

# Operator Assisted Drive Test Report

For

## BIDAR

06<sup>th</sup> to 08<sup>th</sup> May 2025

**Bidar-Naubad-Humnabad-Mannaekhelli-Bidar**

**06-05-25 (NH ) 112 Kms**

**Bidar-Santhpur-Sangam-Bhalki-Basavakalyan-dhanura-Bidar**

**07-05-2025 (SH ) 192 Kms**

**Bidar City and Surrounding**

**(08-05-2025 - 100 kms)**

**TRAI RO, Bengaluru**

### Key Performance Indicators:

- All TSPs have met the 2% QOS benchmark of Drop Call Rate.
- All TSPs have met the 3% QOS benchmark of Call Block Rate except BSNL 2G.
- All TSPs have not met the Rx Quality except Airtel 2G & JIO 4G.
- All TSPs have met the Mobility HOSR, except VIL 2G & BSNL 4G.
- All TSPs have met CSSR%(Accessibility).

The Operator Assisted Drive Test has been carried out by the Regional Office, Bangalore with the help of Service Providers from 06<sup>th</sup> to 08<sup>th</sup> May 2025. The drive test covered the route of **404 Kms** including NH/SH of **112 Kms** & **6** hotspots. Approximately 310 calls were made for each of the 8 networks: three 2G networks, one 3G network and four 4G networks covering four TSPs.

Overview

Voice  
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Summary

# Overview

Regional Office, TRAI Bengaluru conducted Operator Assisted Drive Test from **06<sup>th</sup> to 08<sup>th</sup> May 2025** covering various locations in **Bidar & Surrounding Region**. The performance of Airtel, BSNL, Vodafone Idea, and JIO were monitored across various technologies (2G, 3G, and 4G/5G). 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 **404 KMs** including **NH/SH of 112 Kms** over a period of 3 days from **06<sup>th</sup> to 8<sup>th</sup> Apl 2025**. Approximately 310 calls were made for each of the 8 networks: three 2G (Lock Mode) networks, One 3G network and four 4G networks covering 4 unique TSPs.

**Data Tests:** Dynamic data test (Test Data on Move) was conducted for **404 KMs** including **NH/SH of 112 Kms** over a period of 3 days for download throughput for 4G/5G technology. Data Tests were performed at 6 static locations; three 2G (Lock mode) networks, One 3G 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, and 4G measurement is done with UE in Free Mode.

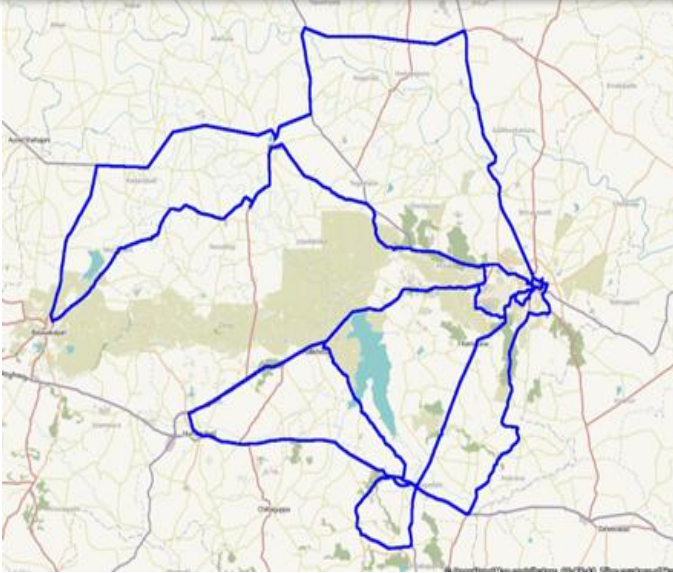
\* 4G KPI's which are calculated from the UE in Free Mode included samples and events of 2G & 3G.

| 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   |

# Overview

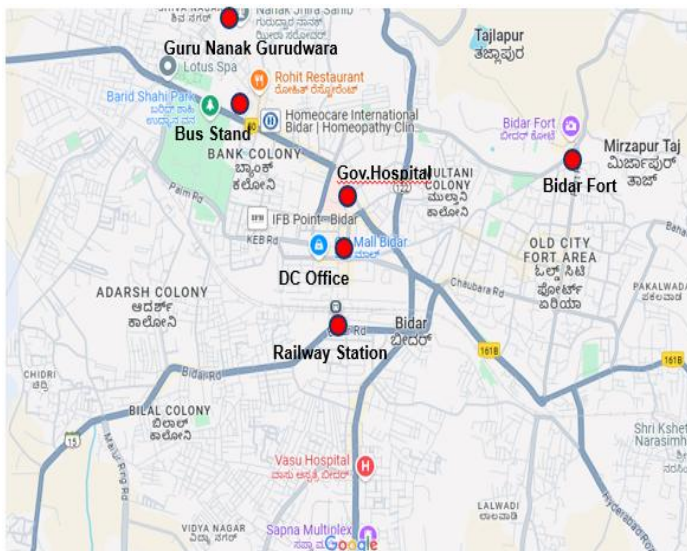
## Voice & Dynamic Data Test (Data Test on Move) Drive Route

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



| Areas covered |                |
|---------------|----------------|
| Bidar         | Janwada        |
| Kohalr        | Santhpur       |
| Andoor        | Kushnoor Thana |
| Hallikhed     | Sangam         |
| Humanabad     | Dongapur       |
| Hudgi         | Bhalki         |
| Mangalgi      | Dadgi          |
| Mannaekhelli  | Halbarga       |
| Bagdal        | Bidar Town     |
| Kamthana      |                |

## Data Service Test- Static Locations



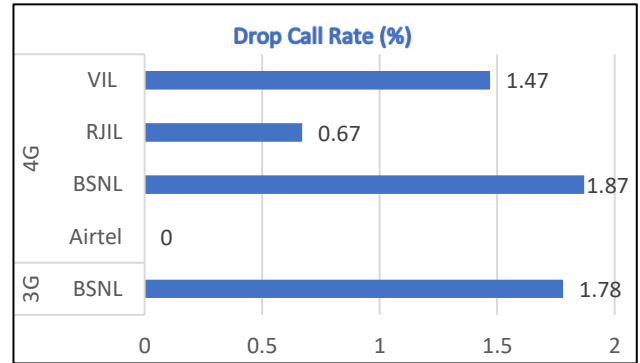
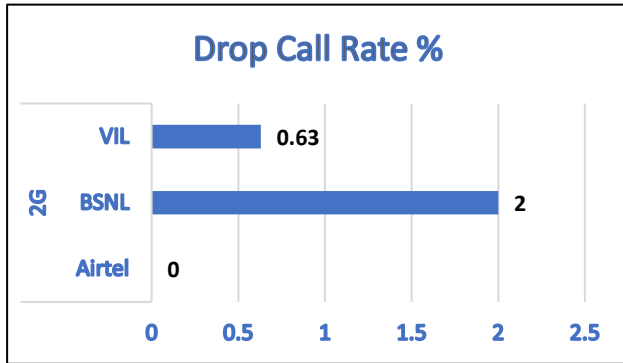
| Location Name        |
|----------------------|
| Railway Station      |
| Bus Stand            |
| DC Office            |
| Gov. Hospital        |
| Fort Bidar           |
| Guru Nanak Gurudwara |

# Voice Calls

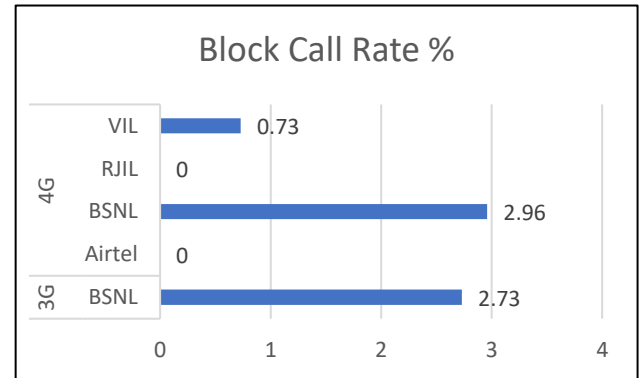
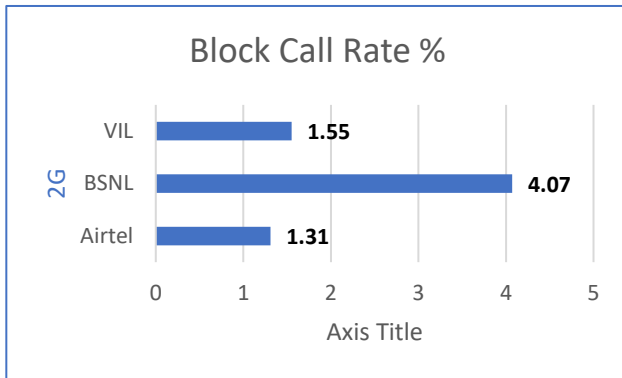
## Key Observations

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

Drop Call Rate (%)



Block Call Rate (%)



| KPIs              | 2G     |      |      | 3G   | 4G     |      |      |      |
|-------------------|--------|------|------|------|--------|------|------|------|
|                   | Airtel | BSNL | VIL  | BSNL | Airtel | BSNL | RJIL | VIL  |
| Drop Call Rate %  | 0      | 2    | 0.63 | 1.78 | 0      | 1.87 | 0.67 | 1.47 |
| Block Call Rate % | 1.31   | 4.07 | 1.55 | 2.73 | 0      | 2.96 | 0    | 0.73 |

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

# Voice Calls

## Key Observations

### Coverage

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

| TSPs      | 2G     |       |       |
|-----------|--------|-------|-------|
|           | Airtel | BSNL  | VIL   |
| Coverage% | 94.75  | 51.50 | 77.72 |

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

| TSPs       | 3G    | 4G     |       |       |       |
|------------|-------|--------|-------|-------|-------|
|            | BSNL  | Airtel | BSNL  | JIO   | VIL   |
| Coverage % | 29.34 | 98.18  | 76.20 | 97.40 | 86.61 |

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

| TSPs                 | 3G   |        | 4G   |     |       |
|----------------------|------|--------|------|-----|-------|
|                      | BSNL | Airtel | BSNL | JIO | VIL   |
| Time Spent on 3G/4G% | 19   | 100    | 96.1 | 100 | 99.49 |

## City Level Summary

# Summary

| Voice Call            | 2G     |       |       |
|-----------------------|--------|-------|-------|
|                       | Airtel | BSNL  | VIL   |
| Call Attempt          | 305    | 417   | 322   |
| Blocked Call Rate (%) | 1.31   | 4.07  | 1.55  |
| CSSR% (Accessibility) | 98.69  | 95.92 | 98.45 |
| Drop Call Rate (%)    | 0      | 2     | 0.63  |
| Rx Quality (%)        | 95.48  | 89.57 | 83.25 |
| Mobility HOSR (%)     | 98.69  | 95.12 | 79.1  |

