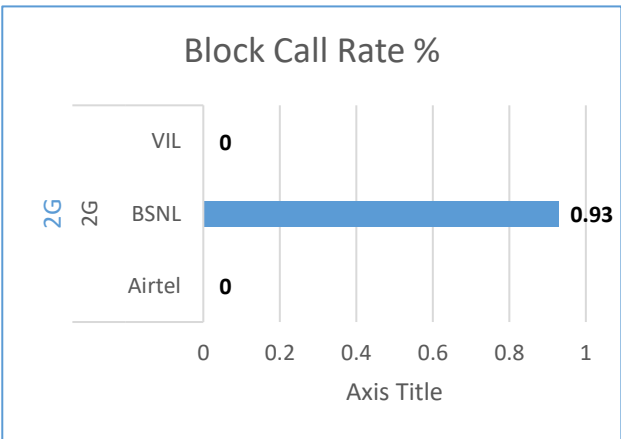
## Key Observations

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

Drop Call Rate (%)



Block Call Rate (%)



KPIs	2G			3G	4G			
	Airtel	BSNL	VIL	BSNL	Airtel	BSNL	RJIL	VIL
Drop Call Rate %	0	0.94	0	1.45	0	1.94	0	0
Block Call Rate %	0	0.93	0	1.22	0	0	0	0

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

# Voice Calls

## Key Observations

### Coverage

a) Percentage of coverage samples for 2G  $\geq$  -85 dBm.

TSPs	2G		
	Airtel	BSNL	VIL
Coverage%	93.38	78.30	96.39

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

TSPs	3G	4G			
	BSNL	Airtel	BSNL	JIO	VIL
Coverage %	86.39	98.06	80.00	98.67	99.11

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

TSPs	3G	4G			
	BSNL	Airtel	BSNL	JIO	VIL
Time Spent on 3G/4G%	8.18	100	21.9	100	99.38

# Summary

## City Level Summary

Voice Call	2G		
	Airtel	BSNL	VIL
Call Attempt	523	642	537
Blocked Call Rate (%)	0	0.93	0
CSSR% (Accessibility)	100	99.07	100
Drop Call Rate (%)	0	0.94	0
Rx Quality (%)	97.96	97.2	97.57
Mobility HOSR (%)	99.74	97.87	99.06

Voice Call	3G/4G				
	BSNL 3G	Airtel 4G	BSNL 4G	JIO 4G	VIL 4G
Call Attempt	490	536	155	524	551
Blocked Call Rate (%)	1.22	0	0	0	0
CSSR% (Accessibility)	98.78	100	100	100	100
Drop Call Rate (%)	1.45	0	1.94	0	0
Rx Quality (%)	61.1	92.51	87.7	93.71	90.52
Mobility HOSR (%)	98.94	99.72	97.9	99.77	99.11

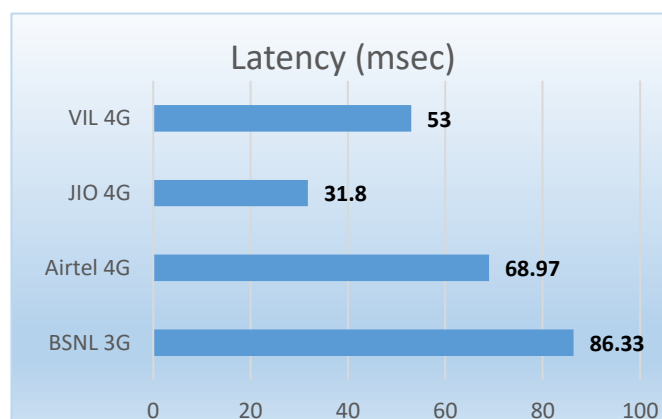
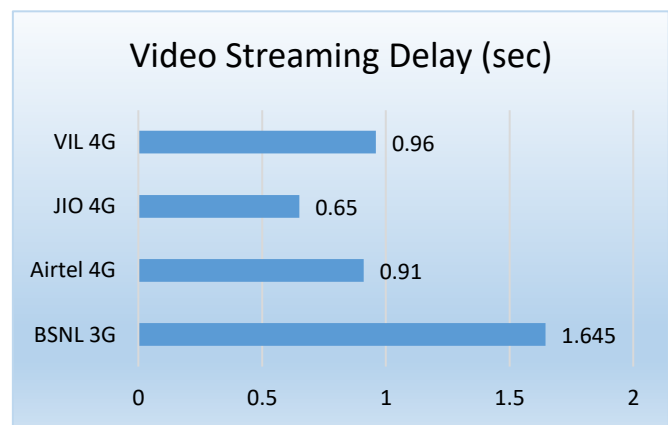
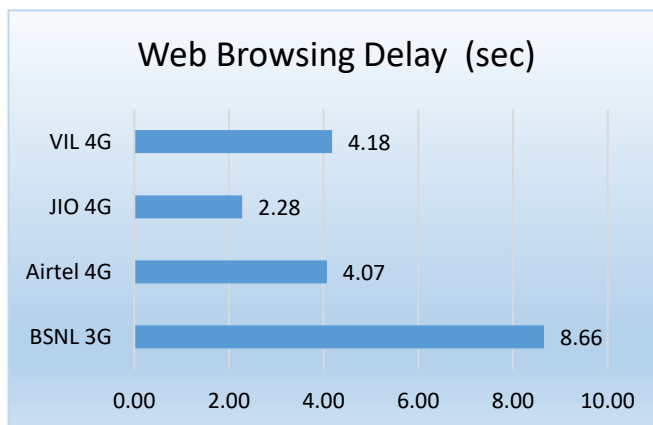
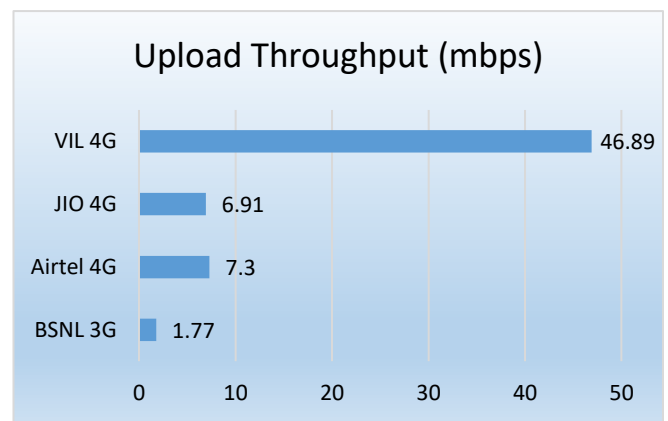
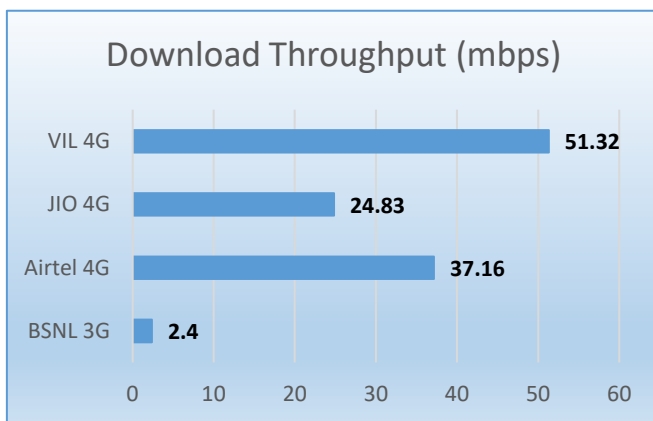
# Data Services Static

## Key Observations

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:



# Summary

## City Level Summary(contd.)

Data Services Static	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	189.95	74.3	154.15
Upload Throughput (kbps)	95.46	46.13	68.05
Web Browsing Delay (sec)	55.5	17.17	59.34
Latency (msec)	390.17	240.9	589

Data Services Static	3G/4G			
	BSNL 3G	Airtel 4G	JIO 4G	VIL 4G
Download Throughput (mbps)	2.4	37.16	24.83	51.32
Upload Throughput (mbps)	1.77	7.3	6.91	46.89
Web Browsing Delay (sec)	8.66	4.07	2.28	4.18
Video Streaming Delay (sec)	1.645	0.91	0.65	0.96
Latency (msec)	86.33	68.97	31.8	53

Data Services Dynamic (Data Test on Move)	3G	4G			
	BSNL	Airtel	BSNL	JIO	VIL
Download Throughput (mbps)	2.05	10.81	3.84	8.25	18.86
Upload Throughput (mbps)	1.24	8.10	1.86	2.97	7.96



# Summary

## City Level Data Services Static(contd.)

Data Services Static – General Hospital	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	205.16	109.8	163.83
Upload Throughput (kbps)	96.34	49.4	60.6
Web Browsing Delay (sec)	63.77	15.5	58.89
Latency (ms)	409.6	235.8	697

Data Services Static – General Hospital	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	1.61	16.74	13.34	59.86
Upload Throughput (Mbps)	1.51	5.82	13.63	33.64
Web Browsing Delay (sec)	9.12	3.78	3.05	4.17
Video Streaming Delay (sec)	1.49	0.99	0.57	0.77
Latency (ms)	88.4	66.8	30.4	48.6

Data Services Static – KSRTC Bus Stand	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	213.36	109.2	172.84
Upload Throughput (kbps)	100.58	52.2	83.484
Web Browsing Delay (sec)	56.18	15.25	63.852
Latency (msec)	359	234.8	716

Data Services Static - KSRTC Bus Stand	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	2.61	39	12.88	48.1
Upload Throughput (Mbps)	2.5	9.81	4.82	50.934
Web Browsing Delay (sec)	8.27	4.32	2.02	4.102
Video Streaming Delay (sec)	1.58	0.83	0.58	1.2
Latency (ms)	88	64.2	31	58.6

# Summary

## City Level Data Services Static(contd.)

Data Services Static – Kaloor Stadium	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	141.54	63	121.21
Upload Throughput (kbps)	109.12	37.6	40.84
Web Browsing Delay (sec)	57.97	18.112	73.822
Latency (ms)	389.6	252	414

Data Services Static – Kaloor Stadium	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	2.63	25.33	13.44	15.27
Upload Throughput (Mbps)	2.43	4.78	4.6	45.05
Web Browsing Delay (sec)	8.61	4.12	2.48	4.39
Video Streaming Delay (sec)	1.65	0.85	0.72	1.12
Latency (ms)	85.6	66.8	33.3	52

Data Services Static – Cochin University	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	174.74	75	174.73
Upload Throughput (kbps)	81.78	41	71.49
Web Browsing Delay (sec)	50.47	18.52	53.422
Latency (msec)	312.6	258	582

Data Services Static – Cochin University	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	1.4	58.55	34.2	41.3
Upload Throughput (Mbps)	1.24	8.62	8.85	49.01
Web Browsing Delay (sec)	8.74	4.26	1.98	4.32
Video Streaming Delay (sec)	1.78	0.96	0.65	1
Latency (ms)	83.2	69.2	30.3	54

# Summary

## City Level Data Services Static(contd.)

Data Services Static – Info Park	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	212.72	44.8	168.66
Upload Throughput (kbps)	87.74	36.8	70.17
Web Browsing Delay (sec)	50.57	18.52	52.11
Latency (ms)	396	258	617

Data Services Static – Info Park	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	2.3	46.38	30.1	73.15
Upload Throughput (Mbps)	1.32	5.79	3.04	52.63
Web Browsing Delay (sec)	9.02	4.01	2.08	4.08
Video Streaming Delay (sec)	1.72	0.93	0.66	0.83
Latency (ms)	88.8	72.6	30.7	49

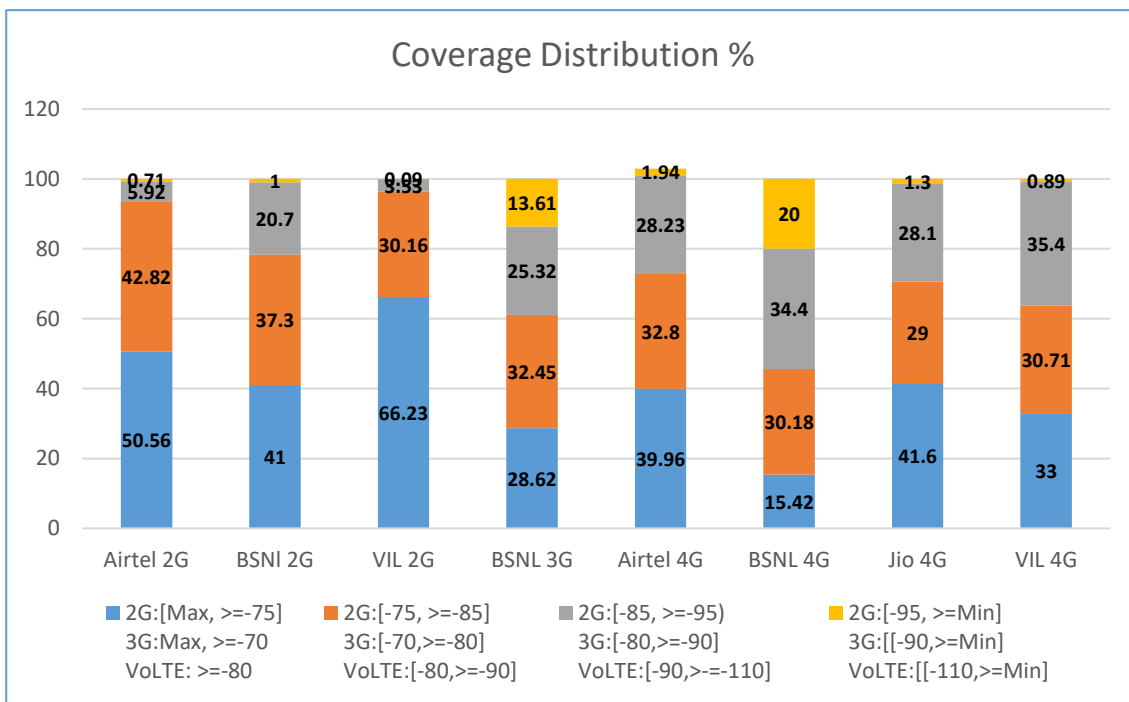
Data Services Static – Hill Palace Museum	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	192.2	43.8	123.64
Upload Throughput (kbps)	97.18	59.8	81.72
Web Browsing Delay (sec)	54.01	17.15	53.92
Latency (msec)	474.2	206.8	511

Data Services Static – Hill Palace Museum	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	3.86	36.97	44.99	70.24
Upload Throughput (Mbps)	1.62	9	6.51	50.07
Web Browsing Delay (sec)	8.21	3.92	2.05	4.03
Video Streaming Delay (sec)	1.65	0.91	0.73	0.86
Latency (ms)	84	74.2	35.2	54

# I. Coverage Details

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  $\geq -85$  dBm, RSCP is  $\geq -90$  dBm & RSRP  $\geq -110$ dBm. The details are as follows.

