

# Operator Assisted Drive Test Report

## Meghalaya March 2022 (RO, Kolkata)

### Key Performance Indicators (KPIs):

The following TSPs could not meet the KPIs benchmark as stated below—

**Airtel**- Rx Quality (SINR) in 4G network.

**BSNL**-Drop Call Rate (2G & 3G), Block Call Rate (2G & 3G), Call Setup Success Rate (2G) and Rx Quality (2G & 3G).

**RJIO**-Block Call Rate, Call Setup Success Rate & Rx Quality (SINR) in 4G network.

**VIL**- Rx Quality in 2G and Rx Quality (SINR) in 4G network.

The Operator Assisted Drive Test has been carried out by Regional Office, Kolkata with the help of Service Providers in Meghalaya on 1<sup>st</sup> March'22, 2<sup>nd</sup> March'22 and 3<sup>rd</sup> March'22 from 9:00 AM to 7:00 PM. The drive test covered drive route of 574 KMs over a period of 3 days. Approximately 380+ calls were made for each of the 7 networks: three 2G networks, one 3G network and three 4G network covering four TSPs.

# Overview

**Meghalaya**, state of India, located in the north-eastern part of the country. It is bounded by the Indian state of Assam to the north and northeast and by Bangladesh to the south and southwest. The state capital is the hill town of Shillong, located in east-central Meghalaya.

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, Call Setup Success Rate, Drop Call Rate and Block Call Rate.

**Data:** Download Throughputs and Data File Success Rate.

**Video Call:** Video secession disconnection and poor Video quality.

**Voice Tests:** Calls were made for 180 secs duration with wait time of 10 sec between call in all technologies. Three 2G (Lock Mode) networks, One 3G (Lock Mode) networks, Three 4G (Lock Mode) networks covering 4 unique TSPs were tested.

**Data Tests:** Dynamic Data Service Testing was performed along same route in all technologies. 20MB file for 3G and 40MB file for 4G were downloaded from FTTP server in TSP's own server. Static Data Service Testing was also performed. Three 2G (Lock Mode) networks, One 3G (Lock Mode) networks, Three LTE (Lock Mode) networks covering 4 unique TSPs were tested.

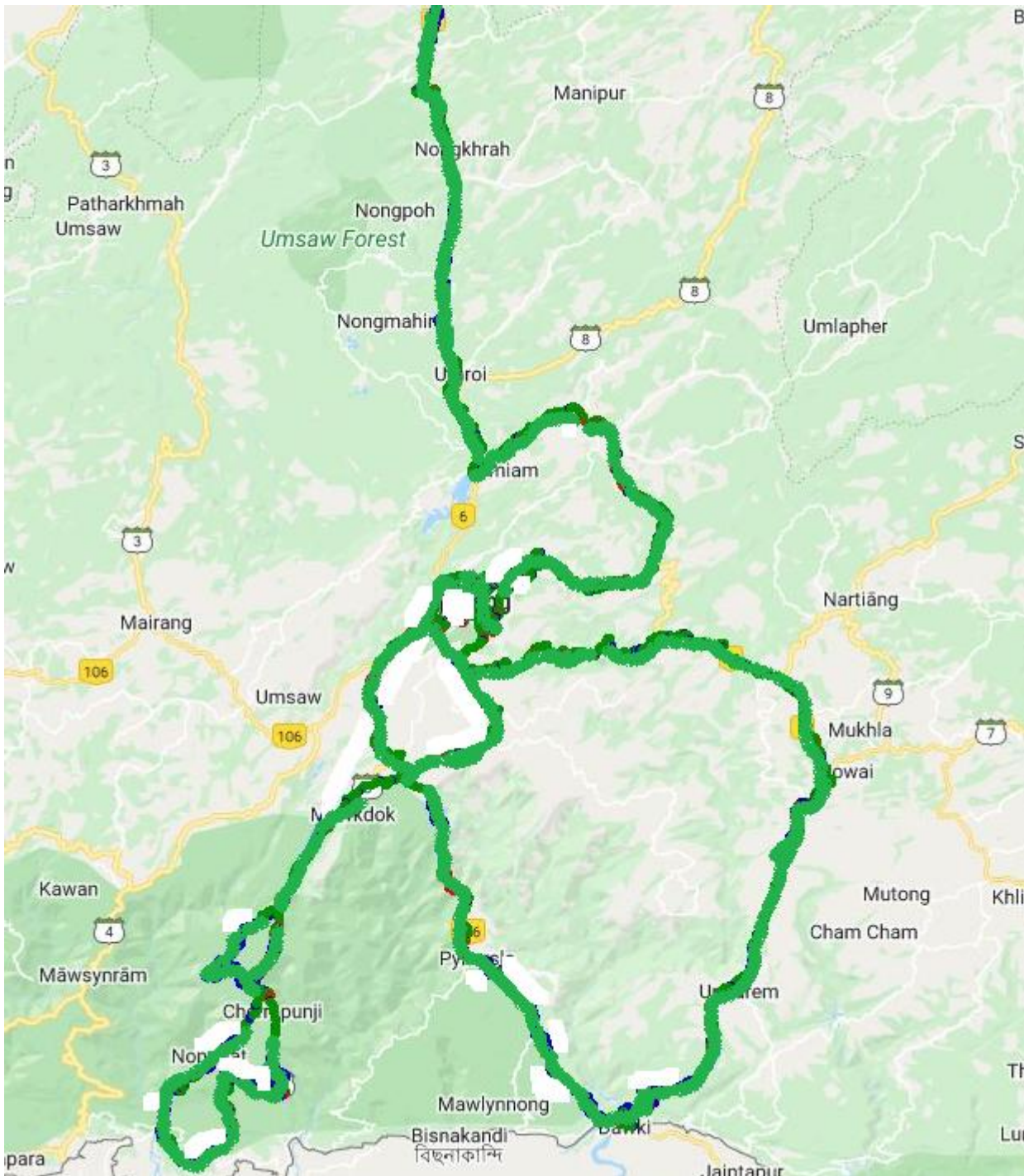
**Video Call Tests:** A Google meeting link was created for this OADT. All TSPs joined the Google meet link through their Handset and this online meeting was continued throughout the Drive Test. This online meeting was monitored by Advisor and other officials of RO Kolkata.