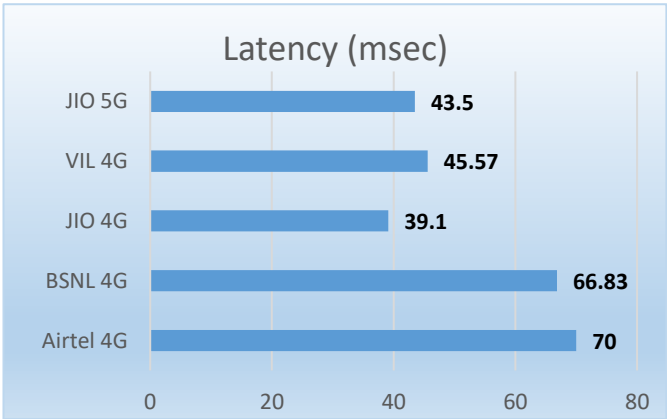
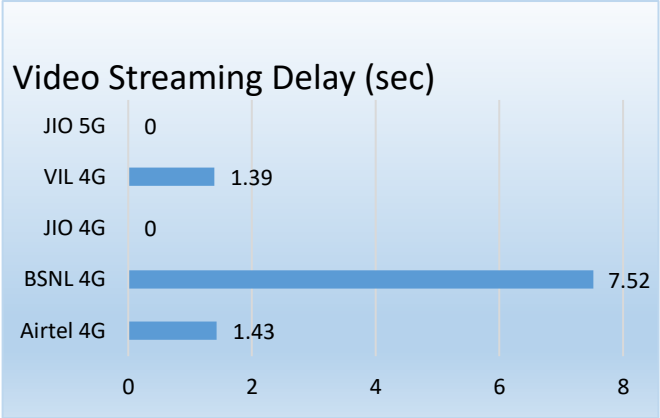
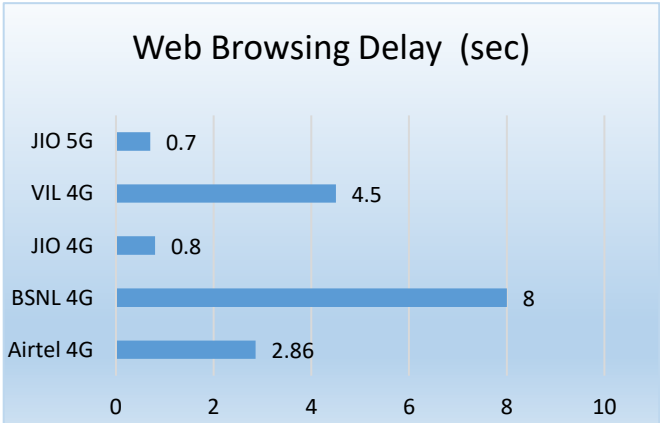
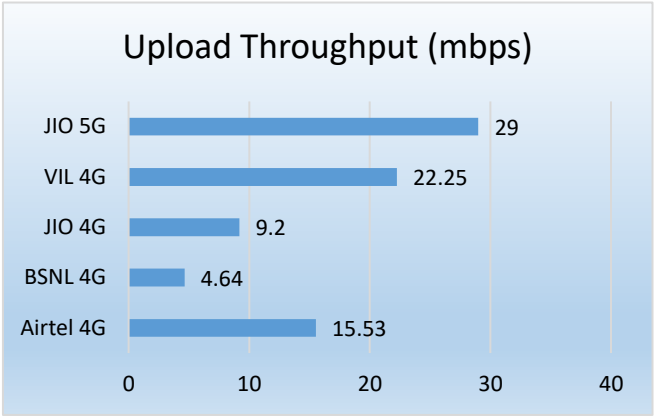
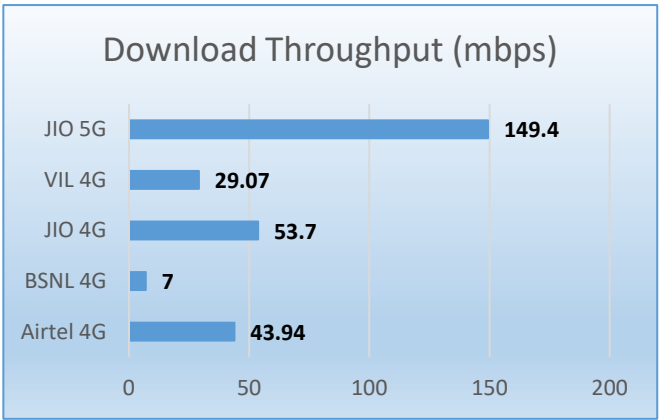
| Voice Call            | 3G/4G   |           |         |        |        |
|-----------------------|---------|-----------|---------|--------|--------|
|                       | BSNL 3G | Airtel 4G | BSNL 4G | JIO 4G | VIL 4G |
| Call Attempt          | 73      | 313       | 337     | 442    | 273    |
| Blocked Call Rate (%) | 2.73    | 0         | 2.96    | 0      | 0.73   |
| CSSR% (Accessibility) | 97.26   | 100       | 97.03   | 100    | 99.27  |
| Drop Call Rate (%)    | 1.78    | 0         | 1.87    | 0.67   | 1.47   |
| Rx Quality (%)        | 65.93   | 94.45     | 68.76   | 99.29  | 90.3   |
| Mobility HOSR (%)     | 98.48   | 99.27     | 93.93   | 98.59  | 96.45  |

# 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 4G/5G



## City Level Summary(contd.)

# Summary

| Data Services Static        |           |         |        |        |        |
|-----------------------------|-----------|---------|--------|--------|--------|
| Data Services Static        | 3G/4G     |         |        |        |        |
|                             | Airtel 4G | BSNL 4G | JIO 4G | VIL 4G | JIO 5G |
| Download Throughput (mbps)  | 43.94     | 7       | 53.7   | 29.07  | 149.4  |
| Upload Throughput (mbps)    | 15.53     | 4.64    | 9.2    | 22.25  | 29     |
| Browsing (sec)              | 2.86      | 8       | 0.8    | 4.5    | 0.7    |
| Video Streaming Delay (sec) | 1.43      | 7.52    | 0      | 1.39   | 0      |
| Latency (msec)              | 70        | 66.83   | 39.1   | 45.57  | 43.5   |

| Data Services Dynamic      |         |           |         |        |        |
|----------------------------|---------|-----------|---------|--------|--------|
| Data Services Dynamic      | 3G/4G   |           |         |        |        |
|                            | BSNL 3G | Airtel 4G | BSNL 4G | JIO 4G | VIL 4G |
| Download Throughput (mbps) | 1.98    | 38.43     | 5.11    | 7.92   | 9.29   |
| Upload Throughput (mbps)   | 1.5     | 11.9      | 5.01    | 2.78   | 0      |



# Summary

| Data Services Static        |            |              |        |           |           |
|-----------------------------|------------|--------------|--------|-----------|-----------|
| KSRTC Bus stand(LOC 1)      | 4G/5G      |              |        |           |           |
|                             | BSNL<br>4G | Airtel<br>4G | JIO 4G | VIL<br>4G | JIO<br>5G |
| Download Throughput (mbps)  | 5.30       | 39.1         | 79.8   | 34.62     | 172       |
| Upload Throughput (mbps)    | 7.82       | 13.5         | 7.8    | 32.29     | 25.1      |
| Browsing (sec)              | 1.80       | 3.99         | 0.72   | 9.24      | 0.7       |
| Video Streaming Delay (sec) | 7.53       | 1.49         | 0      | 0.8       | 0         |
| Latency (msec)              | 78.7       | 72           | 31.2   | 39        | 54.9      |

| Data Services Static         |            |              |        |           |           |
|------------------------------|------------|--------------|--------|-----------|-----------|
| Railway Station Bidar(LOC 2) | 4G/5G      |              |        |           |           |
|                              | BSNL<br>4G | Airtel<br>4G | JIO 4G | VIL<br>4G | JIO<br>5G |
| Download Throughput (mbps)   | 6.12       | 54.43        | 44.6   | 20.75     | 138       |
| Upload Throughput (mbps)     | 3.44       | 6.07         | 5      | 19.78     | 18.8      |
| Browsing (sec)               | 8.80       | 3.73         | 0.82   | 2.69      | 0.7       |
| Video Streaming Delay (sec)  | 8.59       | 1.41         | 0      | 0.79      | 0         |
| Latency (msec)               | 53.3       | 77           | 37.1   | 38        | 42.7      |

| Data Services Static        |            |              |        |           |           |
|-----------------------------|------------|--------------|--------|-----------|-----------|
| Govt Hospital Bidar(LOC 3)  | 4G/5G      |              |        |           |           |
|                             | BSNL<br>4G | Airtel<br>4G | JIO 4G | VIL<br>4G | JIO<br>5G |
| Download Throughput (mbps)  | 12.94      | 35.5         | 66.1   | 21.84     | 160.2     |
| Upload Throughput (mbps)    | 3.62       | 16.24        | 20.8   | 31.69     | 48        |
| Browsing (sec)              | 7.60       | 2.69         | 0.9    | 3.03      | 0.8       |
| Video Streaming Delay (sec) | 7.09       | 1.27         | 0      | 0.78      | 0         |
| Latency (msec)              | 72.9       | 70           | 53.7   | 40.6      | 39.5      |

# Summary

| Data Services Static        |            |              |        |           |           |
|-----------------------------|------------|--------------|--------|-----------|-----------|
| DC officel Bidar(LOC 4)     | 4G/5G      |              |        |           |           |
|                             | BSNL<br>4G | Airtel<br>4G | JIO 4G | VIL<br>4G | JIO<br>5G |
| Download Throughput (mbps)  | 7.34       | 30.97        | 43.4   | 27.81     | 124.4     |
| Upload Throughput (mbps)    | 5.12       | 22.52        | 8.42   | 15.18     | 29.2      |
| Browsing (sec)              | 7.60       | 2.52         | 0.7    | 4.77      | 0.6       |
| Video Streaming Delay (sec) | 6.29       | 1.93         | 0      | 2.55      | 0         |
| Latency (msec)              | 75.2       | 66           | 36.8   | 54        | 40.5      |

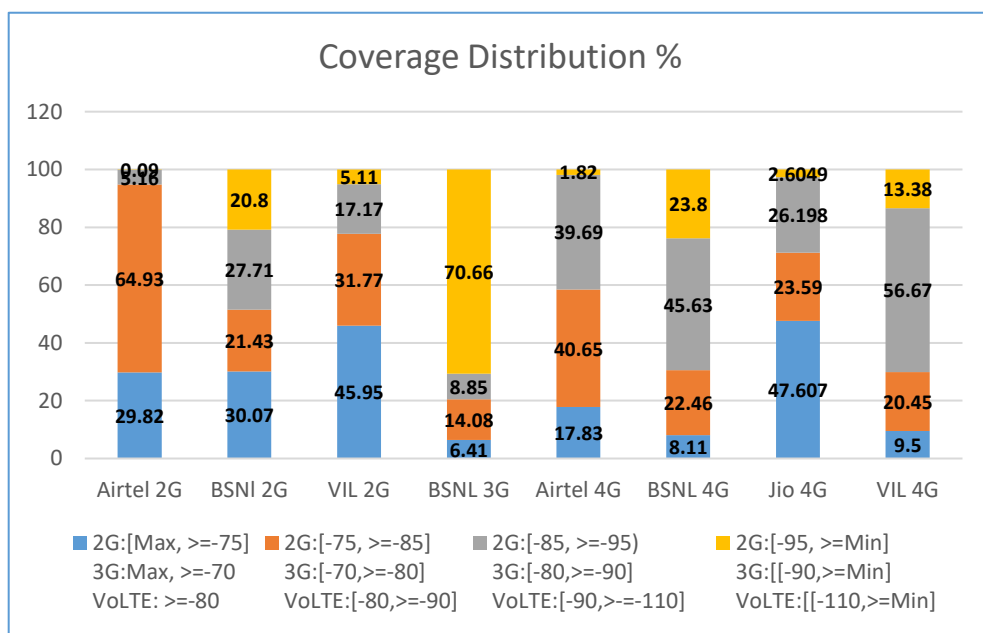
| Data Services Static        |            |              |        |           |           |
|-----------------------------|------------|--------------|--------|-----------|-----------|
| Fort Bidar(LOC 5)           | 4G/5G      |              |        |           |           |
|                             | BSNL<br>4G | Airtel<br>4G | JIO 4G | VIL<br>4G | JIO<br>5G |
| Download Throughput (mbps)  | 5.95       | 21.46        | 38     | 14.05     | 120.4     |
| Upload Throughput (mbps)    | 3.4        | 16.2         | 8.44   | 11.19     | 25.3      |
| Browsing (sec)              | 7.60       | 2.64         | 0.7    | 4.41      | 0.7       |
| Video Streaming Delay (sec) | 7          | 1.44         | 0      | 2.57      | 0         |
| Latency (msec)              | 62.7       | 69.4         | 35.5   | 61        | 47.2      |

| Data Services Static        |            |              |        |           |           |
|-----------------------------|------------|--------------|--------|-----------|-----------|
| Gurudwara Bidar(LOC 6)      | 4G/5G      |              |        |           |           |
|                             | BSNL<br>4G | Airtel<br>4G | JIO 4G | VIL<br>4G | JIO<br>5G |
| Download Throughput (mbps)  | 4.33       | 82.23        | 50.6   | 55.34     | 181.6     |
| Upload Throughput (mbps)    | 4.42       | 18.65        | 4.6    | 23.36     | 27.4      |
| Browsing (sec)              | 14.60      | 1.61         | 0.8    | 2.86      | 0.6       |
| Video Streaming Delay (sec) | 8.58       | 1.04         | 0      | 0.85      | 0         |
| Latency (msec)              | 58.2       | 66.4         | 40.1   | 40.8      | 36.4      |

## 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.

| Coverage  |                 |
|-----------|-----------------|
| TSP       | Coverage Rate % |
| Airtel 2G | <b>94.75</b>    |
| BSNI 2G   | <b>51.50</b>    |
| VIL 2G    | <b>77.72</b>    |
| BSNI 3G   | <b>29.34</b>    |
| Airtel 4G | <b>98.18</b>    |
| BSNL 4G   | <b>76.20</b>    |
| Jio 4G    | <b>97.40</b>    |
| VIL 4G    | <b>86.61</b>    |

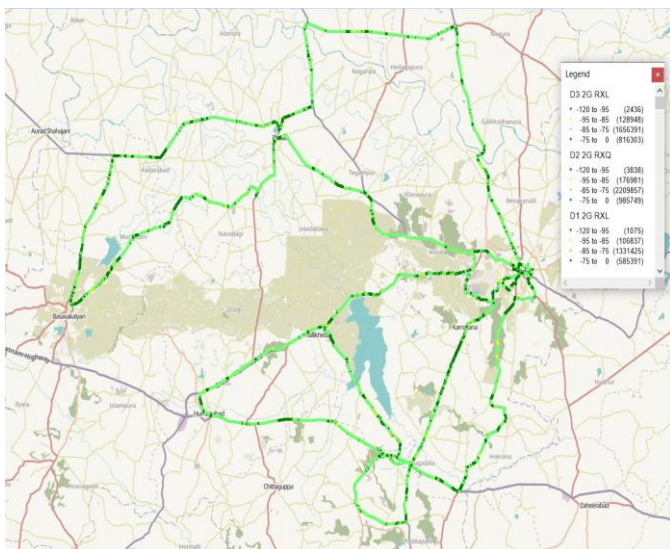


# I. Coverage Details

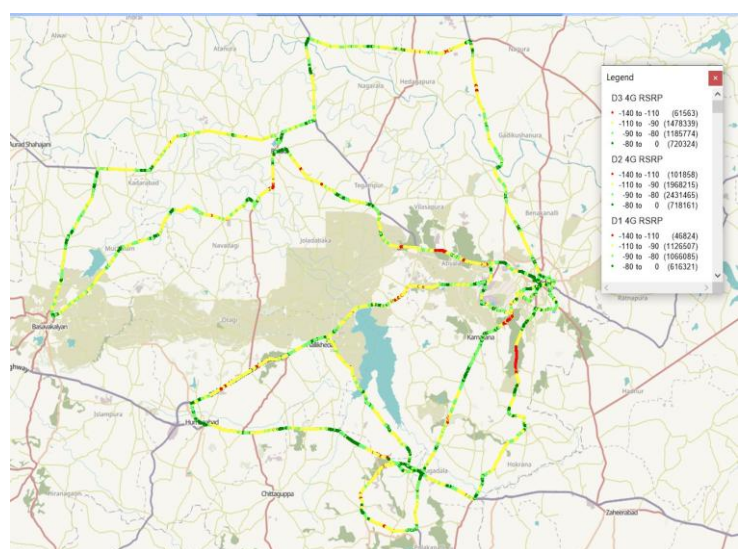
## AIRTEL

| Technology | Coverage Rate % |
|------------|-----------------|
| 2G         | 94.75           |
| 4G         | 98.18           |