TSP	Coverage Rate %
Airtel 2G	93.38
BSNI 2G	78.30
VIL 2G	96.39
BSNL 3G	86.39
Airtel VoLTE	98.06
BSNL 4G	80.00
Jio VoLTE	98.67
VIL VoLTE	99.11

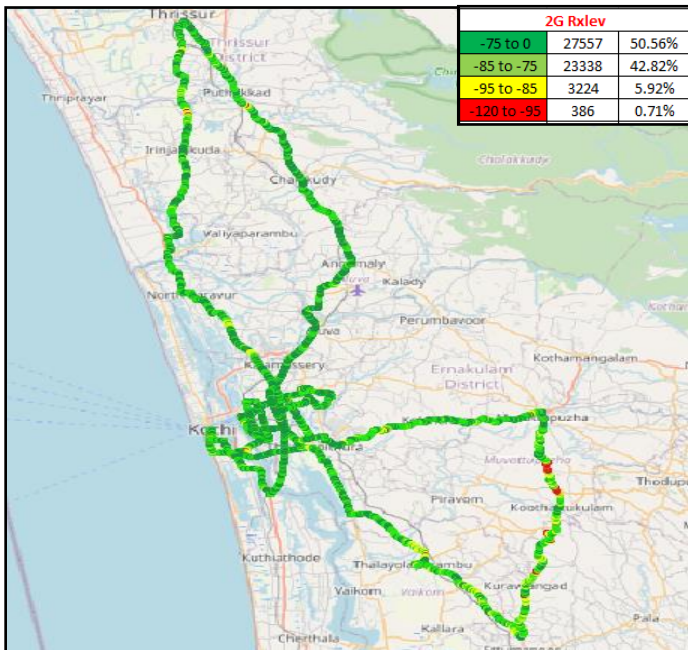


# I. Coverage Details

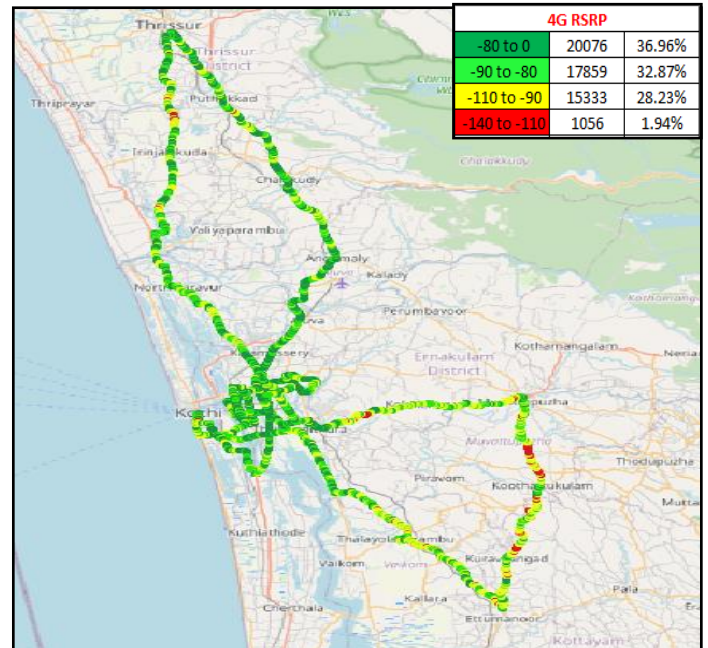
## AIRTEL

Technology	Coverage Rate %
2G	93.38
4G	98.06

### 2G



### 4G



2G		
Overall RxLevel	# Samples	% PDF
[Max, >=-75]	27557	50.56
[-75, >=-85)	23338	42.82
[-85, >=-95)	3224	5.92
[-95, >=Min)	386	0.71
<b>Total</b>	<b>54505</b>	<b>100</b>

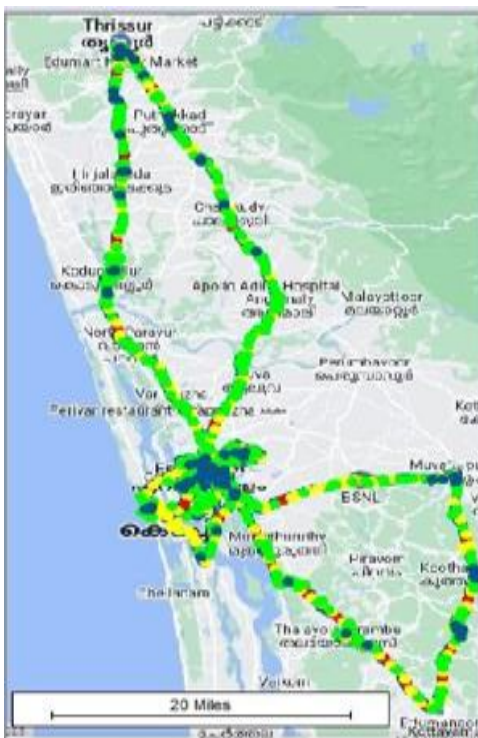
4G/VoLTE		
Overall RSRP	# Samples	% PDF
[Max, >=-80]	20076	36.96%
[-80, >=-90)	17859	32.87%
[-90, >=-110)	15333	28.23%
[-110, >=Min)	1056	1.94%
<b>Total</b>	<b>54324</b>	<b>100</b>

# I. Coverage Details

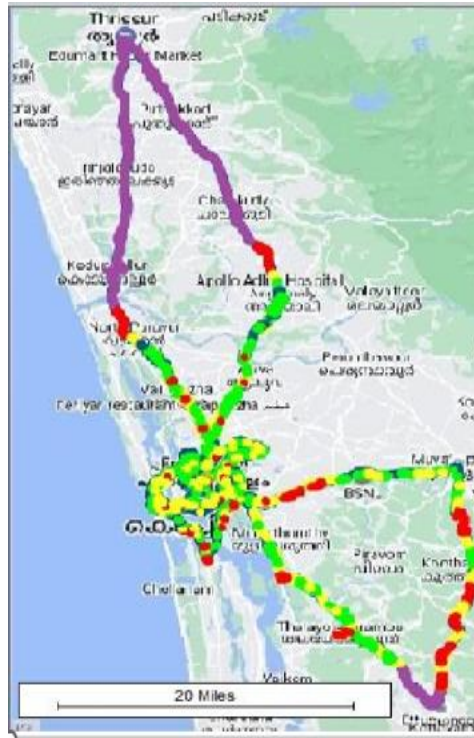
## BSNL

Technology	Coverage Rate %
2G	78.3
3G	86.39
4G	80.00

### 2G



### 3G



### 4G



2G		
Overall RxLevel	# Samples	% PDF
[Max, >=-75]	99352	41.0
[-75, >=-85]	90386	37.3
[-85, >=-95]	50161	20.7
[-95, >=Min]	2423	1.0
<b>Total</b>	<b>242322</b>	<b>100</b>

3G		
Overall RSCP	# Samples	% PDF
[Max, >=-70]	18530	28.62
[-70, >=-80]	21010	32.45
[-80, >=-90]	16393	25.32
[-90, >=Min]	8812	13.61
<b>Total</b>	<b>64745</b>	<b>100</b>

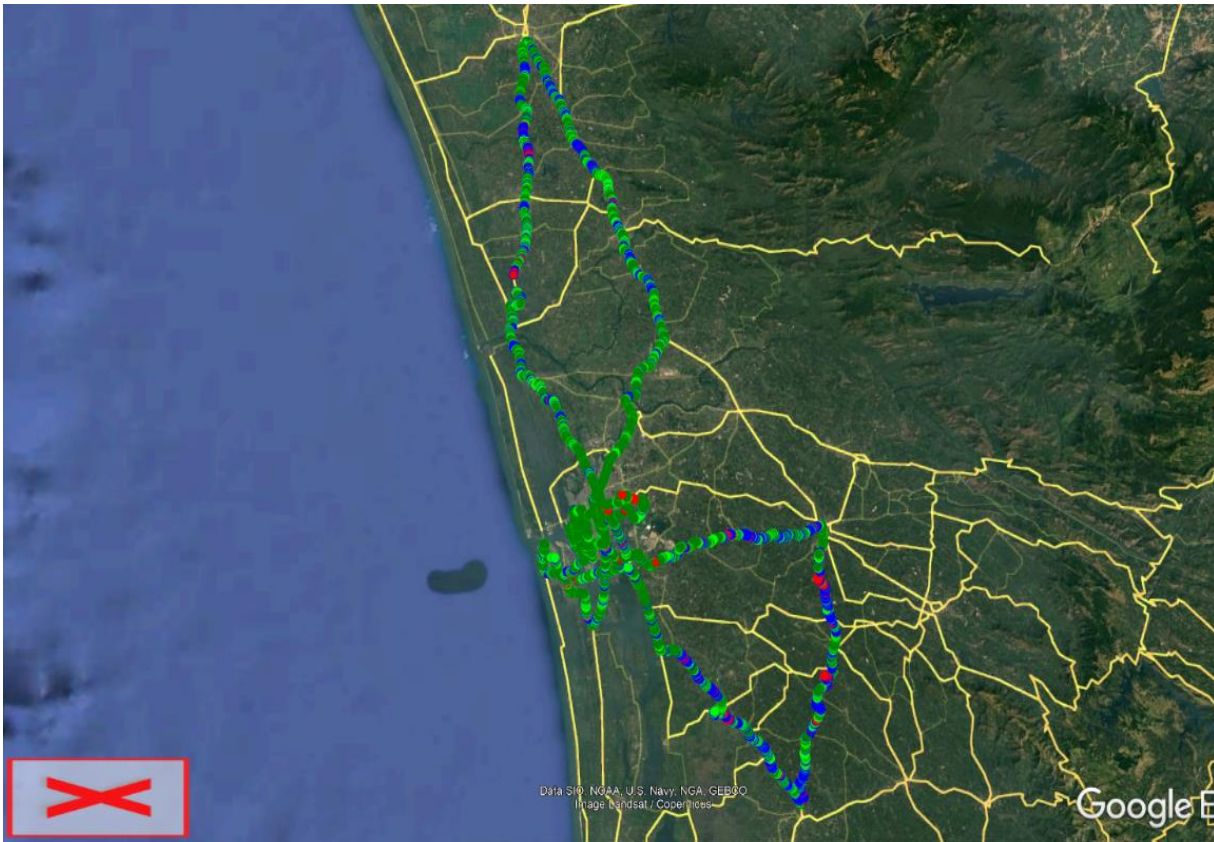
4G		
Overall RSRP	# Samples	% PDF
[Max, >=-80]	1031	15.42
[-80, >=-90]	2017	30.18
[-90, >=-110]	2299	34.40
[-110, >=Min]	1337	20.00
<b>Total</b>	<b>6683</b>	<b>100</b>



# I. Coverage Details

## JIO

Technology	Coverage Rate %
4G	98.67



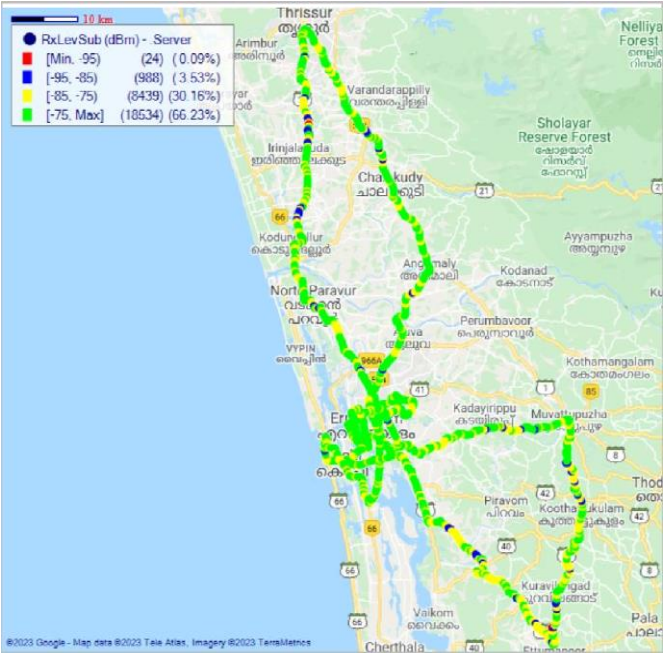
4G/VoLTE		
Overall RSRP	# Samples	% PDF
[Max, >=-80]	19281	41.6
[-80, >=-90)	13452	29.0
[-90, >=-110)	13010	28.1
[-110, >=Min)	617	1.3
<b>Total</b>	<b>46360</b>	<b>100</b>