### 2G



### 4G



| 2G              |                |               |
|-----------------|----------------|---------------|
| Overall RxLevel | # Samples      | % PDF         |
| [Max, >=-75]    | 2387443        | 29.82         |
| [-75, >=-85]    | 5197673        | 64.93         |
| [-85, >=-95]    | 412766         | 5.16          |
| [-95, >=Min)    | 7349           | 0.09          |
| <b>Total</b>    | <b>8005231</b> | <b>100.00</b> |

| 4G/VoLTE      |                 |               |
|---------------|-----------------|---------------|
| Overall RSRP  | # Samples       | % PDF         |
| [Max, >=-80]  | 2054806         | 17.83         |
| [-80, >=-90]  | 4683324         | 40.65         |
| [-90, >=-110] | 4573061         | 39.69         |
| [-110, >=Min) | 210245          | 1.82          |
| <b>Total</b>  | <b>11521436</b> | <b>100.00</b> |

# I. Coverage Details

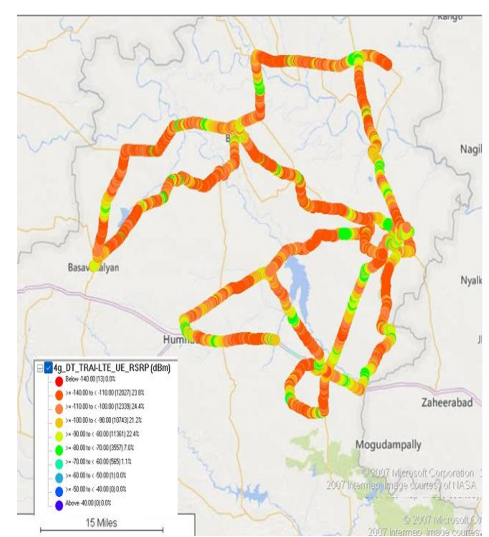
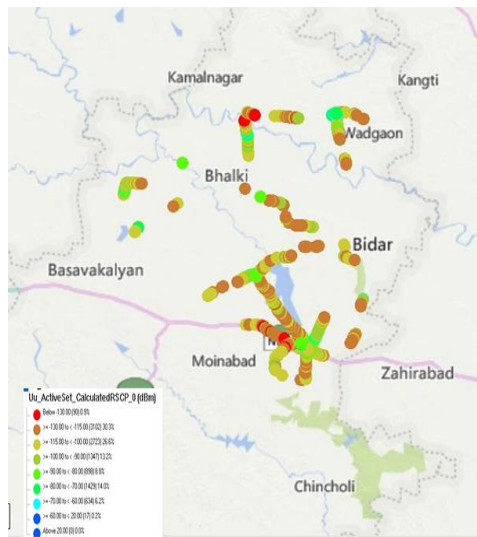
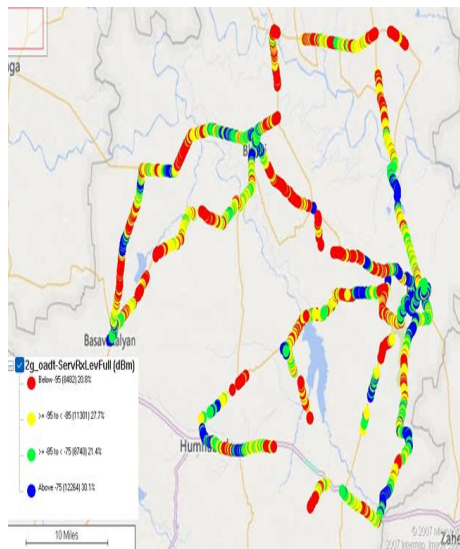
## BSNL

| Technology | Coverage Rate % |
|------------|-----------------|
| 2G         | 51.5            |
| 3G         | 29.34           |
| 4G         | 76.2            |

### 2G

### 3G

### 4G



#### 2G

| Overall RxLevel | # Samples    | % PDF           |
|-----------------|--------------|-----------------|
| [Max, >=-75]    | 12264        | 30.07 %         |
| [-75, >=-85)    | 8740         | 21.43 %         |
| [-85, >=-95)    | 11301        | 27.71 %         |
| [-95, >=Min]    | 8482         | 20.80 %         |
| <b>Total</b>    | <b>40787</b> | <b>100.00 %</b> |

#### 3G

| Overall RSCP | # Samples    | % PDF        |
|--------------|--------------|--------------|
| [Max, >=-70] | 651          | 6.41 %       |
| [-70, >=-80) | 1429         | 14.08 %      |
| [-80, >=-90) | 898          | 8.85 %       |
| [-90, >=Min] | 7172         | 70.66 %      |
| <b>Total</b> | <b>10150</b> | <b>100 %</b> |

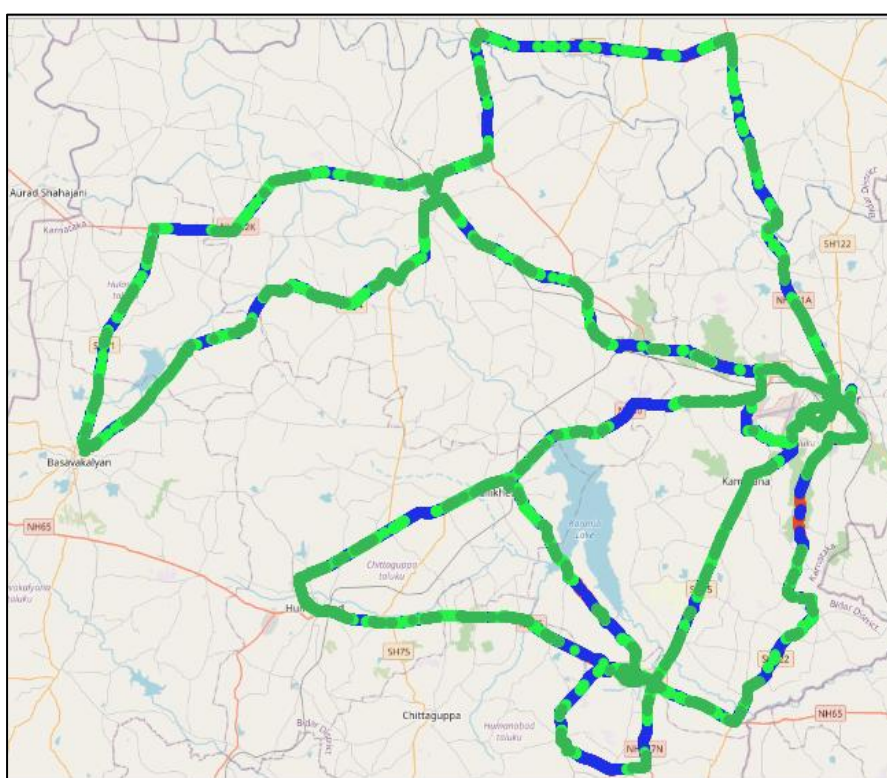
#### 4G/VoLTE

| Overall RSRP  | # Samples    | % PDF           |
|---------------|--------------|-----------------|
| [Max, >=-80]  | 4103         | 8.11 %          |
| [-80, >=-90)  | 11361        | 22.46 %         |
| [-90, >=-110) | 23082        | 45.63 %         |
| [-110, >=Min] | 12040        | 23.80 %         |
| <b>Total</b>  | <b>50586</b> | <b>100.00 %</b> |



**JIO**

| Technology | Coverage Rate |
|------------|---------------|
| 4G         | 97.4          |



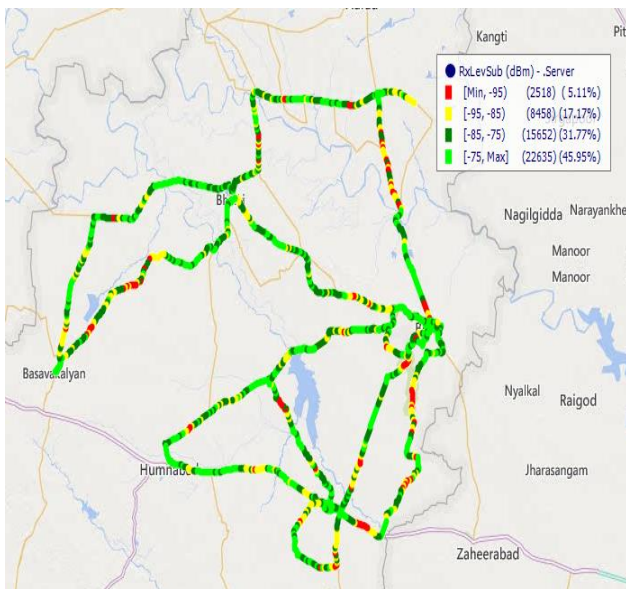
| 4G                  |           |        |
|---------------------|-----------|--------|
| Overall RSRP in dBm | # Samples | % PDF  |
| [Max, >=-80]        | 30100     | 47.607 |
| [-80, >=-90)        | 14915     | 23.59  |
| [-90, >=-110)       | 16564     | 26.198 |
| [-110, >=Min)       | 1647      | 2.6049 |
| Total               | 63226     | 100    |

## I. Coverage Details

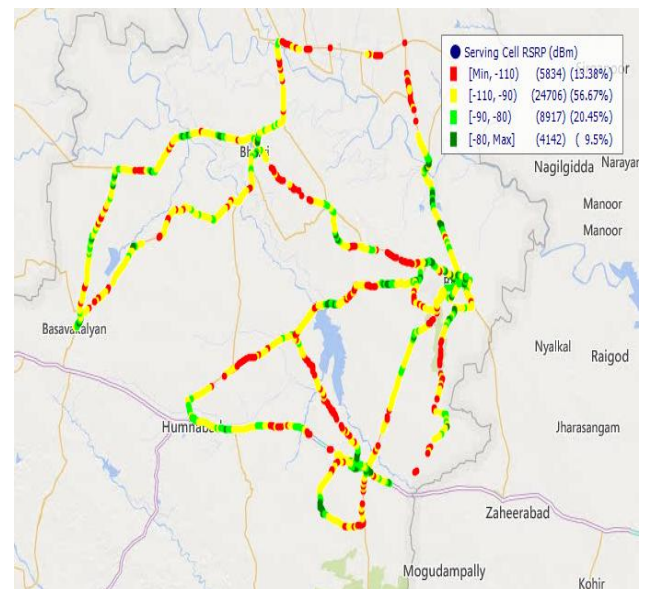
### VIL

| Technology | Coverage Rate % |
|------------|-----------------|
| 2G         | 77.72           |
| 4G         | 86.61           |

### 2G



### 4G



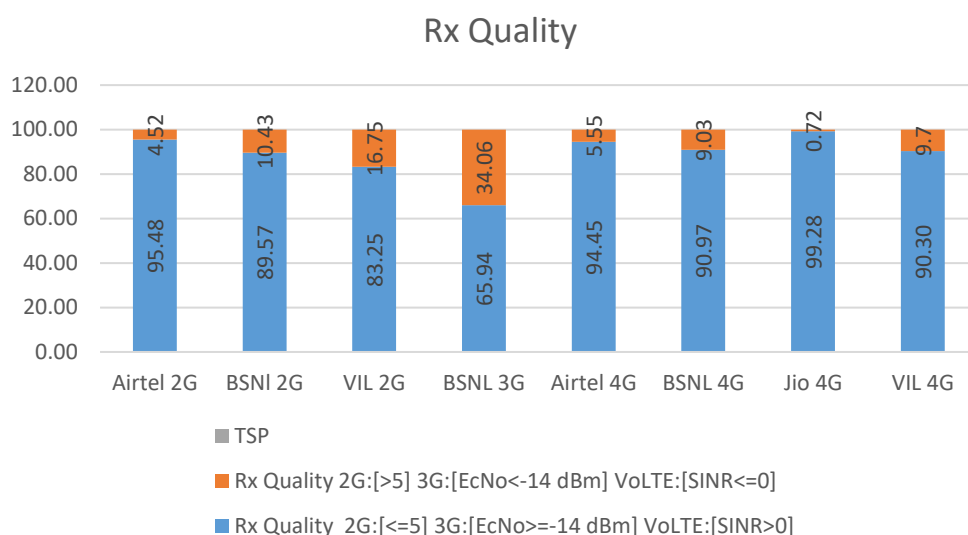
| 2G               |              |            |
|------------------|--------------|------------|
| Overall Rx Level | # Samples    | % PDF      |
| [Max, >=-75]     | 22635        | 45.95      |
| [-75, >=-85)     | 15652        | 31.77      |
| [-85, >=-95)     | 8458         | 17.17      |
| [-95, >=Min)     | 2518         | 5.11       |
| <b>Total</b>     | <b>49263</b> | <b>100</b> |

| 4G            |              |            |
|---------------|--------------|------------|
| Overall RSRP  | # Samples    | % PDF      |
| [Max, >=-80]  | 4142         | 9.50       |
| [-80, >=-90)  | 8917         | 20.45      |
| [-90, >=-110) | 24706        | 56.67      |
| [-110, >=Min) | 5834         | 13.38      |
| <b>Total</b>  | <b>43599</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 | 95.48      |
| BSNI 2G   | 89.57      |
| VIL 2G    | 83.25      |
| BSNL 3G   | 65.94      |
| Airtel 4G | 94.45      |
| BSNL 4G   | 90.97      |
| Jio 4G    | 99.28      |
| VIL 4G    | 90.30      |