# I. Coverage Details

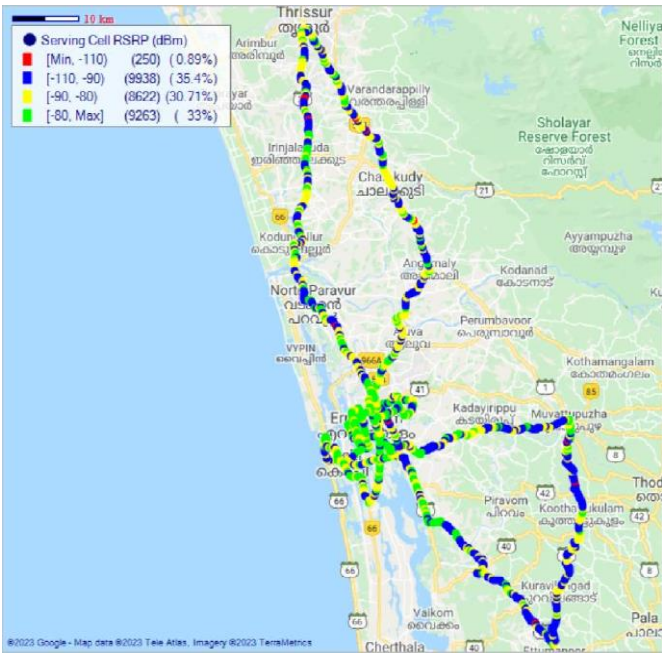
## VIL

Technology	Coverage Rate %
2G	96.39
4G	99.11

### 2G



### 4G



2G		
Overall RxLevel	# Samples	% PDF
[Max, >=-75]	18534	66.23
[-75, >=-85)	8439	30.16
[-85, >=-95)	988	3.53
[-95, >=Min)	24	0.09
<b>Total</b>	<b>27985</b>	<b>100</b>

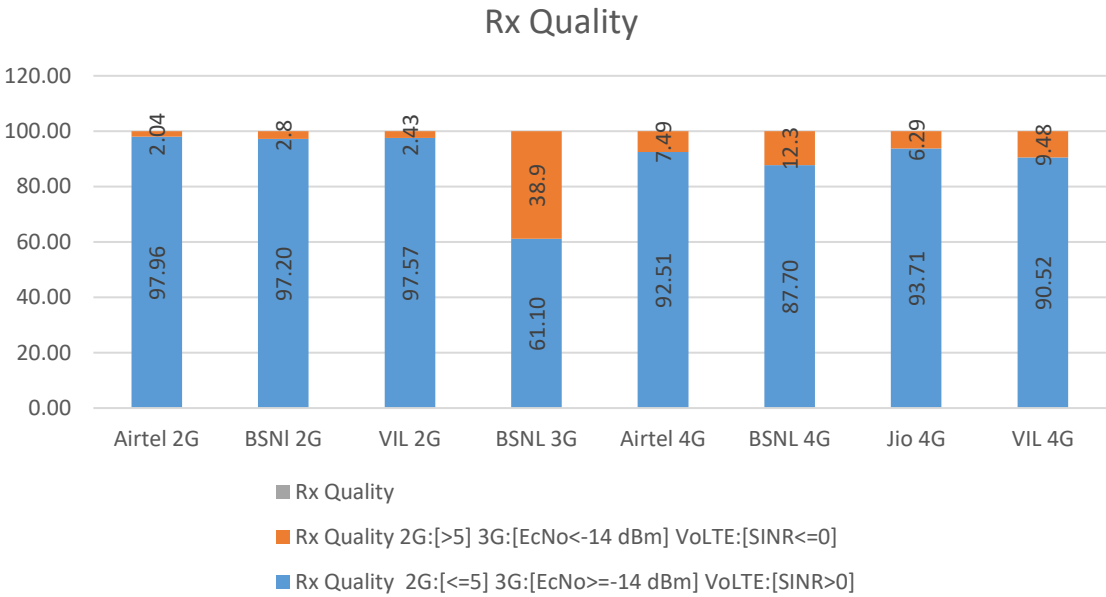
4G/VoLTE		
Overall RSRP	# Samples	% PDF
[Max, >=-80]	9263	33.00
[-80, >=-90)	8622	30.71
[-90, >=-110)	9938	35.40
[-110, >=Min)	250	0.89
<b>Total</b>	<b>28073</b>	<b>100</b>



## II. Quality Details

For measuring voice quality, as per the QoS norms, RxQual  $\leq 5$  for GSM TSPs, EcNo  $\geq -14$  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  $\geq 95\%$ .

TSP	Rx Quality %
Airtel 2G	<b>97.96</b>
BSNI 2G	<b>97.20</b>
VIL 2G	<b>97.57</b>
BSNL 3G	<b>61.10</b>
Airtel VoLTE	<b>92.51</b>
BSNL 4G	<b>87.70</b>
Jio VoLTE	<b>93.71</b>
VIL VoLTE	<b>90.52</b>

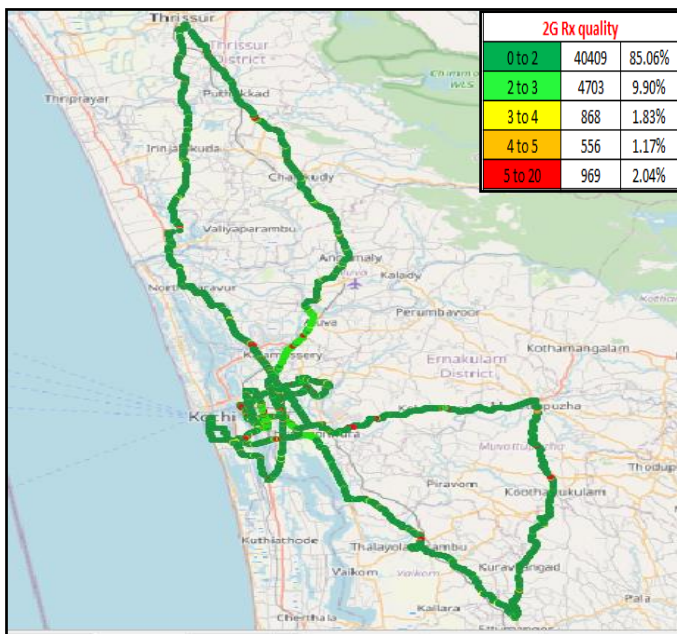


## II. Quality Details

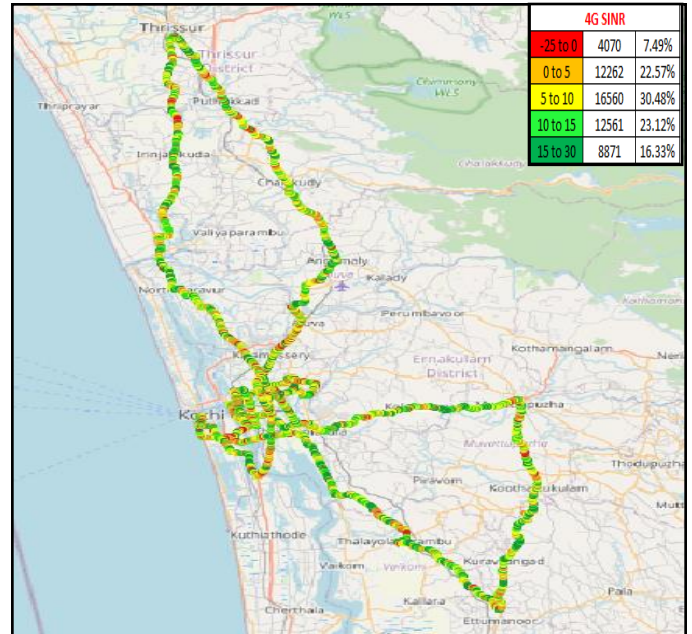
### Airtel

Technology	Rx Quality %
2G	97.96
4G	92.51

#### 2G



#### 4G



Overall Rx Quality	# Samples	% PDF
(Min, <=2)	40409	85.06%
(2, <=3)	4703	9.90%
(3, <=4)	868	1.83%
(4, <=5)	556	1.17%
(5, <=Max)	969	2.04%
<b>Total</b>	<b>47505</b>	<b>100</b>

Overall SINR	# Samples	% PDF
(Min, <=0)	4070	7.49%
(0, <=5)	12262	22.57%
(5, <=10)	16560	30.48%
(10, <=15)	12561	23.12%
(15, <=Max)	8871	16.33%
<b>Total</b>	<b>54324</b>	<b>100</b>

# II. Quality Details

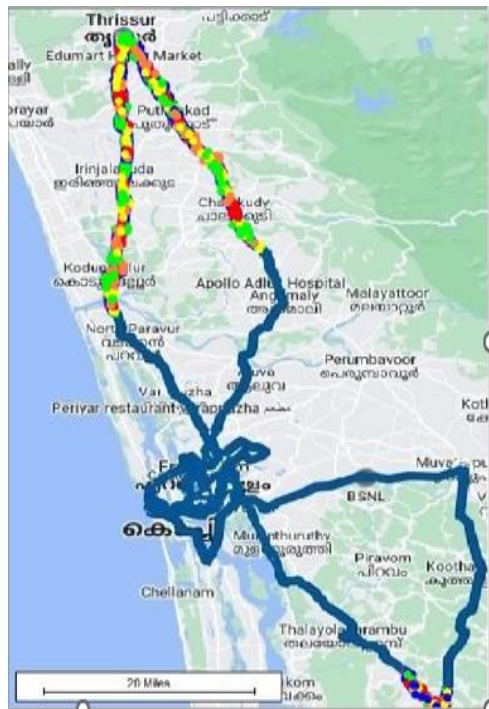
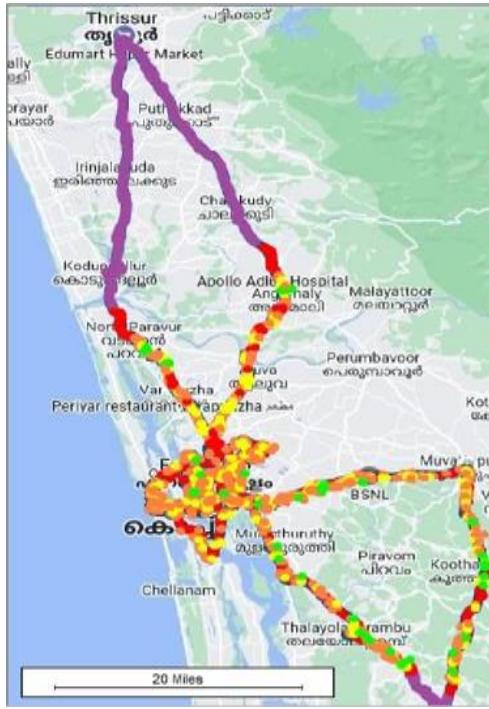
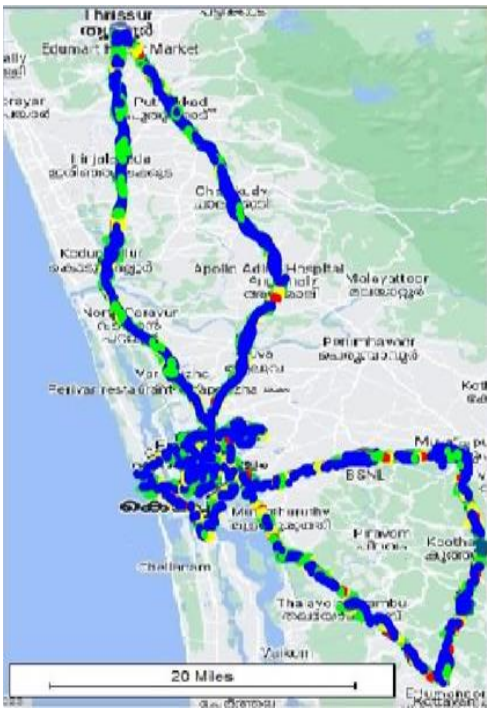
## BSNL

Technology	Rx Quality %
2G	97.20
3G	61.1
4G	87.70

### 2G

### 3G

### 4G



Overall Rx Quality	# Samples	% PDF
(Min, <=2)	194342	80.2
(2, <=3)	17447	7.2
(3, <=4)	11147	4.6
(4, <=5)	12601	5.2
(5, <=Max)	8785	2.8
<b>Total</b>	<b>242322</b>	<b>100</b>

Overall EcNo	# Samples	% PDF
(Max, <=-6)	129	0.2
(-6, <=-9)	1424	2.2
(-9, <=-11)	2655	4.1
(-11, <=-14)	35351	54.6
(-14, <= Min)	25186	38.9
<b>Total</b>	<b>64745</b>	<b>100</b>