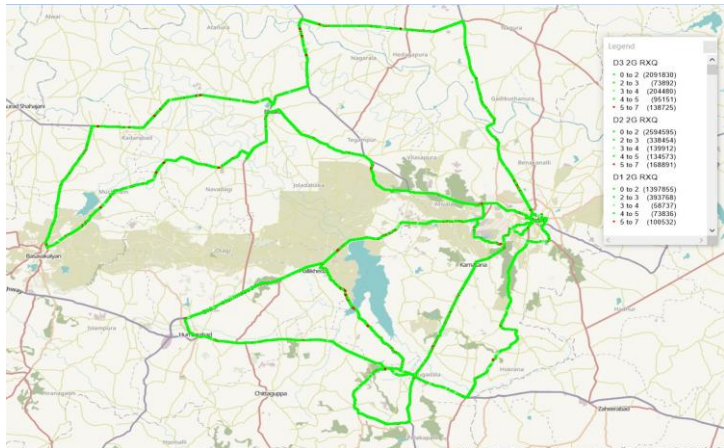


## II. Quality Details

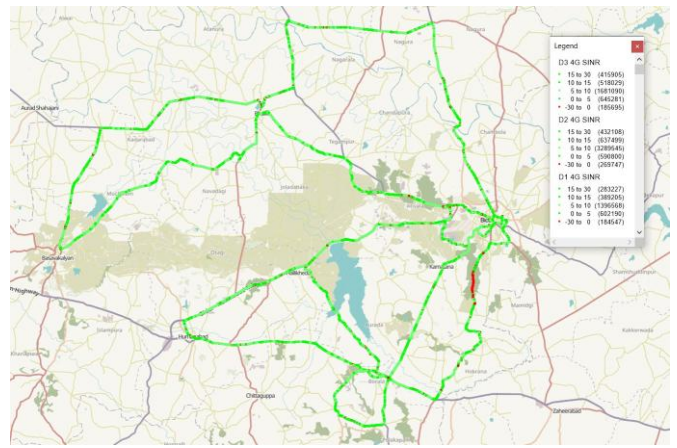
### Airtel

| Technology | Rx Quality % |
|------------|--------------|
| 2G         | 95.48        |
| 4G         | 94.45        |

#### 2G



#### 4G



| Total              |                |            |
|--------------------|----------------|------------|
| Overall Rx Quality | # Samples      | % PDF      |
| (Min, <=2)         | 6072253        | 75.85      |
| (2, <=3)           | 843395         | 10.54      |
| (3, <=4)           | 429839         | 5.37       |
| (4, <=5)           | 297834         | 3.72       |
| (5, <=Max)         | 361910         | 4.52       |
| <b>Total</b>       | <b>8005231</b> | <b>100</b> |

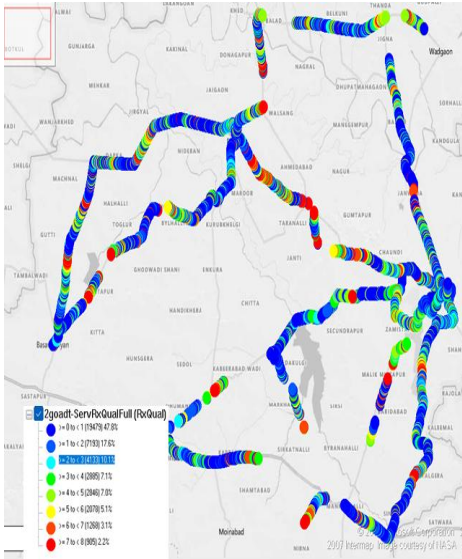
| Overall SINR | # Samples       | % PDF         |
|--------------|-----------------|---------------|
| (Min, <=-6)  | 639989          | 5.55          |
| (0, <=5)     | 1838271         | 15.96         |
| (5, <=10)    | 6367203         | 55.26         |
| (10, <=15)   | 1544733         | 13.41         |
| (15, <=Max)  | 1131240         | 9.82          |
| <b>Total</b> | <b>11521436</b> | <b>100.00</b> |

## II. Quality Details

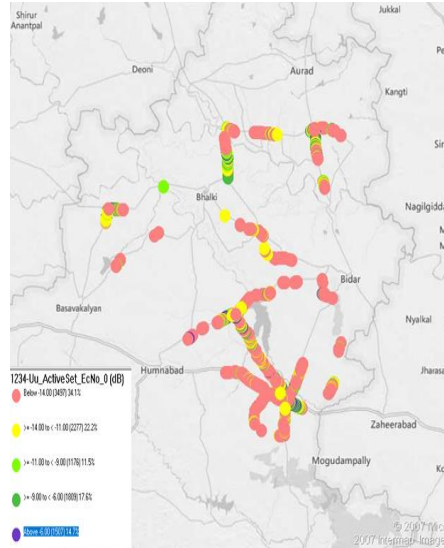
### BSNL

| Technology | Rx Quality % |
|------------|--------------|
| 2G         | 89.57        |
| 3G         | 65.94        |
| 4G         | 90.97        |

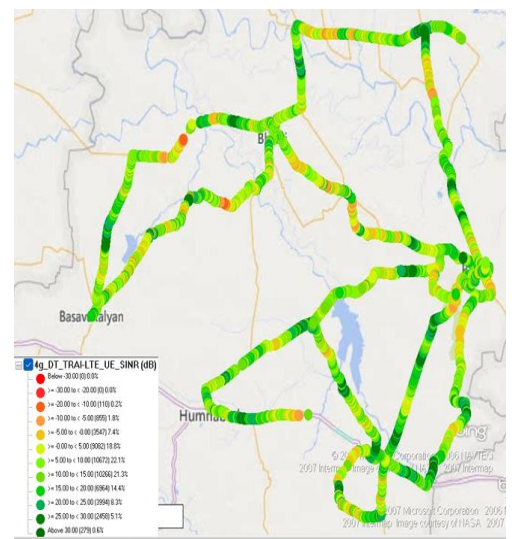
### 2G



### 3G



### 4G



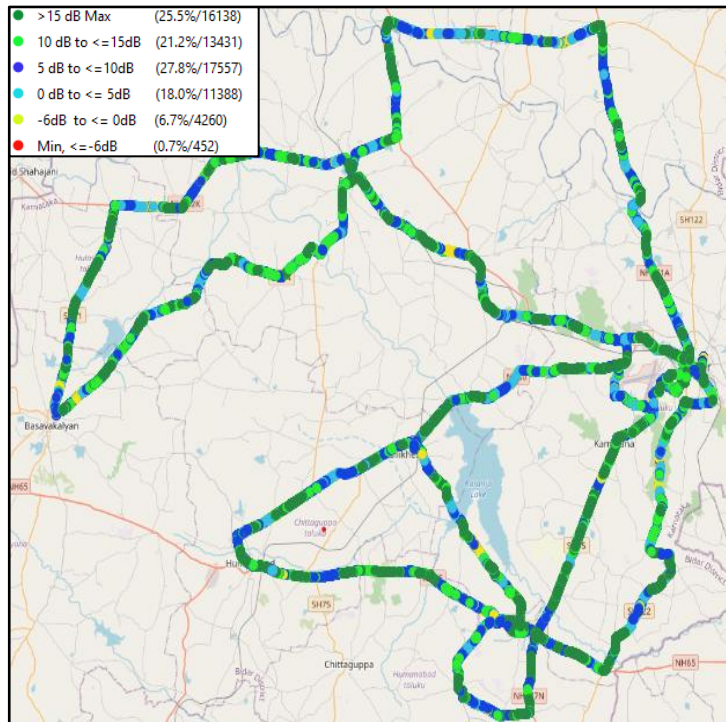
| Overall Rx Quality | # Samples    | % PDF           |
|--------------------|--------------|-----------------|
| (Min, <=2)         | 26672        | 65.39 %         |
| (2, <=3)           | 4133         | 10.13 %         |
| (3, <=4)           | 2885         | 7.07 %          |
| (4, <=5)           | 2846         | 6.98 %          |
| (5, <=Max)         | 4251         | 10.42 %         |
| <b>Total</b>       | <b>40787</b> | <b>100.00 %</b> |

| Overall EcNo  | # Samples    | % PDF           |
|---------------|--------------|-----------------|
| (Max, <=-6)   | 1507         | 14.68 %         |
| (-6, <=-9)    | 1809         | 17.62 %         |
| (-9, <=-11)   | 1176         | 11.46 %         |
| (-11, <=-14)  | 2277         | 22.18 %         |
| (-14, <= Min) | 3497         | 34.06 %         |
| <b>Total</b>  | <b>10266</b> | <b>100.00 %</b> |

| Overall SINR | # Samples    | % PDF           |
|--------------|--------------|-----------------|
| (Min, <=0)   | 4539         | 9.03 %          |
| (0, <=5)     | 9082         | 18.07 %         |
| (5, <=10)    | 10672        | 21.24 %         |
| (10, <=15)   | 10266        | 20.43 %         |
| (15, <=Max)  | 15695        | 31.23 %         |
| <b>Total</b> | <b>50254</b> | <b>100.00 %</b> |

### JIO

| Technology | Rx Quality (%) |
|------------|----------------|
| 4G/4G      | 99.28          |



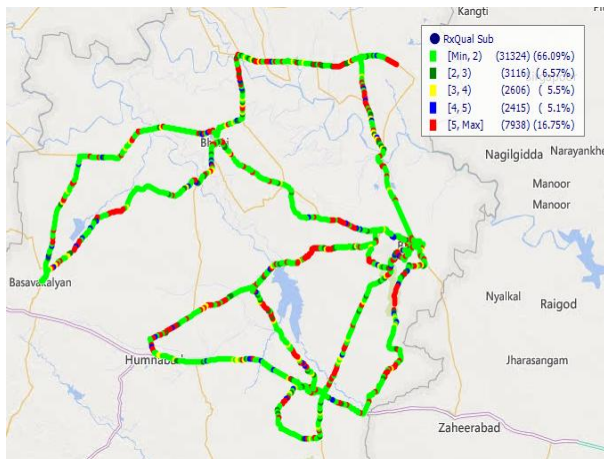
| SINR         |           |        |
|--------------|-----------|--------|
| Overall SINR | # Samples | % PDF  |
| (15, <=Max)  | 16138     | 25.524 |
| (10, <=15)   | 13431     | 21.243 |
| (5, <=10)    | 17557     | 27.769 |
| (0, <=5)     | 11388     | 18.012 |
| (-6, <=0)    | 4260      | 6.7377 |
| (Min, <=-6)  | 452       | 0.7149 |
| Total        | 63226     | 100    |

## II. Quality Details

### VIL

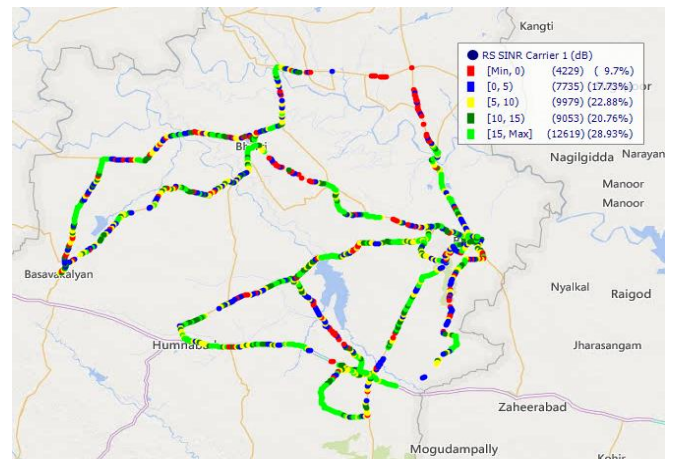
| Technology | Rx Quality % |
|------------|--------------|
| 2G         | <b>83.25</b> |
| 4G         | <b>90.30</b> |

### 2G



| 2G                 |              |            |
|--------------------|--------------|------------|
| Overall Rx Quality | # Samples    | % PDF      |
| (Min, <=2)         | 31324        | 66.09      |
| (2, <=3)           | 3116         | 6.57       |
| (3, <=4)           | 2606         | 5.50       |
| (4, <=5)           | 2415         | 5.10       |
| (5, <=Max)         | 7938         | 16.75      |
| <b>Total</b>       | <b>47399</b> | <b>100</b> |

### 4G

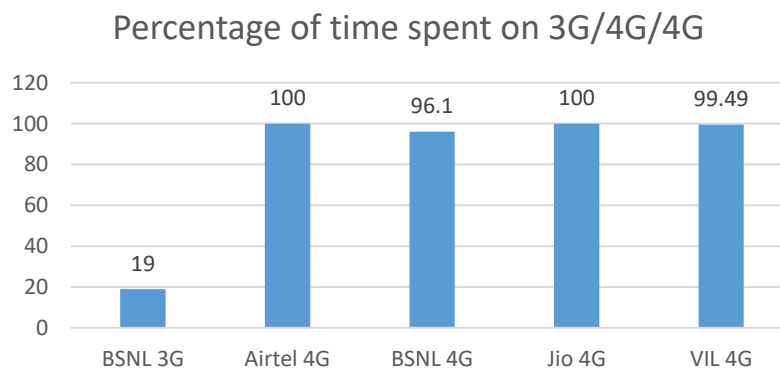


| 4G           |              |            |
|--------------|--------------|------------|
| Overall SINR | # Samples    | % PDF      |
| (Min, <=0)   | 4229         | 9.70       |
| (0, <=5)     | 7735         | 17.73      |
| (5, <=10)    | 9979         | 22.88      |
| (10, <=15)   | 9053         | 20.76      |
| (15, <=Max)  | 12619        | 28.93      |
| <b>Total</b> | <b>43615</b> | <b>100</b> |



### III. Technology Details

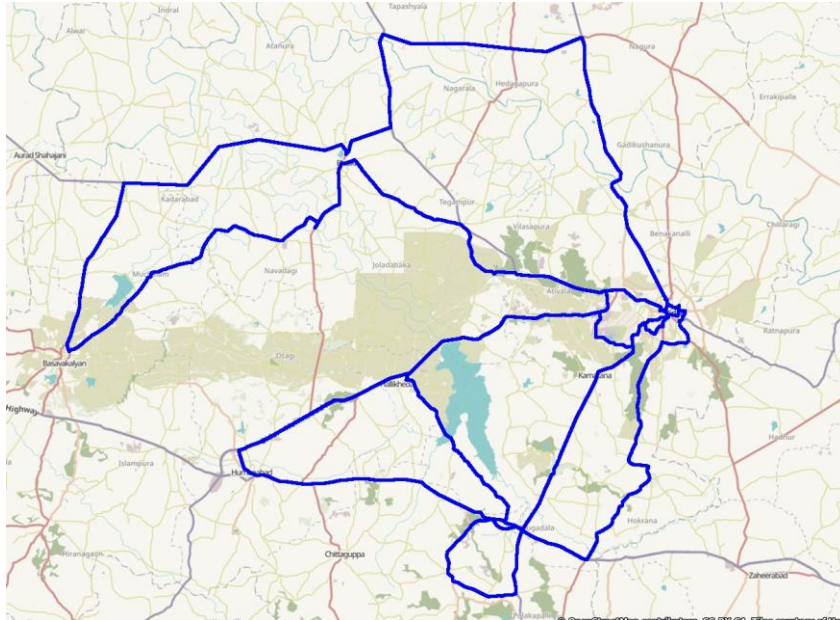
| Technology Details |                      |
|--------------------|----------------------|
| TSP                | %Time spent on 3G/4G |
| BSNL 3G            | 19                   |
| Airtel             | 100                  |
| BSNL 4G            | 96.1                 |
| Jio                | 100                  |
| VIL                | 99.49                |



### III. Technology Details

#### Airtel

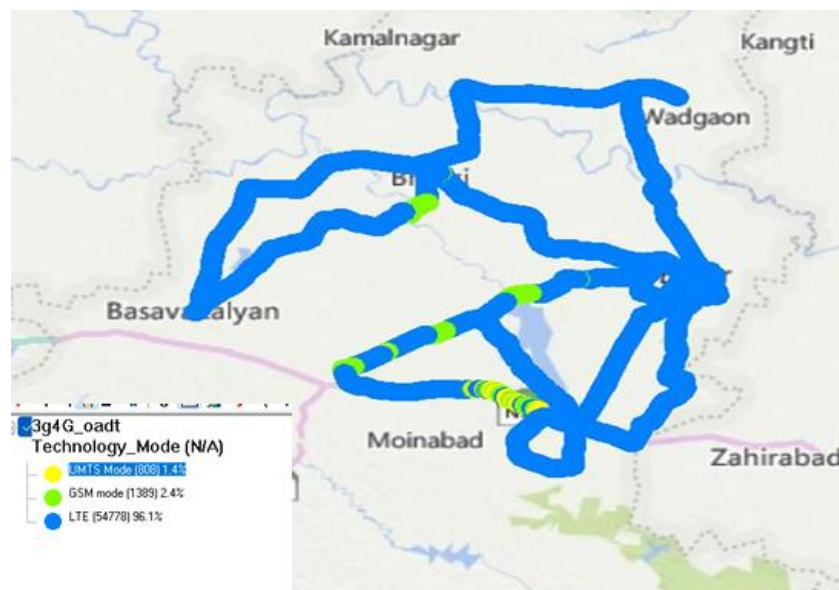
| Technology | Time Spent % |
|------------|--------------|
| 4G         | 100          |



### III. Technology Details

#### BSNL

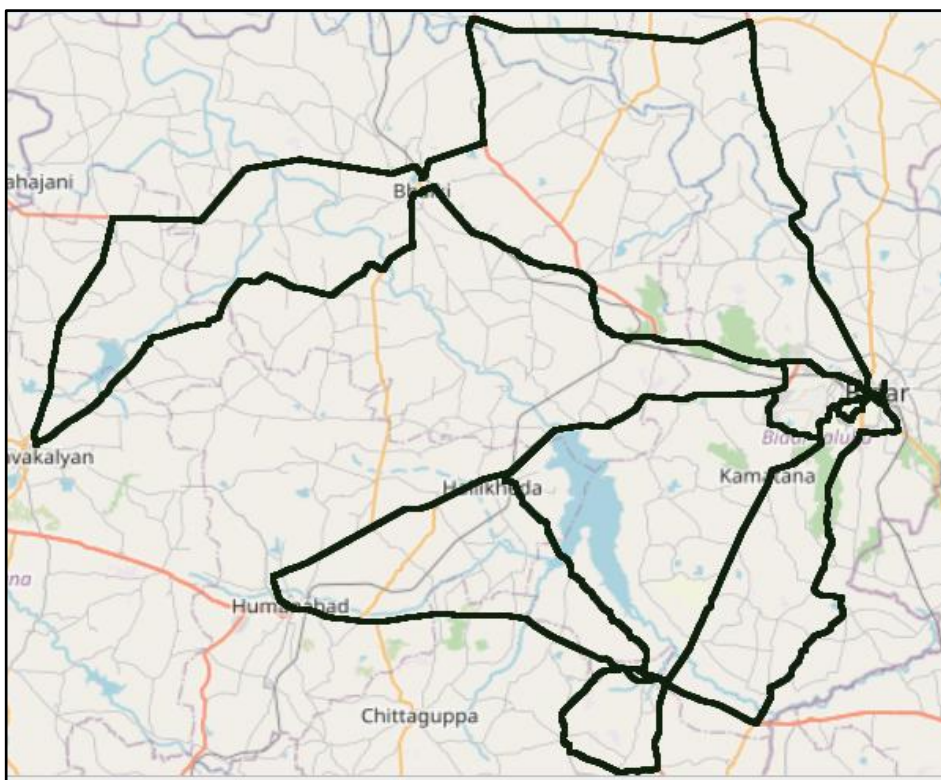
| Technology | Time Spent (%) |
|------------|----------------|
| 3G         | 19%            |
| 4G         | 96.10%         |



### III. Technology Details

#### JIO

| Technology | Time Spent % |
|------------|--------------|
| 4G         | 100          |

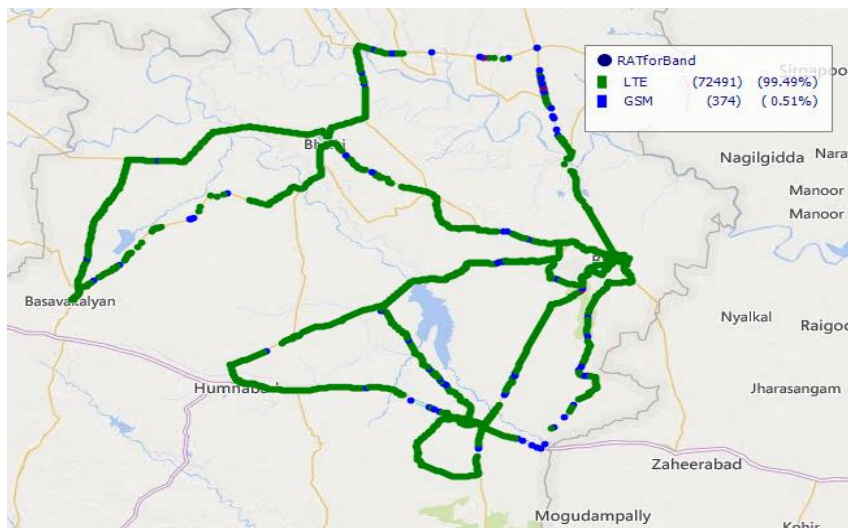




### III. Technology Details

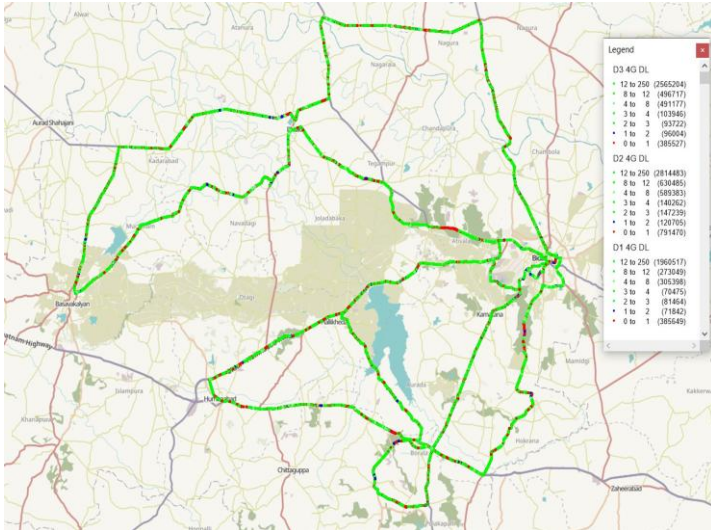
#### VIL

| Technology | Time Spent (%) |
|------------|----------------|
| 4G         | 99.49%         |

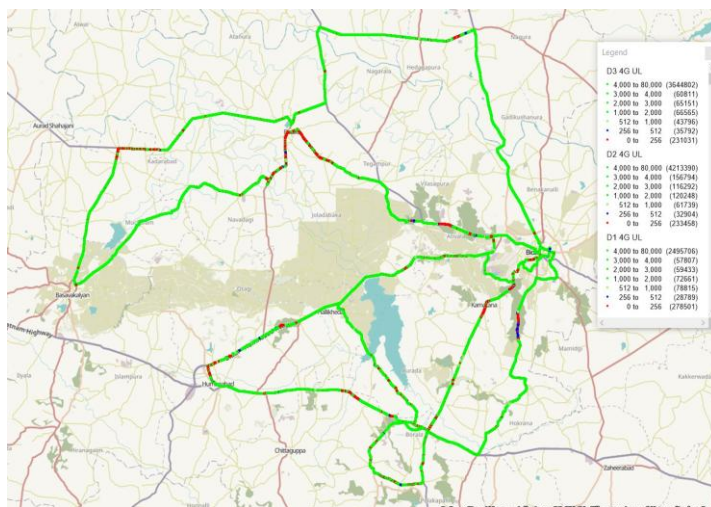


## IV. Dynamic Data Test (Data Test on Move) - 4G DL/UL Details

### Airtel



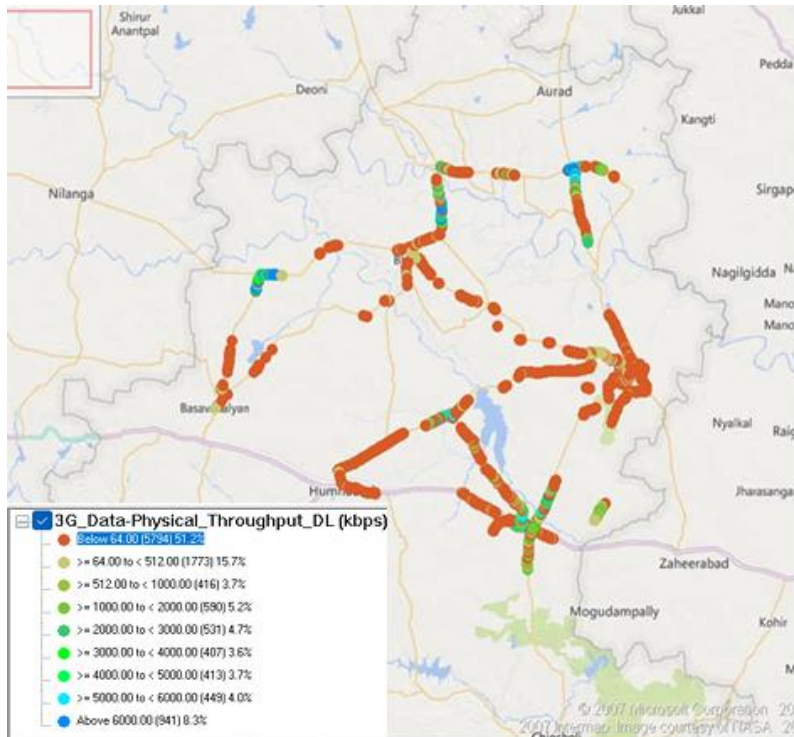
| DL throughput | Total Samples   | %          |
|---------------|-----------------|------------|
| 0 to 1 Mbps   | 1562646         | 12.39      |
| 1 to 2 Mbps   | 288551          | 2.29       |
| 2 to 3 Mbps   | 322425          | 2.56       |
| 3 to 4 Mbps   | 314683          | 2.49       |
| 4 to 8 Mbps   | 1385958         | 10.99      |
| 8 to 12 Mbps  | 1400251         | 11.10      |
| >12 Mbps      | 7340204         | 58.19      |
| <b>Total</b>  | <b>12614718</b> | <b>100</b> |