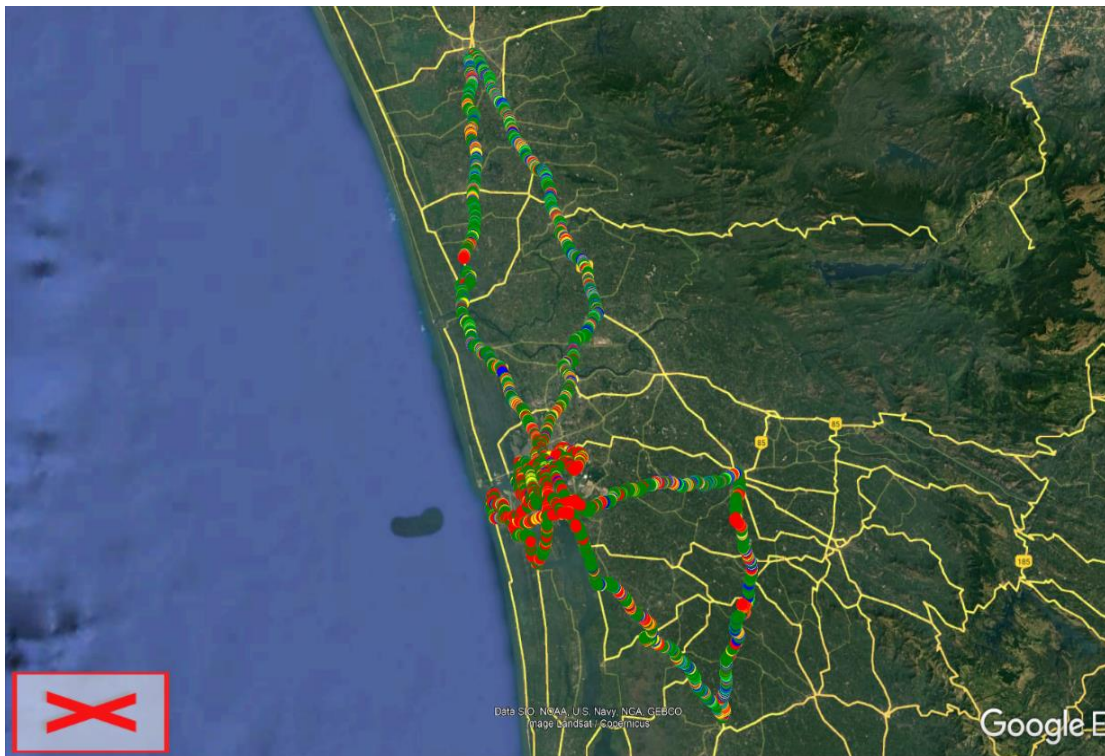
Overall SINR	# Samples	% PDF
(MIN, <=0)	822	12.3
(0, <=5)	1771	26.5
(5, <=10)	1584	23.7
(10, <=15)	20.8	1390
(15, <= Min)	1116	16.7
<b>Total</b>	<b>6683</b>	<b>100</b>



## II. Quality Details

### JIO

Technology	Rx Quality (%)
4G/4G	93.71

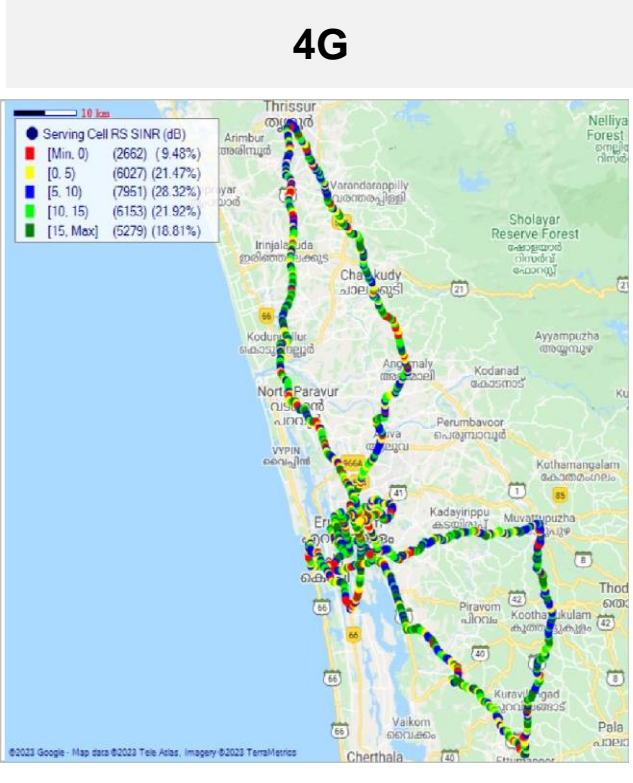
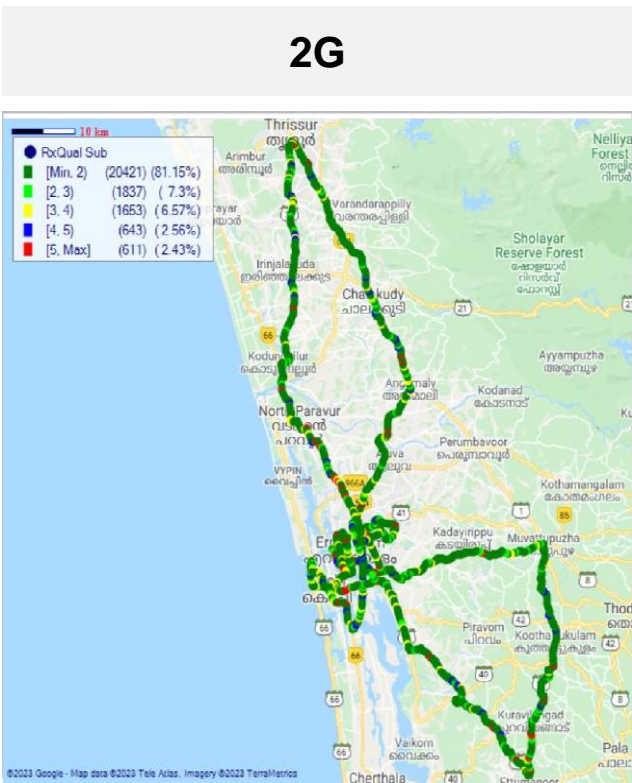


Overall SINR	# Samples	% PDF
(Min, <=0)	2905	6.3%
(0, <=5)	7168	15.5%
(5, <=10)	10592	22.8%
(10, <=15)	11753	25.3%
(15, <=Max)	13956	30.1%
<b>Total</b>	<b>46374</b>	<b>100%</b>

# II. Quality Details

## VIL

Technology	Rx Quality %
2G	<b>97.57</b>
4G	<b>90.52</b>

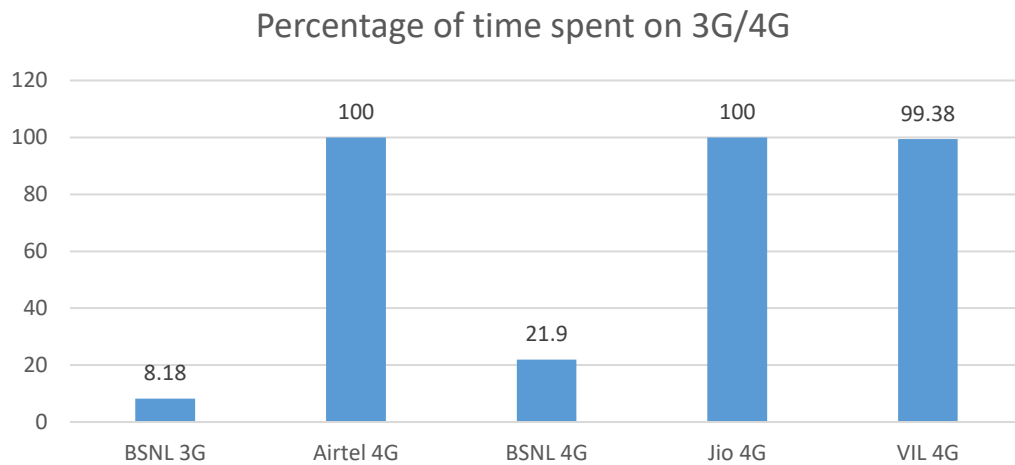


Overall Rx Quality	# Samples	% PDF
(Min, <=2)	20421	81.15
(2, <=3)	1837	7.30
(3, <=4)	1653	6.57
(4, <=5)	643	2.56
(5, <=Max)	611	2.43
<b>Total</b>	<b>25165</b>	<b>100</b>

Overall SINR	# Samples	% PDF
(Min, <=0)	2662	9.48
(0, <=5)	6027	21.47
(5, <=10)	7951	28.32
(10, <=15)	6153	21.92
(15, <=Max)	5279	18.81
<b>Total</b>	<b>28072</b>	<b>100</b>

### III. Technology Details

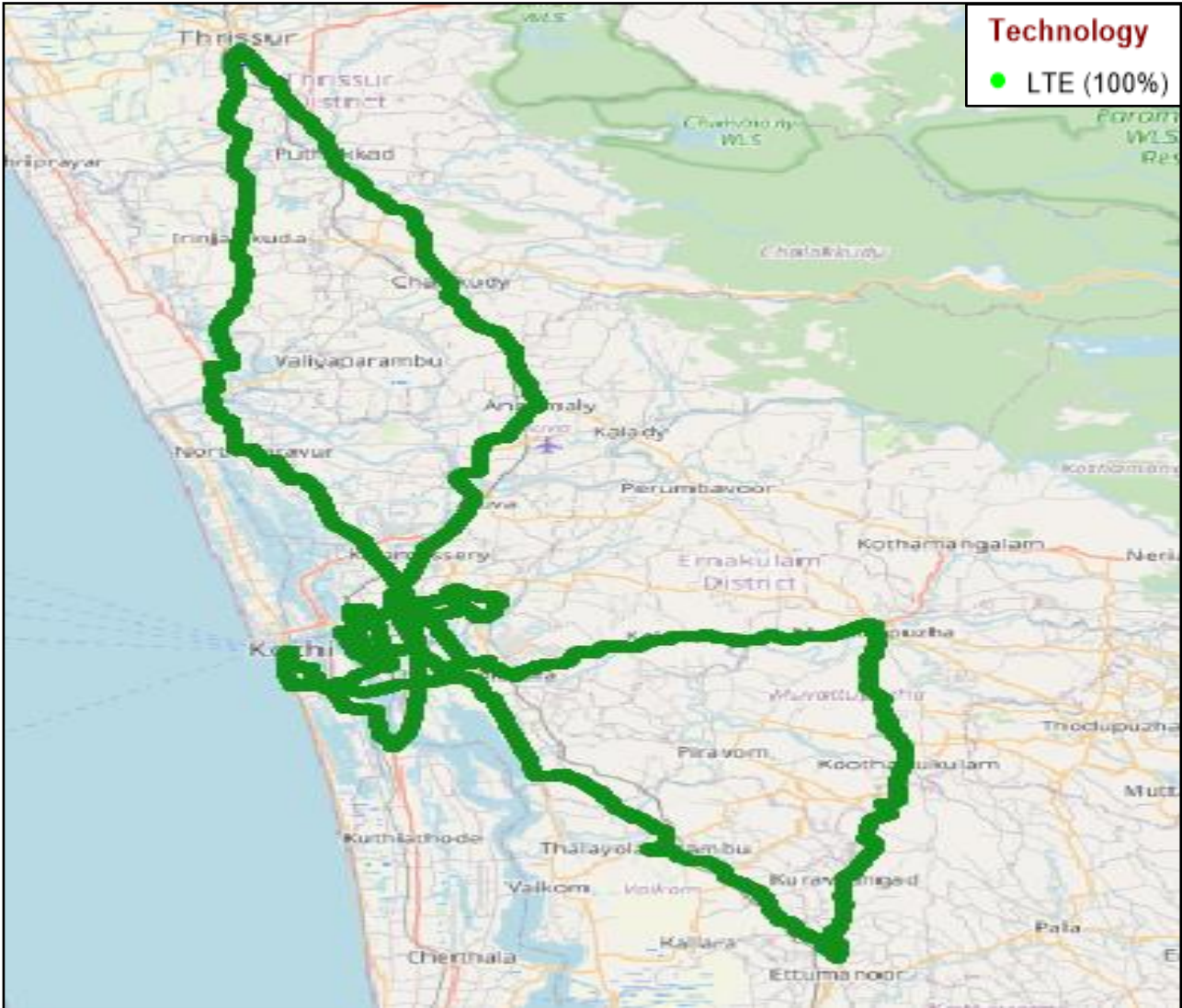
TSP	Time Spent on 3G/4G %
BSNL 3G	8.18
Airtel VoLTE	100
BSNL 4G	21.9
Jio VoLTE	100
VIL VoLTE	99.38



# III. Technology Details

## Airtel

Technology	Time Spent %
4G	100



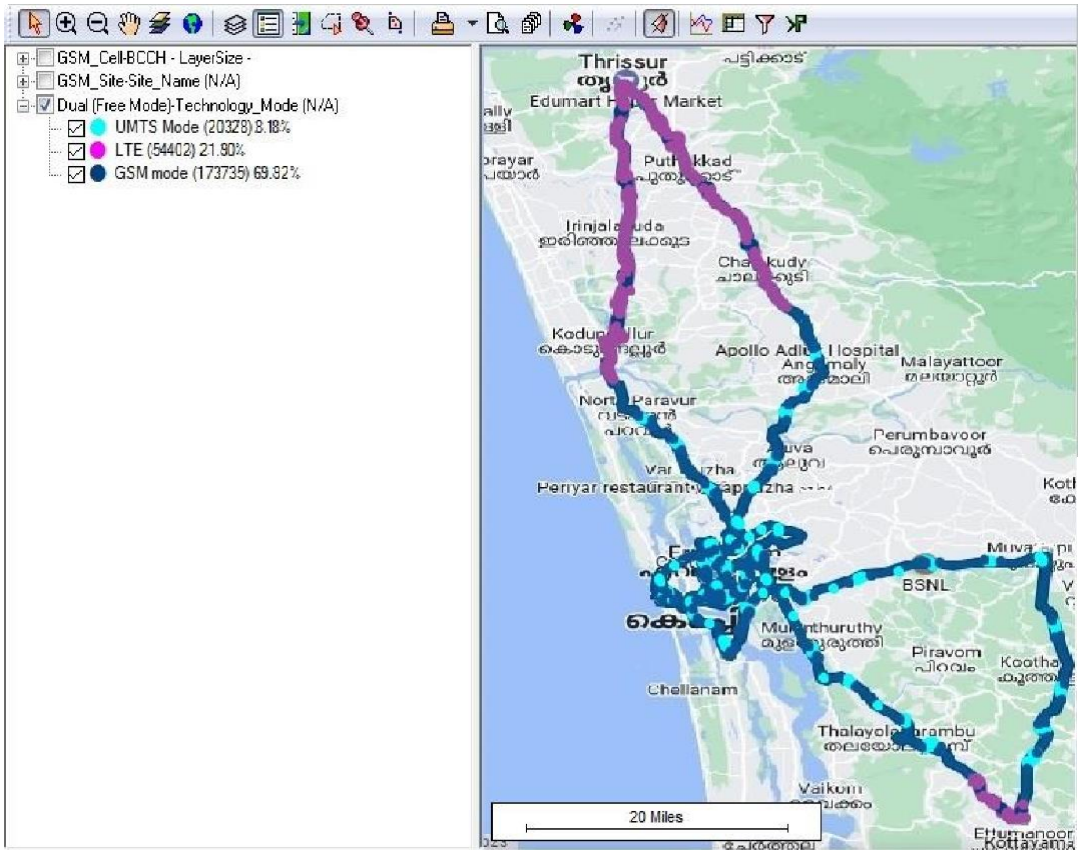


# III. Technology Details

## BSNL

Technology	Time Spent %
3G	8.18
4G	21.90

Technology Plot of complete SSA (4G)

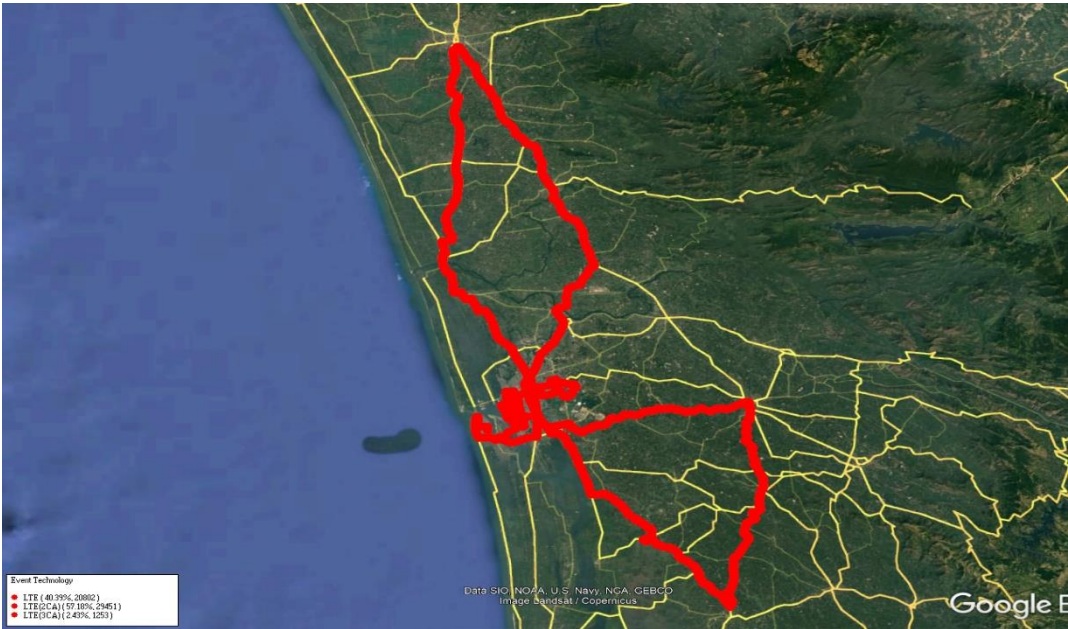




# III. Technology Details

## JIO

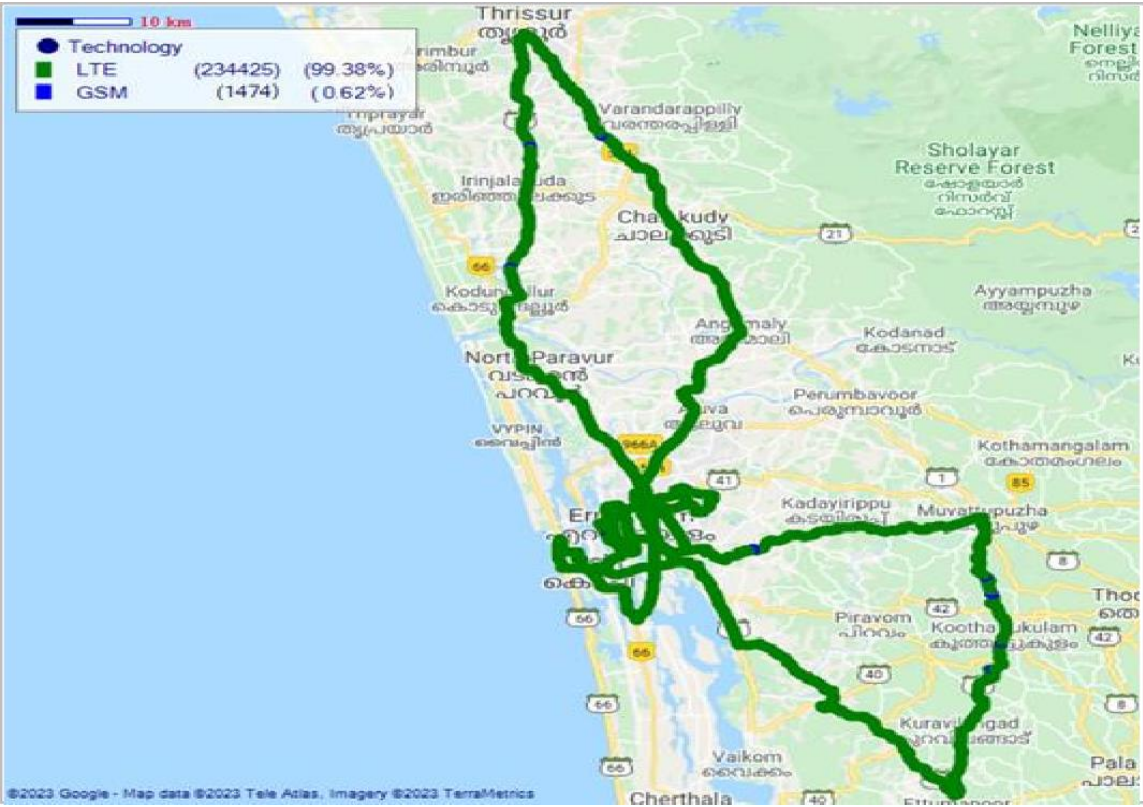
Technology	Time Spent %
4G	100



# III. Technology Details

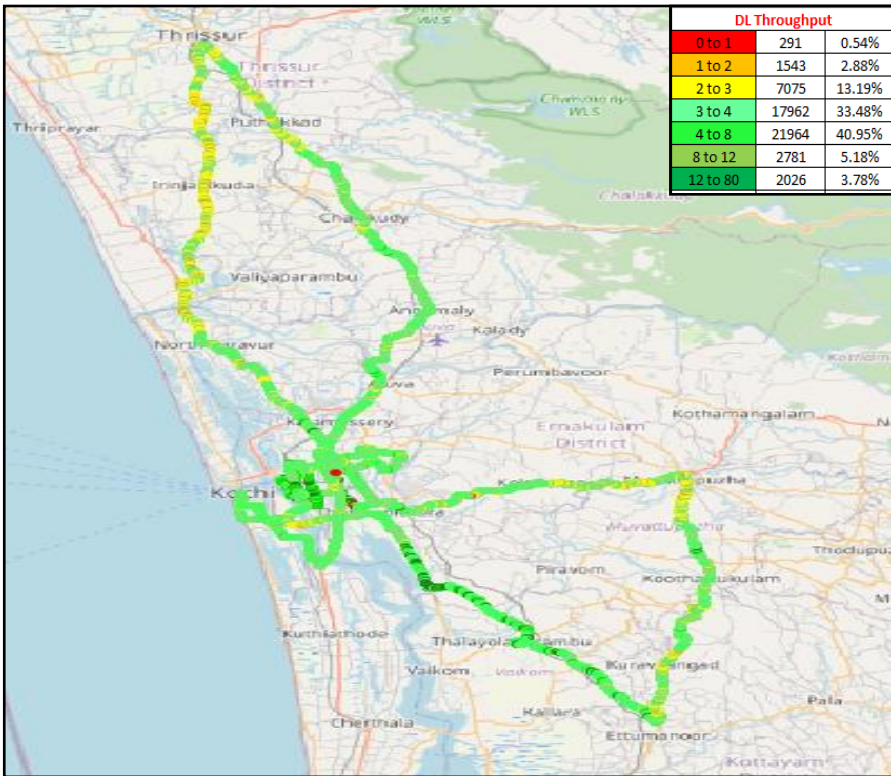
## VIL

Technology	Time Spent
4G	99.38

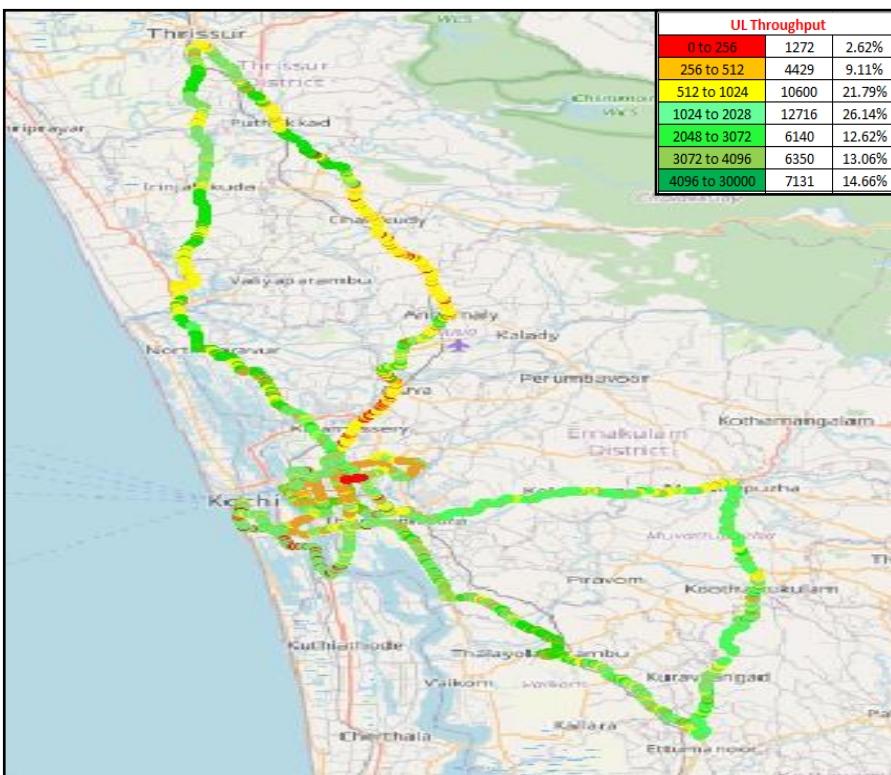


# IV. Dynamic Data Test (Data Test on Move) - 4G DL/UL Details

## Airtel



DL throughput	No. of Samples	%
0 to 1 Mbps	291	0.54
1 to 2 Mbps	1543	2.88
2 to 3 Mbps	7075	13.19
3 to 4 Mbps	17962	33.48
4 to 8 Mbps	21964	40.95
8 to 12 Mbps	2781	5.18
>12 Mbps	2026	3.78
Total	53642	100

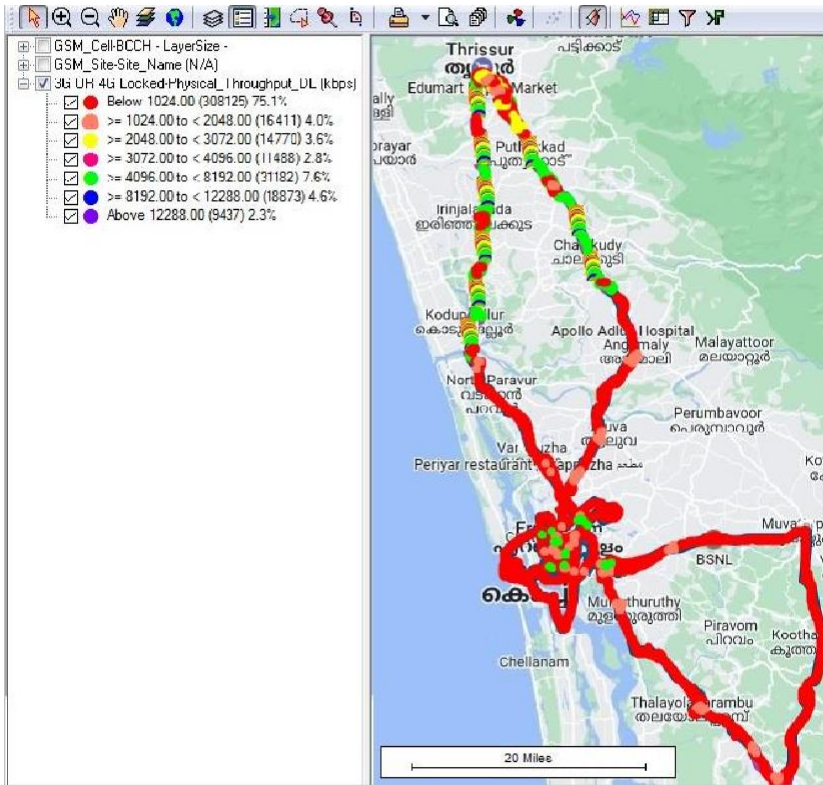


UL throughput	No. of samples	%
0 to 256 Kbps	1272	2.62
250 to 512 Kbps	4429	9.11
512 Kbps to 1 Mbps	10600	21.79
1 to 2 Mbps	12716	26.14
2 to 3 Mbps	6140	12.62
3 to 4 Mbps	6350	13.06
>4 Mbps	7131	14.66
Total	48638	100