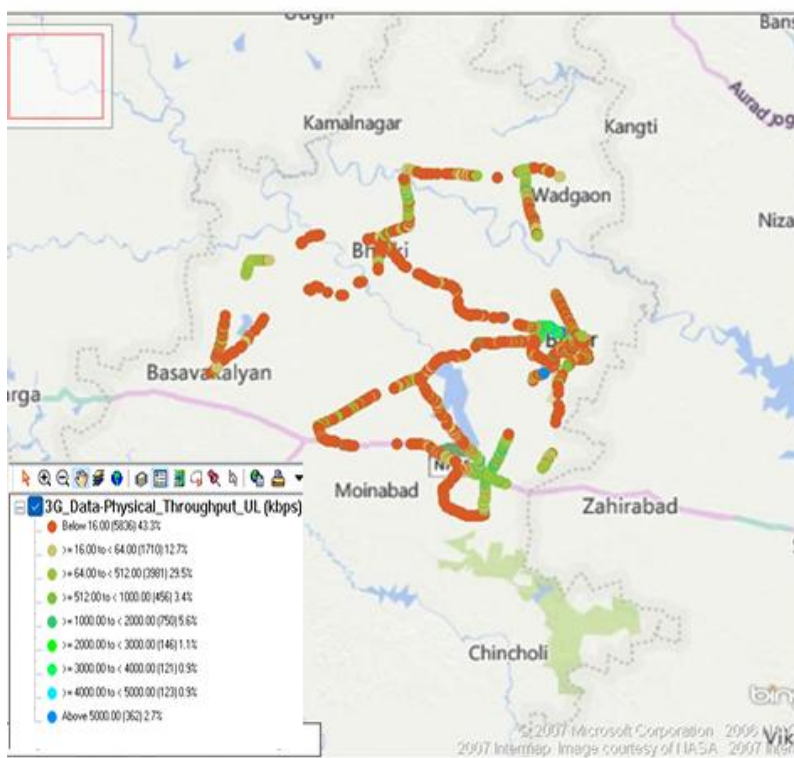
| Upload throughput  | Total Samples   | %          |
|--------------------|-----------------|------------|
| 0 to 256 kbps Mbps | 742990          | 6.11       |
| 250 to 512 kbps    | 97485           | 0.80       |
| 512 Kbps to 1 Mbps | 184350          | 1.52       |
| 1 to 2 Mbps        | 259474          | 2.13       |
| 2 to 3 Mbps        | 240876          | 1.98       |
| 3 to 4 Mbps        | 275412          | 2.27       |
| >4Mbps             | 10353898        | 85.19      |
| <b>Total</b>       | <b>12154485</b> | <b>100</b> |

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

### BSNL



| DL throughput | No. of Samples | %      |
|---------------|----------------|--------|
| 0 to 1 Mbps   | 7983           | 70.56  |
| 1 to 2 Mbps   | 590            | 5.21   |
| 2 to 3 Mbps   | 531            | 4.69   |
| 3 to 4 Mbps   | 407            | 3.60   |
| 4 to 5 Mbps   | 413            | 3.65   |
| 5 to 6 Mbps   | 449            | 3.97   |
| >6 Mbps       | 941            | 8.32   |
| Total         | 11314          | 100.00 |

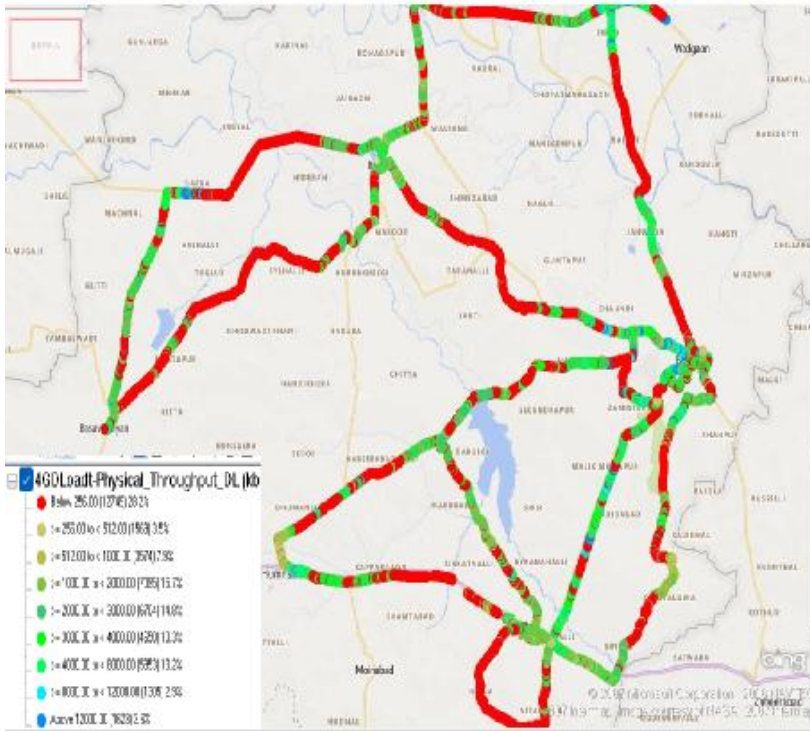


| Upload throughput  | No. of samples | %        |
|--------------------|----------------|----------|
| 0 to 64 kbps       | 7546           | 55.96 %  |
| 64 to 512 kbps     | 3981           | 29.52 %  |
| 512 Kbps to 1 Mbps | 456            | 3.38 %   |
| 1 to 2 Mbps        | 750            | 5.56 %   |
| 2 to 3 Mbps        | 146            | 1.08 %   |
| 3 to 4 Mbps        | 121            | 0.90 %   |
| >4Mbps             | 485            | 3.60 %   |
| Total              | 13485          | 100.00 % |

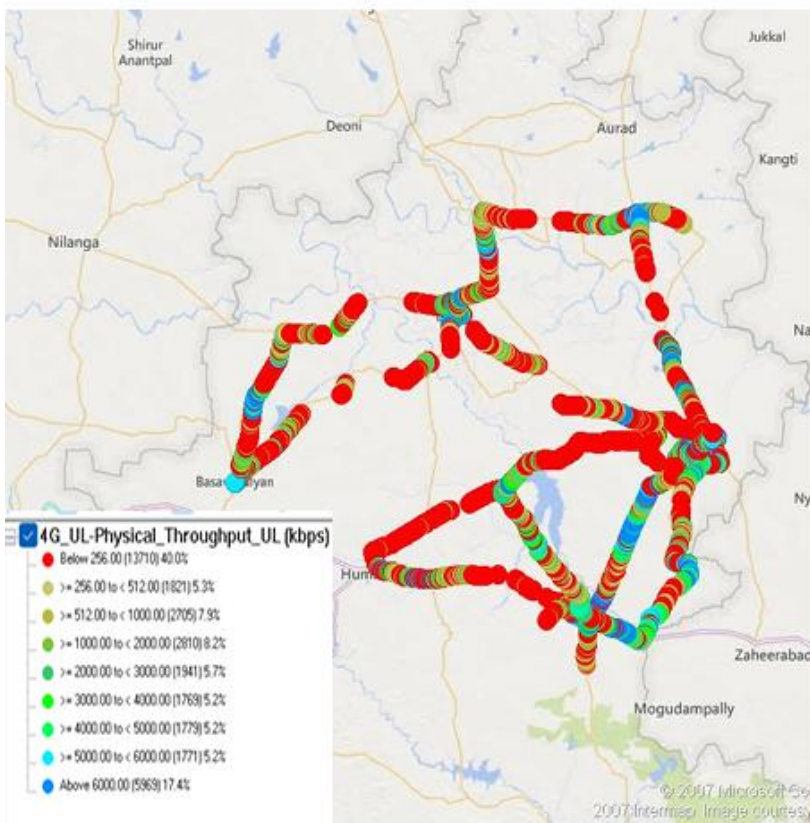


## IV. Dynamic Data Test (Test Data on Move) - 4G DL/UL Details

### BSNL



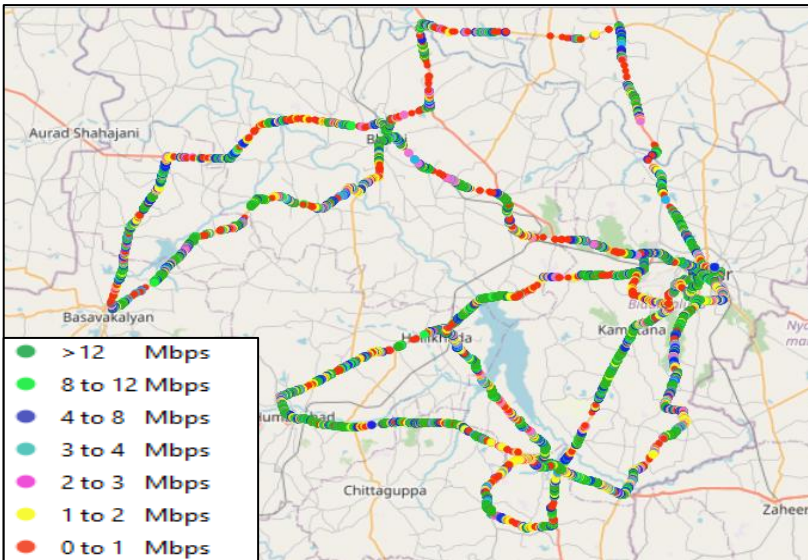
| DL throughput | No. of Samples | %       |
|---------------|----------------|---------|
| 0 to 1 Mbps   | 17892          | 39.56 % |
| 1 to 2 Mbps   | 7095           | 15.69 % |
| 2 to 3 Mbps   | 6704           | 14.82 % |
| 3 to 4 Mbps   | 4650           | 10.28 % |
| 4 to 8 Mbps   | 5953           | 13.16 % |
| 8 to 12 Mbps  | 1305           | 2.89 %  |
| >12 Mbps      | 1623           | 3.59 %  |
| Total         | 45222          | 100%    |



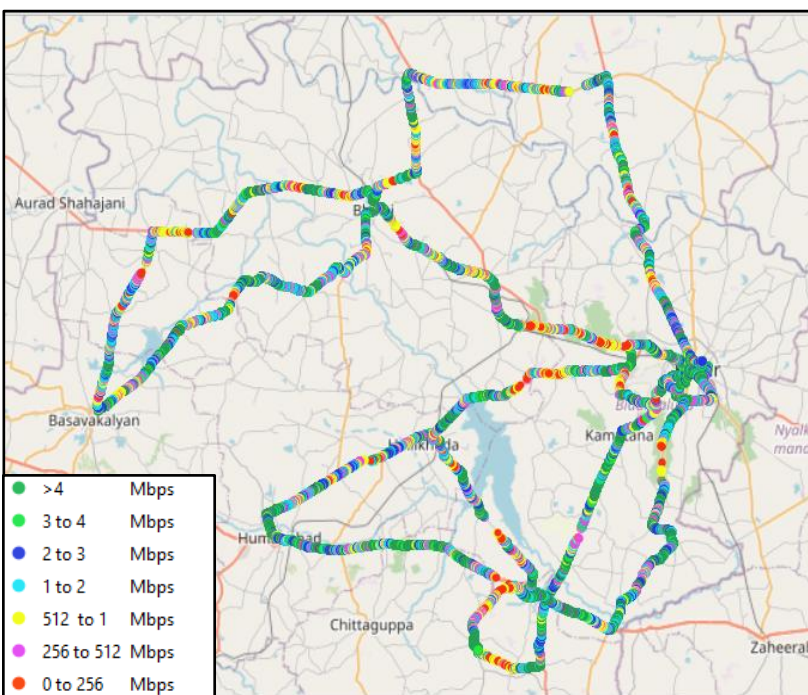
| UL throughput      | No. of samples | %        |
|--------------------|----------------|----------|
| 0 to 256 kbps      | 13710          | 40.00 %  |
| 250 to 512 kbps    | 1821           | 5.31 %   |
| 512 Kbps to 1 Mbps | 2705           | 7.89 %   |
| 1 to 2 Mbps        | 2810           | 8.20 %   |
| 2 to 3 Mbps        | 1941           | 5.66 %   |
| 3 to 4 Mbps        | 1769           | 5.16 %   |
| >4Mbps             | 9519           | 27.77 %  |
| Total              | 34275          | 100.00 % |

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

### JIO



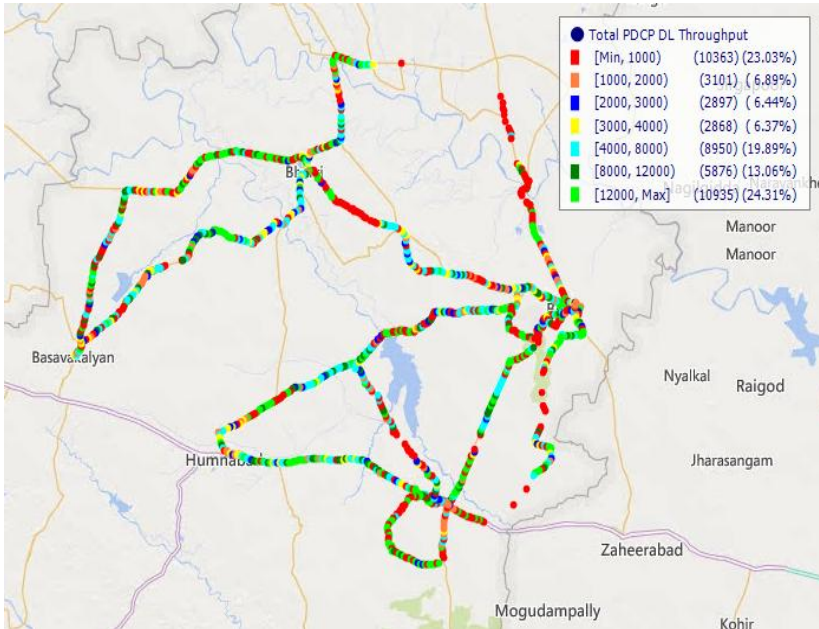
| DL throughput | No. of Samples | %    |
|---------------|----------------|------|
| >12 Mbps      | 11235          | 36.3 |
| 8 to 12 Mbps  | 3633           | 11.7 |
| 4 to 8 Mbps   | 5407           | 17.5 |
| 3 to 4 Mbps   | 1758           | 5.7  |
| 2 to 3 Mbps   | 2190           | 7.1  |
| 1 to 2 Mbps   | 2598           | 8.4  |
| 0 to 1 Mbps   | 4113           | 13.3 |
| Total         | 30934          | 100  |



| Upload throughput  | No. of samples | %     |
|--------------------|----------------|-------|
| >4Mbps             | 13496          | 36.81 |
| 3 to 4 Mbps        | 3505           | 9.56  |
| 2 to 3 Mbps        | 4512           | 12.31 |
| 1 to 2 Mbps        | 5958           | 16.25 |
| 512 Kbps to 1 Mbps | 3894           | 10.62 |
| 250 to 512 kbps    | 2690           | 7.337 |
| 0 to 256 kbps      | 2610           | 7.119 |
| Total              | 36665          | 100   |

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

### VIL



| DL throughput | No. of Samples | %          |
|---------------|----------------|------------|
| 0 to 1 Mbps   | 10363          | 23.03      |
| 1 to 2 Mbps   | 3101           | 6.89       |
| 2 to 3 Mbps   | 2897           | 6.44       |
| 3 to 4 Mbps   | 2868           | 6.37       |
| 4 to 8 Mbps   | 8950           | 19.89      |
| 8 to 12 Mbps  | 5876           | 13.06      |
| >12 Mbps      | 10935          | 24.31      |
| <b>Total</b>  | <b>44990</b>   | <b>100</b> |

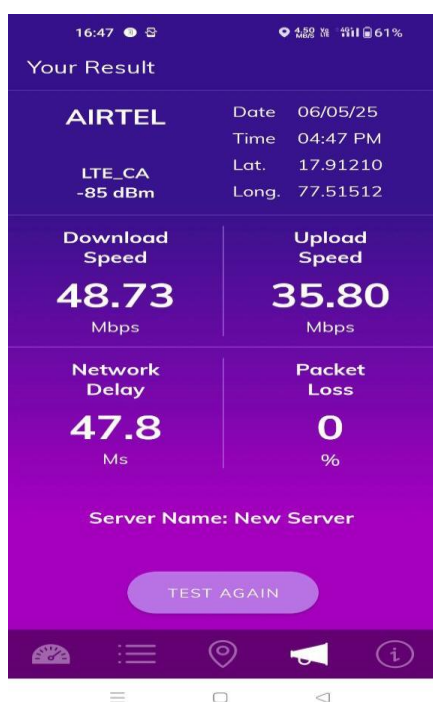


# V. TRAI My Speed App Test Details-4G

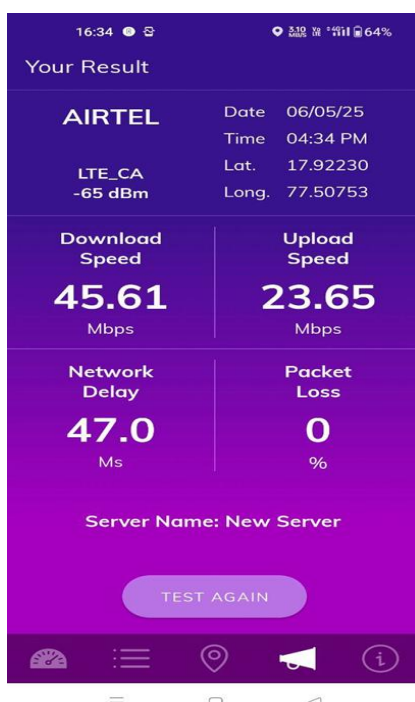
## AIRTEL

| Techology-4G/VoLTE | Location 1 | Location 2 | Location 3 | Location 4 | Location 5 | Location 6 |
|--------------------|------------|------------|------------|------------|------------|------------|
| Download Speed     | 48.73      | 45.61      | 33.05      | 30.59      | 20.94      | 79.96      |
| Upload Speed       | 35.80      | 23.65      | 13.88      | 28.41      | 17.04      | 22.36      |
| Latency            | 47.8       | 47         | 45.7       | 34.3       | 45.4       | 38.8       |

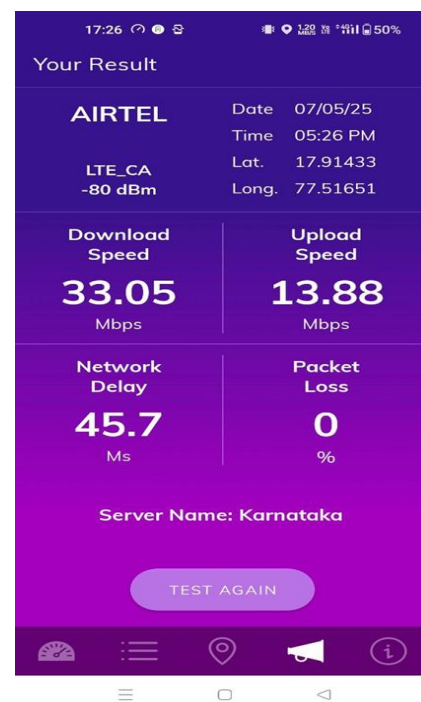
LOC 1



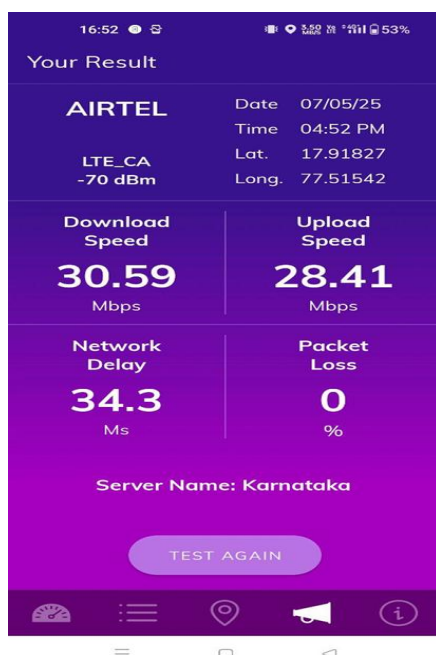
LOC 2



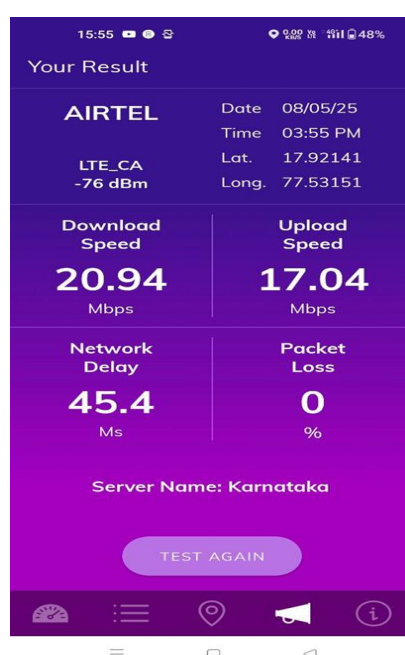
LOC 3



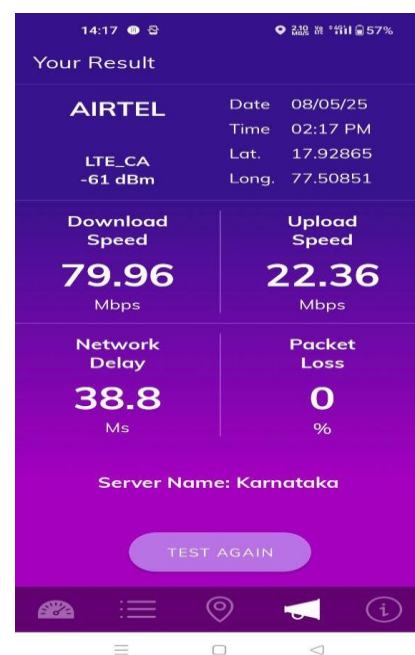
LOC 4



LOC 5



LOC 6



# V. TRAI My Speed App Test Details- 4G

## BSNL

| Technolgy-4G          | Location 1 | Location 2 | Location 3 | Location 4 | Location 5 | Location 6 |
|-----------------------|------------|------------|------------|------------|------------|------------|
| Download Speed (Mbps) | 6.98       | 5.28       | 6.44       | 6.75       | 6.43       | 8.92       |
| Upload Speed (Mbps)   | 2.10       | 5.71       | 1.84       | 1.04       | 3.54       | 1.71       |
| Latency (ms)          | 86.4       | 107.8      | 90.6       | 67.2       | 85.6       | 93.4       |

LOC 1

LOC 2

LOC 3



LOC 4

LOC 5

LOC 6

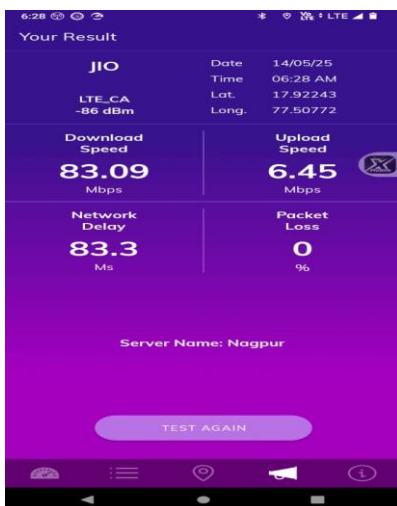


# V. TRAI My Speed App Test Details-4G

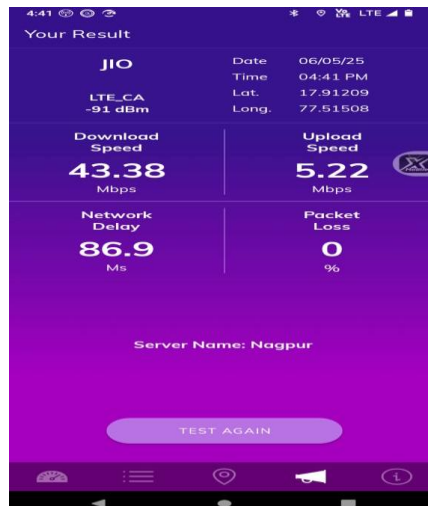
## JIO

| Techology-4G/VoLTE | Bidar Bus stand | Bidar Railway Station | Govt Hospital | DC Office | Bidar Fort | Gurdwara |
|--------------------|-----------------|-----------------------|---------------|-----------|------------|----------|
| Download Speed     | 83.09           | 43.38                 | 58.98         | 47.19     | 30.51      | 31.85    |
| Upload Speed       | 6.45            | 5.22                  | 26.61         | 6.09      | 10.53      | 3.9      |
| Latency            | 83.3            | 86.9                  | 57.2          | 62.4      | 80.9       | 45       |