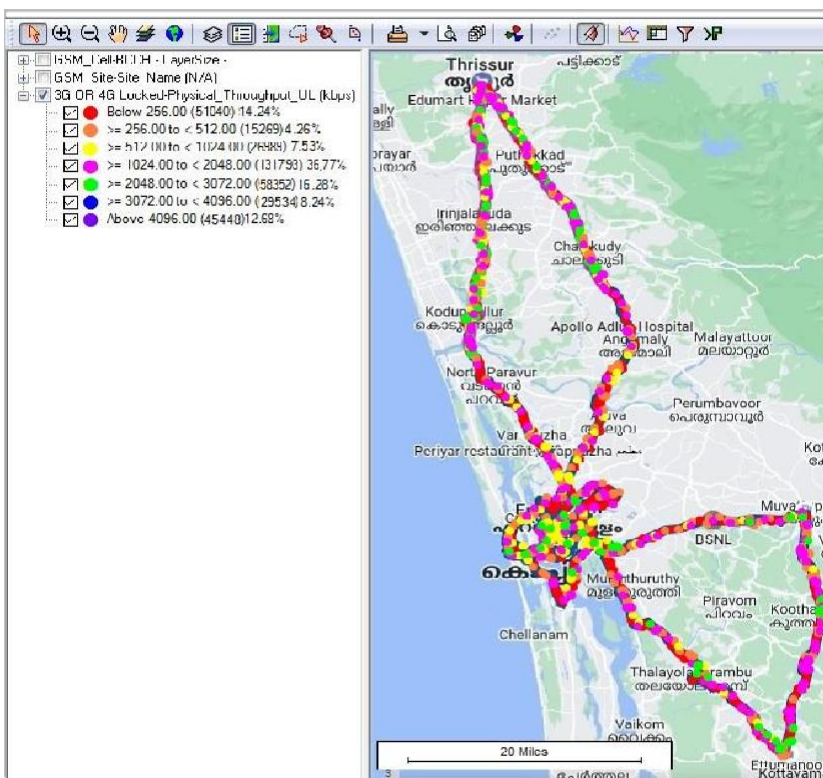


# IV. Dynamic Data Test(Data Test on Move)- 3G/4G DL/UL Details

## BSNL



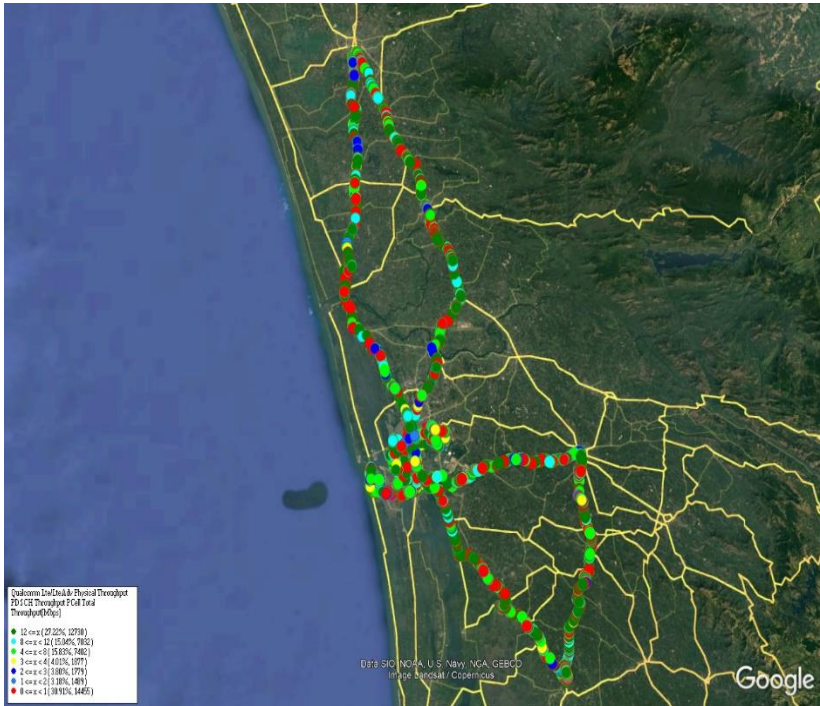
DL throughput	No. of Samples	%
0 to 1 Mbps	308125	75.1
1 to 2 Mbps	16411	4.0
2 to 3 Mbps	14770	3.6
3 to 4 Mbps	11488	2.8
4 to 8 Mbps	31182	7.6
8 to 12 Mbps	18873	4.6
>12 Mbps	9437	2.3
Total	410286	100



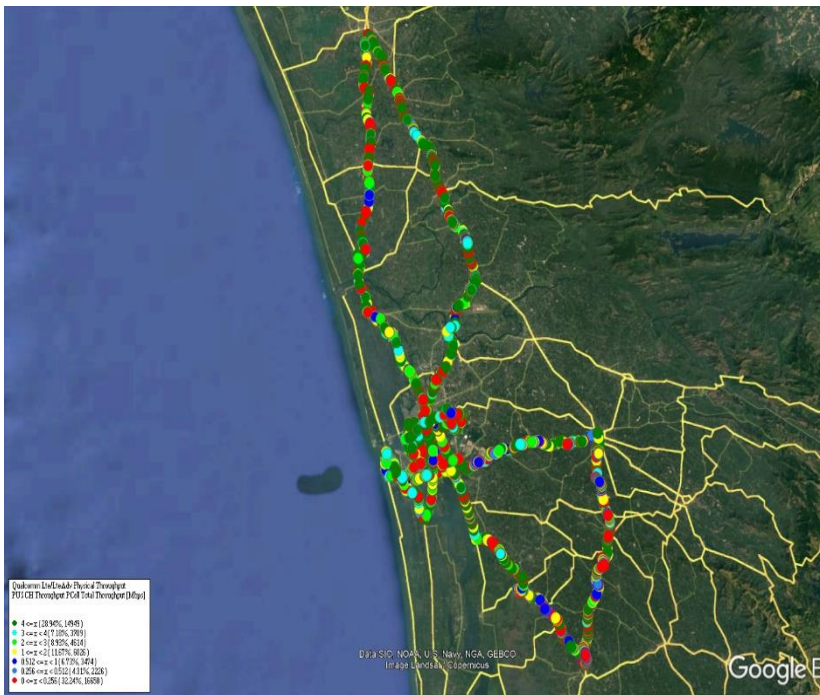
UL throughput	No. of Samples	%
0 to 1 Mbps	51040	14.24
1 to 2 Mbps	15269	4.26
2 to 3 Mbps	26989	7.53
3 to 4 Mbps	131793	36.77
4 to 8 Mbps	58352	16.28
8 to 12 Mbps	29534	8.24
>12 Mbps	45448	12.68
Total	358425	100

# IV. Dynamic Data Test(Data Test on Move)- 4G DL/UL Details

## JIO



DL throughput	No. of Samples	%
0 to 1 Mbps	14455	31
1 to 2 Mbps	1489	3
2 to 3 Mbps	1779	4
3 to 4 Mbps	1877	4
4 to 8 Mbps	7402	16
8 to 12 Mbps	7032	15
>12 Mbps	12730	27
<b>Total</b>	<b>46764</b>	<b>100</b>

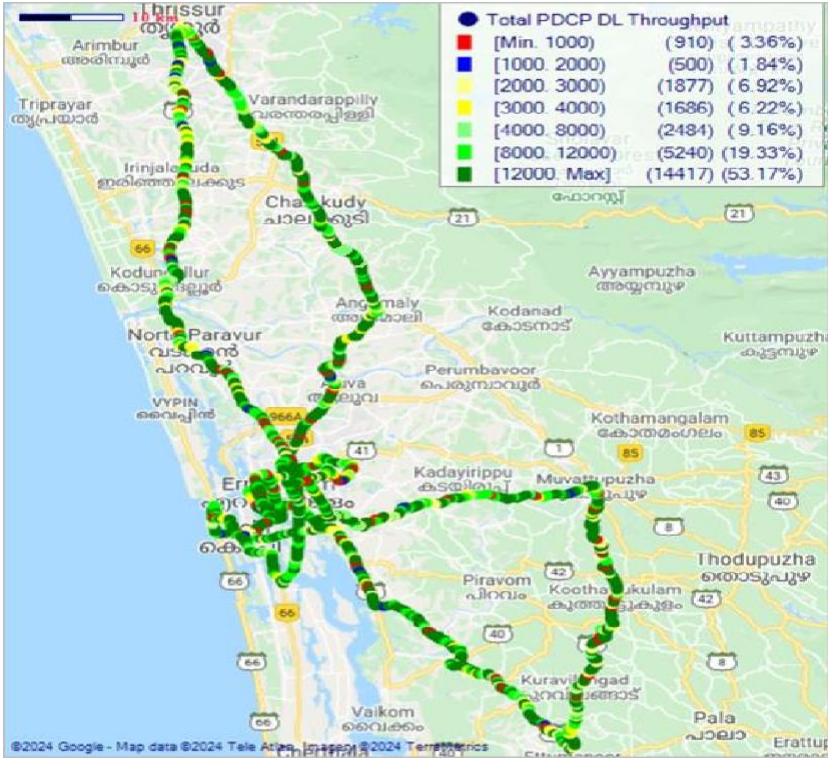


UL throughput	No. of samples	%
0 to 256 kbps Mbps	16650	32.24
256 to 512 kbps	2226	4.31
512 Kbps to 1 Mbps	3474	6.73
1 to 2 Mbps	6026	11.67
2 to 3 Mbps	4614	8.93
3 to 4 Mbps	3709	7.18
>4Mbps	14949	28.94
<b>Total</b>	<b>51648</b>	<b>100</b>

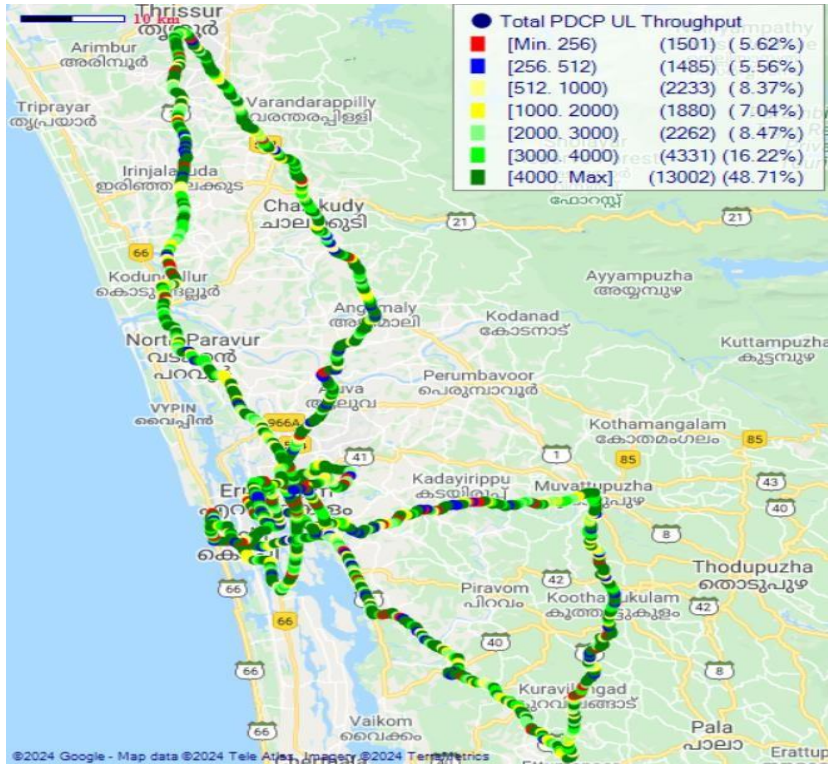


# IV. Dynamic Data Test (Data Test on Move)- 4G DL/UL Details

## VIL



DL throughput	No. of Samples	%
0 to 1 Mbps	910	3.36
1 to 2 Mbps	500	1.84
2 to 3 Mbps	1877	6.92
3 to 4 Mbps	1686	6.22
4 to 8 Mbps	2484	9.16
8 to 12 Mbps	5240	19.33
>12 Mbps	14417	53.17
Total	27114	100

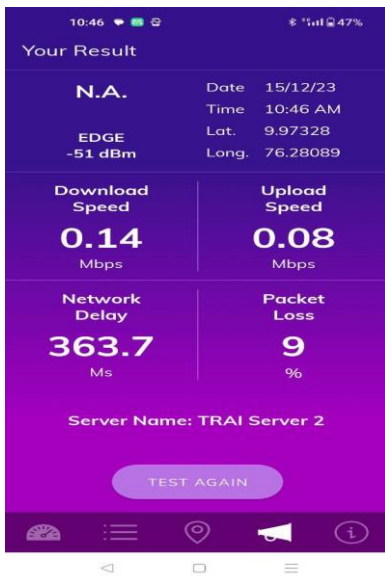


UL throughput	No. of samples	%
0 to 256 Kbps	1501	5.62
250 to 512 Kbps	1485	5.56
512 Kbps to 1 Mbps	2233	8.37
1 to 2 Mbps	1880	7.04
2 to 3 Mbps	2262	8.47
3 to 4 Mbps	4331	16.22
>4Mbps	13002	48.71
Total	26694	100