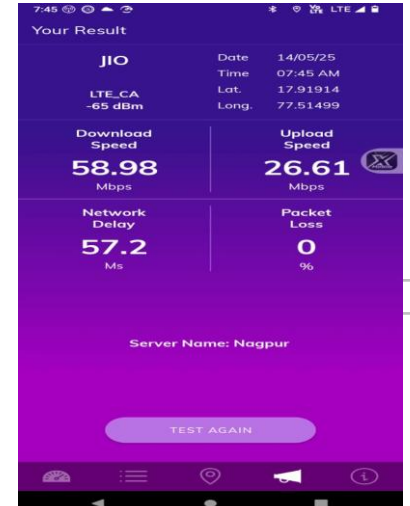
### Bidar Bus Stand



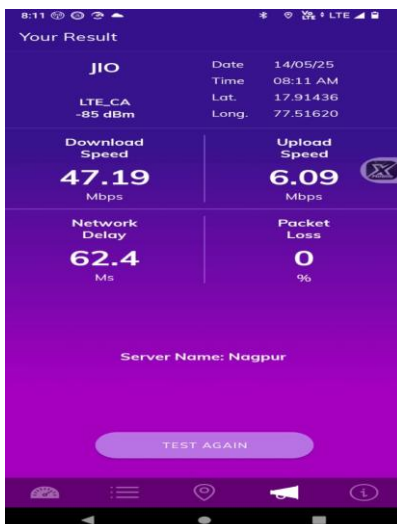
### Bidar Railway station



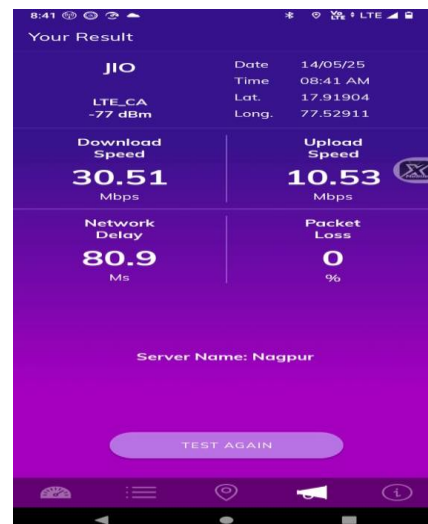
### Govt Hospital



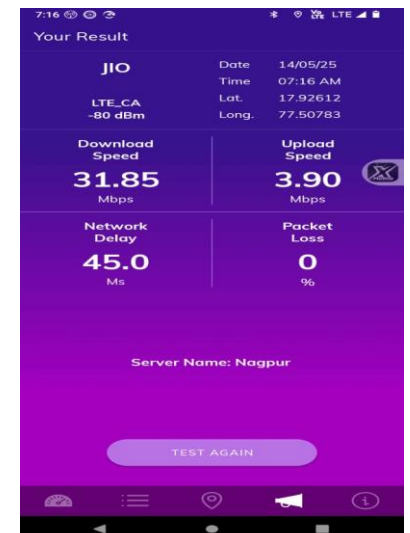
### DC Offic



### Bidar Fort



### Gurudwara

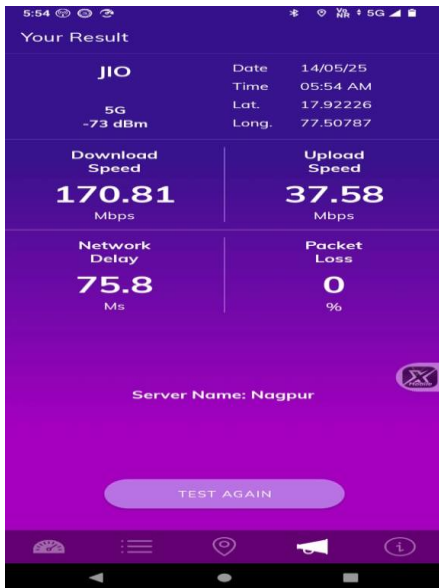


# V. TRAI My Speed App Test Details-5G

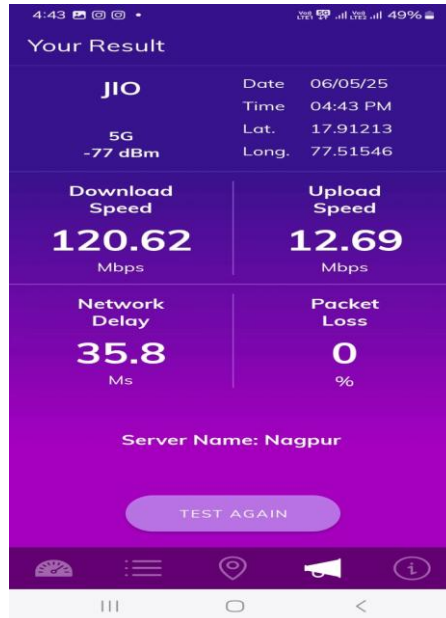
## JIO

| Techology-5G/VoNR | Loc1<br>Bidar Bus<br>stand | Loc 2<br>Bidar<br>Railway<br>Station | Loc 3<br>Govt<br>Hospital | Loc 4<br>DC Office | Loc 5<br>Bidar Fort | Loc 6<br>Gurdwara |
|-------------------|----------------------------|--------------------------------------|---------------------------|--------------------|---------------------|-------------------|
| Download Speed    | 170.81                     | 120.62                               | 142.51                    | 181.48             | 154..04             | 158.69            |
| Upload Speed      | 37.58                      | 12.69                                | 29.02                     | 36.63              | 37.67               | 27.37             |
| Latency           | 75.8                       | 35.8                                 | 60.3                      | 51.3               | 61.4                | 50                |

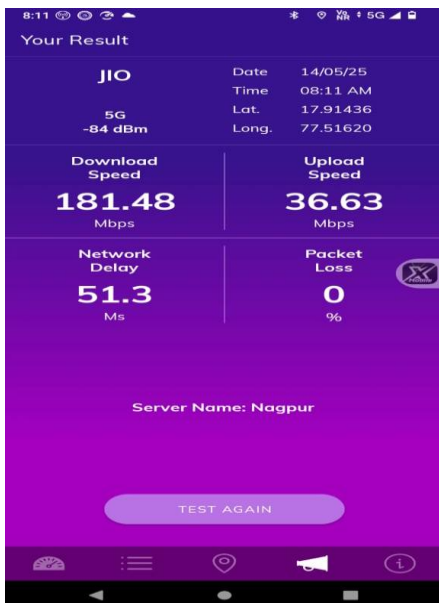
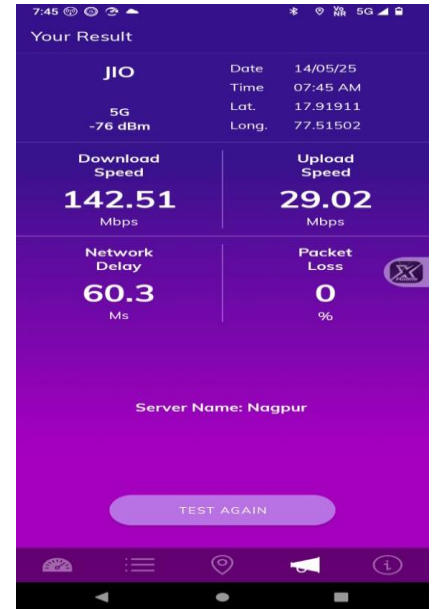
### LOC 1



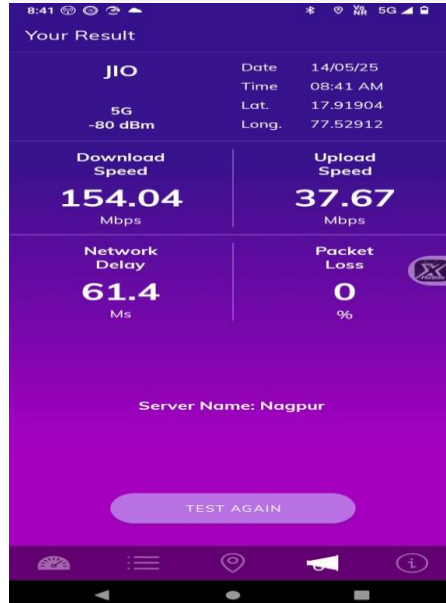
### LOC 2



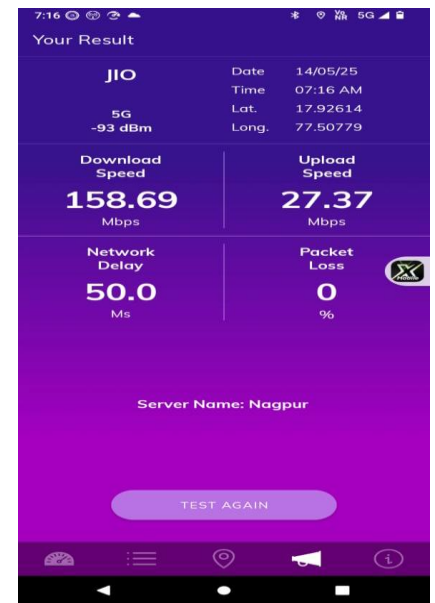
### LOC 3



### LOC 4



### LOC 5



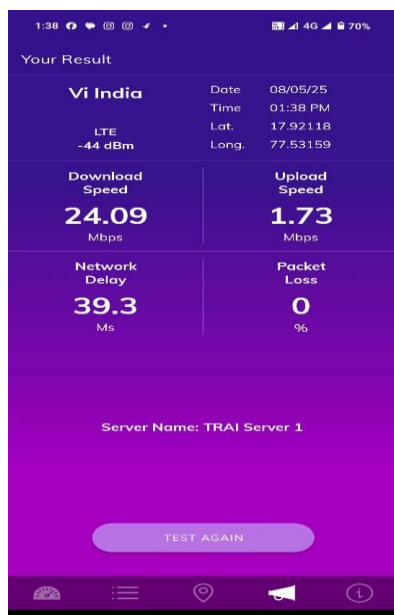
### LOC 6

# V. TRAI My Speed App Test Details-4G

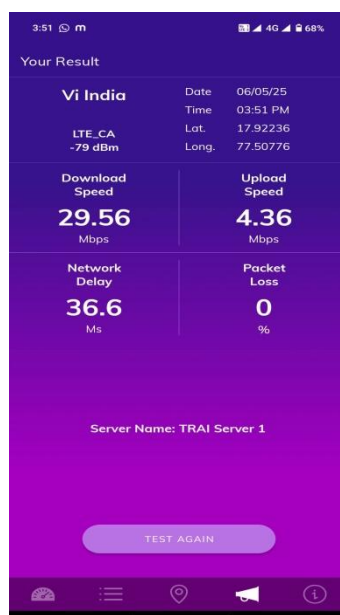
VIL

| Techology-4G/VoLTE | Loc 1<br>Bidar Fort, Bidar | Loc 2<br>Bus Stand, Bidar | Loc 3<br>DC Office, Bidar | Loc 4<br>Government Hospital, Bidar | Loc 5<br>Gurudwara, Bidar | Loc 6<br>Railway Station, Bidar |
|--------------------|----------------------------|---------------------------|---------------------------|-------------------------------------|---------------------------|---------------------------------|
| Download Speed     | 24.09                      | 29.56                     | 22.49                     | 35.6                                | 28.01                     | 24.24                           |
| Upload Speed       | 1.73                       | 4.36                      | 1.08                      | 1.12                                | 1.22                      | 5.53                            |
| Latency            | 39.3                       | 36.6                      | 34.1                      | 36.8                                | 44                        | 36.3                            |

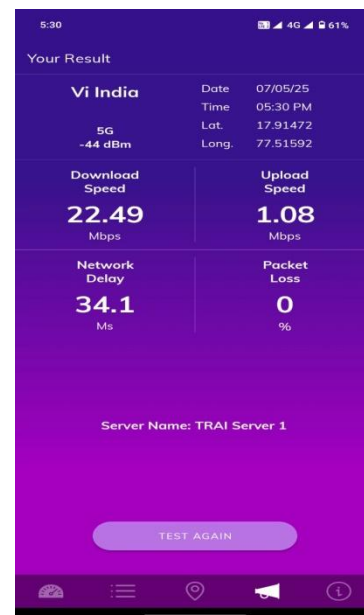
LOC 1



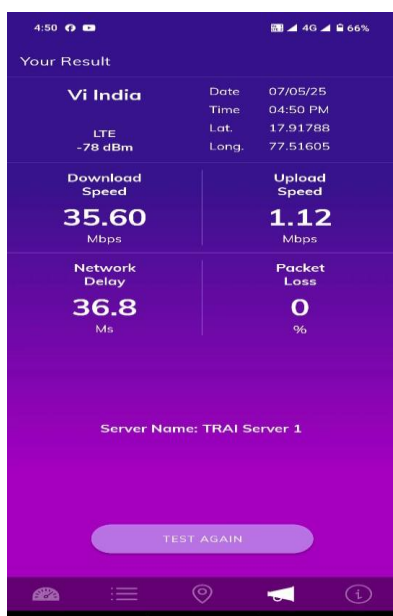
LOC 2



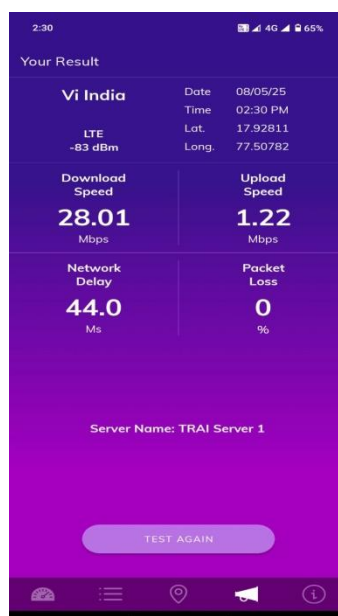
LOC 3



LOC 4



LOC 5



LOC 6