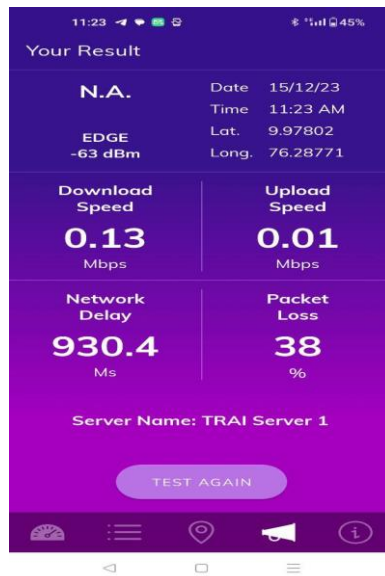
## V. TRAI My Speed App Test Details-2G

Techology-2G	General Hospital	KSRTC Bus Stand	Kaloor Stadium	Cochin University	Info Park	Hill Palace Museum
Download Speed (Mbps)	0.14	0.13	0.06	0.13	0.01	0.13
Upload Speed (Mbps)	0.08	0.01	0.03	0.14	0.03	0.01
Latency	NA	NA	NA	NA	NA	NA

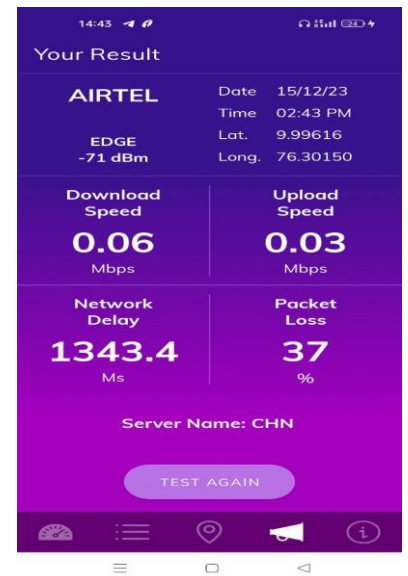
### General Hospital



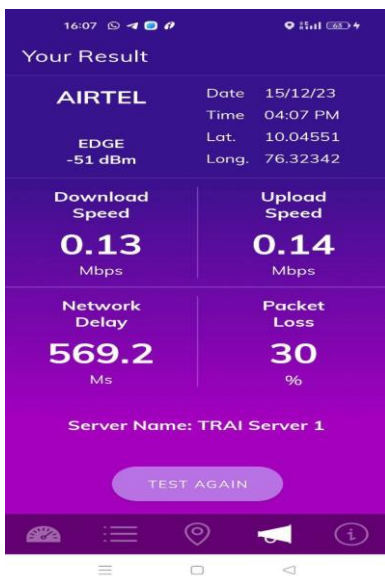
### KSRTC Bus Stand



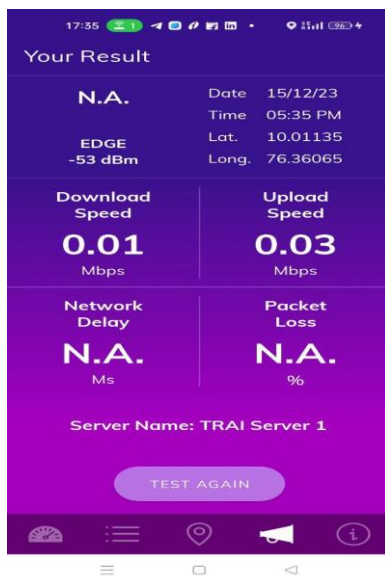
### Kaloor Stadium



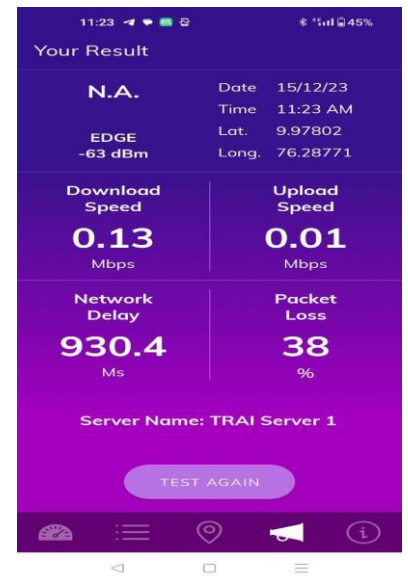
### Cochin University



### Info Park

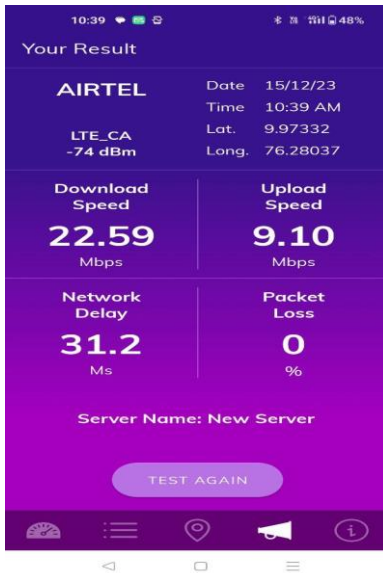


### Hill Palace Museum

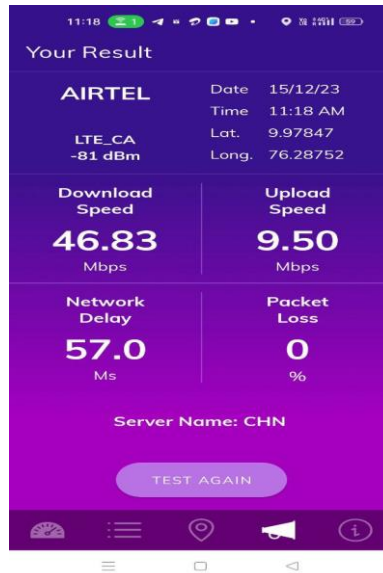


Techology-4G/VoLTE	General Hospital	KSRTC Bus Stand	Kaloor Stadium	Cochin University	Info Park	Hill Palace Museum
Download Speed (Mbps)	22.59	46.83	28.21	23.60	44.66	42.22
Upload Speed (Mbps)	9.10	9.50	11.50	13.45	5.91	8.76
Latency						

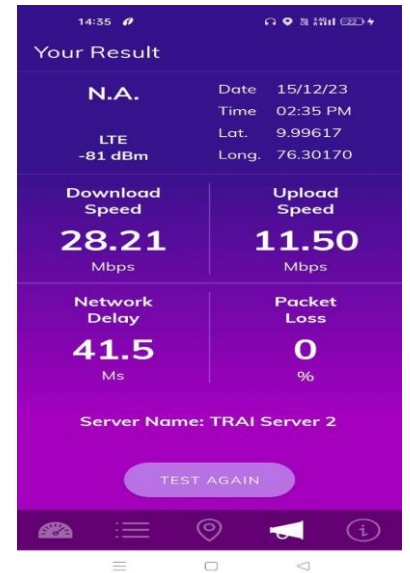
### General Hospital



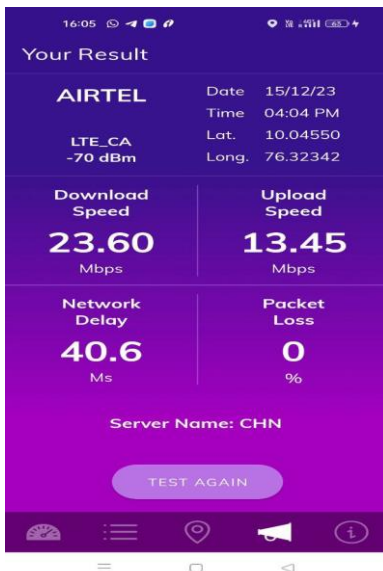
### KSRTC Bus Stand



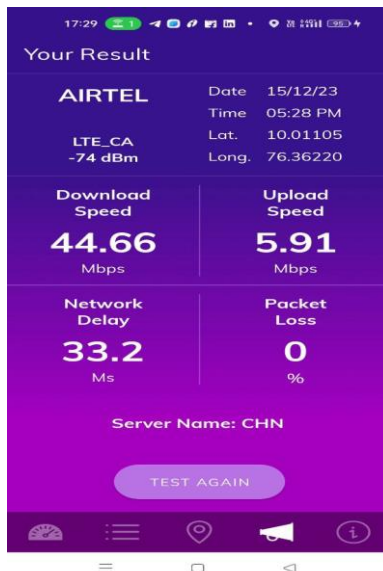
### Kaloor Stadium



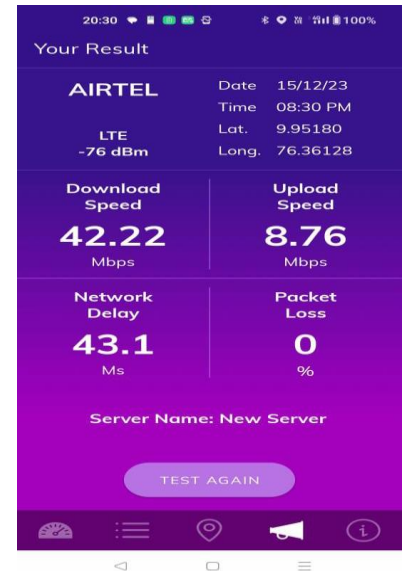
### Cochin University



### Info Park



### Hill Palace Museum

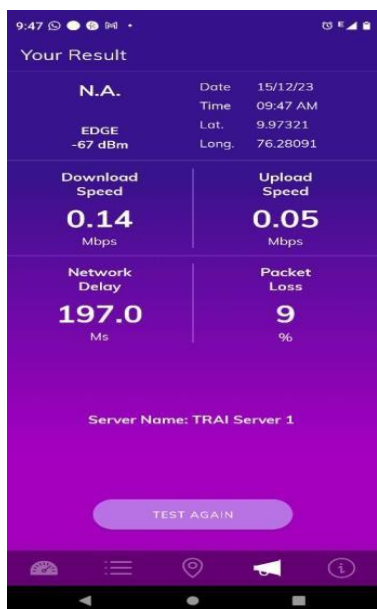




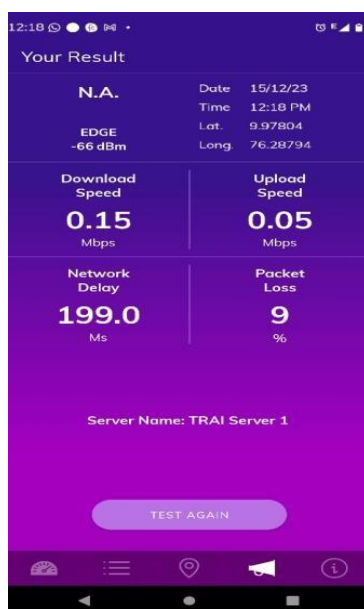
**V. TRAI MySpeed App Test Details-2G**

Techology-2G	General Hospital	KSRTC Bus Stand	Kaloor Stadium	Cochin University	Info Park	Hill Palace Museum
Download Speed (Kbps)	0.14	0.15	0.06	0.07	0.04	0.04
Upload Speed (Kbps)	0.05	0.05	0.08	0.03	0.03	0.06
Latency(ms)	197.0	199.0	222.4	236.3	227.0	223.0

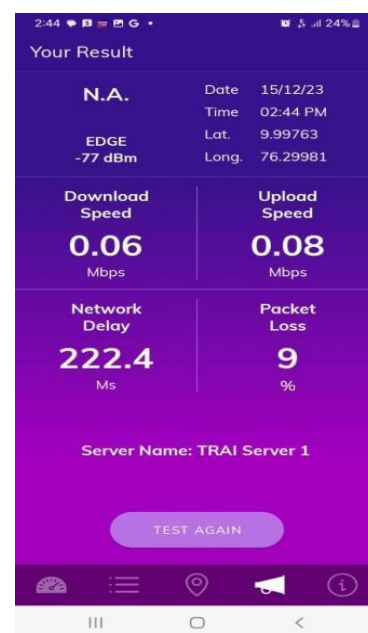
**General Hospital**



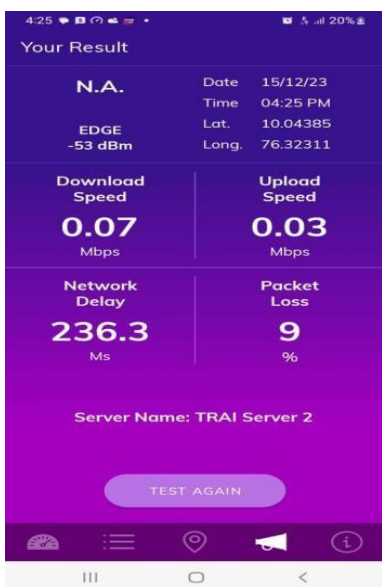
**KSRTC Bus Stand**



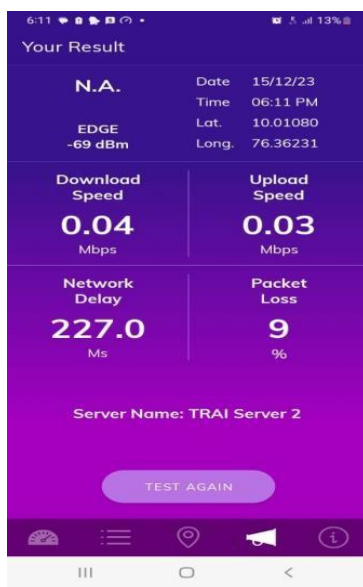
**Kaloor Stadium**



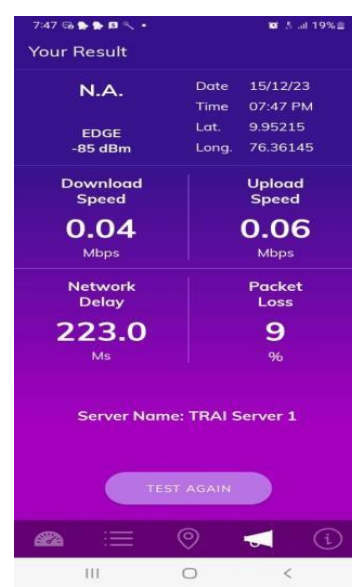
**Cochin University**



**Info Park**



**Hill Palace Museum**



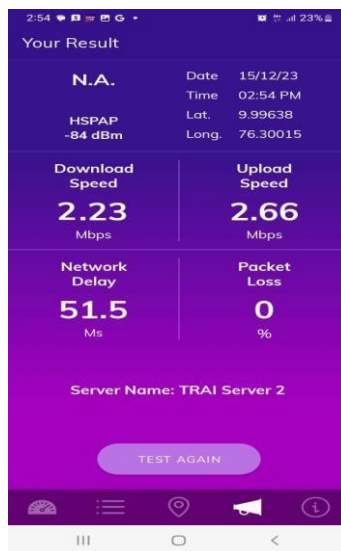
# V. TRAI MySpeed App Test Details-3G/4G

Techology-4G/VoLTE	General Hospital	KSRTC Bus Stand	Kaloor Stadium	Cochin University	Info Park	Hill Palace Museum
Download Speed (Mbps)	1.64	2.23	2.36	1.12	2.27	4.34
Upload Speed (Mbps)	1.39	2.66	1.74	1.93	1.15	1.67
Latency(ms)	66.5	51.5	63.6	52.1	59.6	59.6

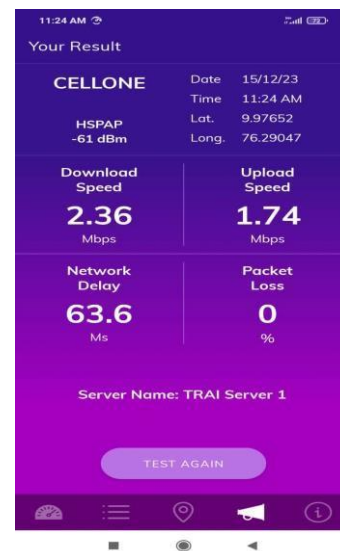
## General Hospital



## KSRTC Bus Stand



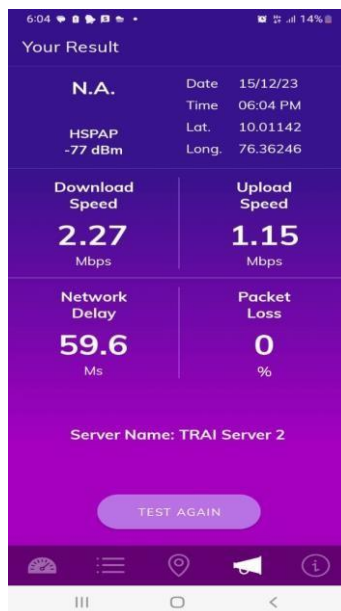
## Kaloor Stadium



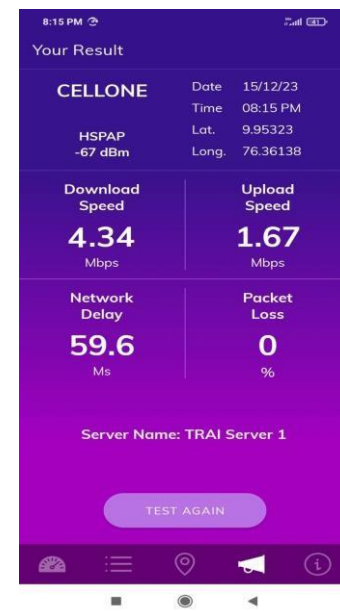
## Cochin University



## Info Park



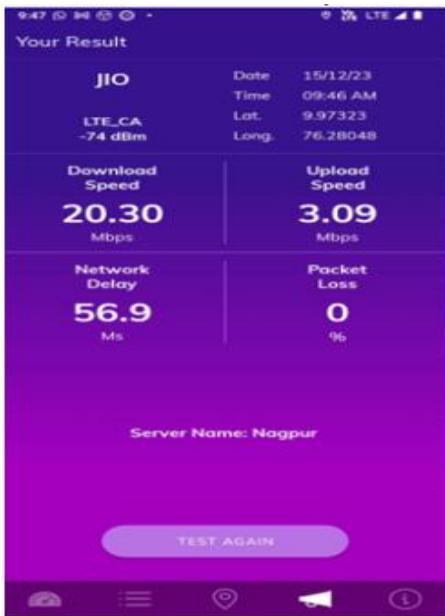
## Hill Palace Museum



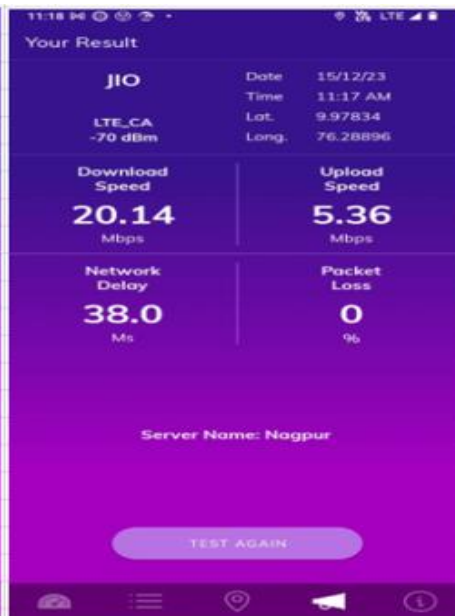
# V. TRAI MySpeed App Test Details-4G

Technology-4G	General Hospital	KSRTC Bus Stand	Kaloor Stadium	Cochin University	Info Park	Hill Palace Museum
Download Speed (Mbps)	20.30	20.14	21.25	44.48	45.29	60.41
Upload Speed (Mbps)	3.09	5.36	17.90	10.07	8.71	9.96
Latency	56.9	38.0	48.3	44.7	42.3	29.2

General Hospital



KSRTC Bus Stand



Kaloor Stadium



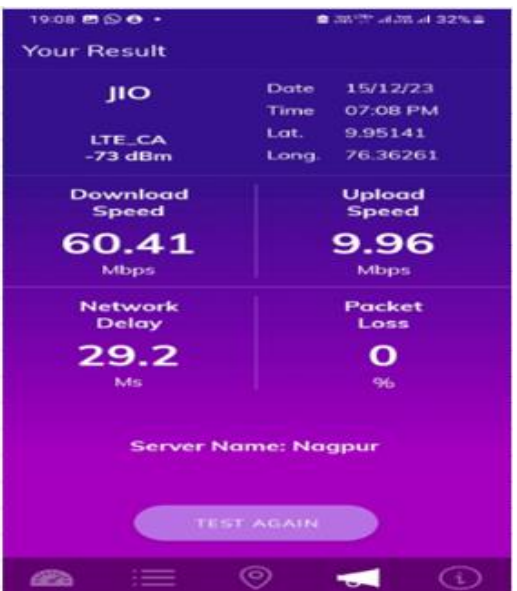
Cochin University



Info Park



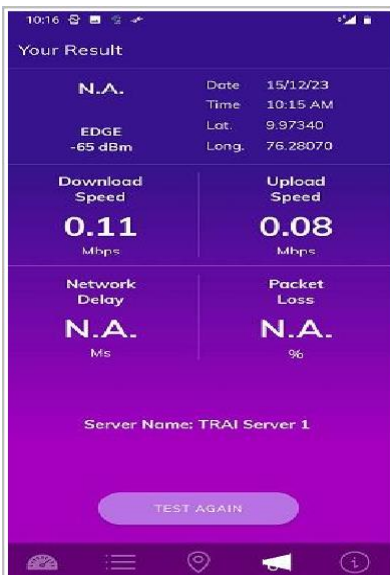
Hill Palace Museum



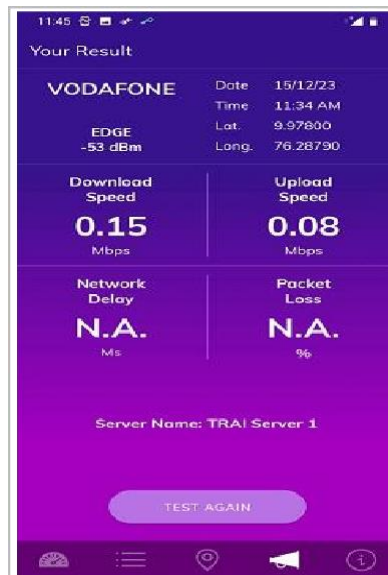


Techology-2G	General Hospital	KSRTC Bus Stand	Kaloor Stadium	Cochin University	Info Park	Hill Palace Museum
Download Speed (Mbps)	0.11	0.15	0.12	0.21	0.14	0.17
Upload Speed (Mbps)	0.08	0.08	0.08	0.09	0.07	0.12
Latency						

### General Hospital



### KSRTC Bus Stand



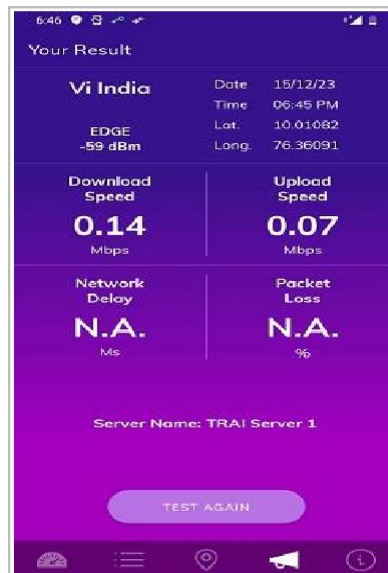
### Kaloor Stadium



### Cochin University



### Info Park



### Hill Palace Museum

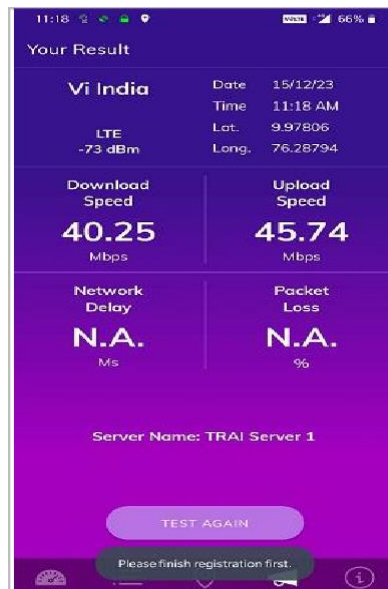


Techology-4G/VoLTE	General Hospital	KSRTC Bus Stand	Kaloor Stadium	Cochin University	Info Park	Hill Palace Museum
Download Speed (Mbps)	56.60	40.25	19.14	44.63	67.95	32.09
Upload Speed (Mbps)	29.70	45.74	46.61	45.76	46.04	42.24
Latency						

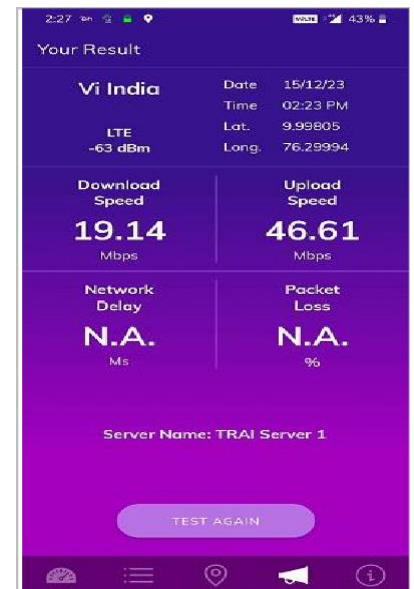
### General Hospital



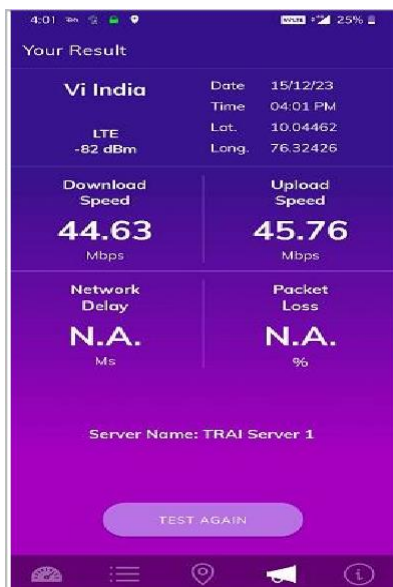
### KSRTC Bus Stand



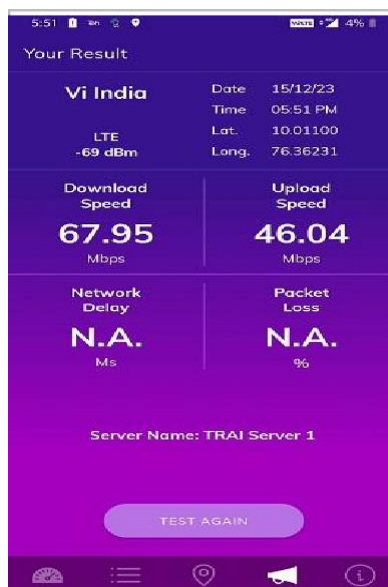
### Kaloor Stadium



### Cochin University



### Info Park



### Hill Palace Museum