**TRAI Myspeed App:** Data download, Data Upload, Signal strength, Packet loss and Latency were measured through this App in the different locations on the drive test route.

Technology/ TSP	AIRTEL	BSNL	RJIO	VODAFONE-IDEA
2G	YES	YES	NO	YES
3G	NO	YES	NO	NO
4G	YES	NO	YES	YES
TOOL USED	TEMS	NIMO & TEMS	X-CAL	TEMS

# Overview

## Voice & Dynamic Data Test Drive Route



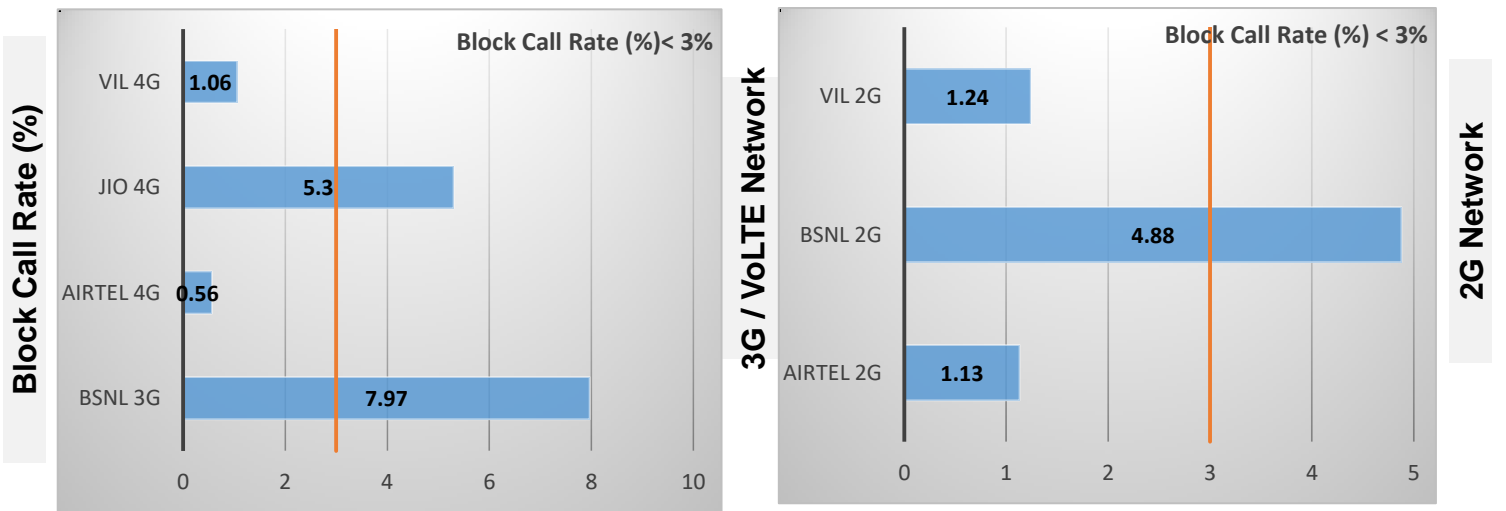
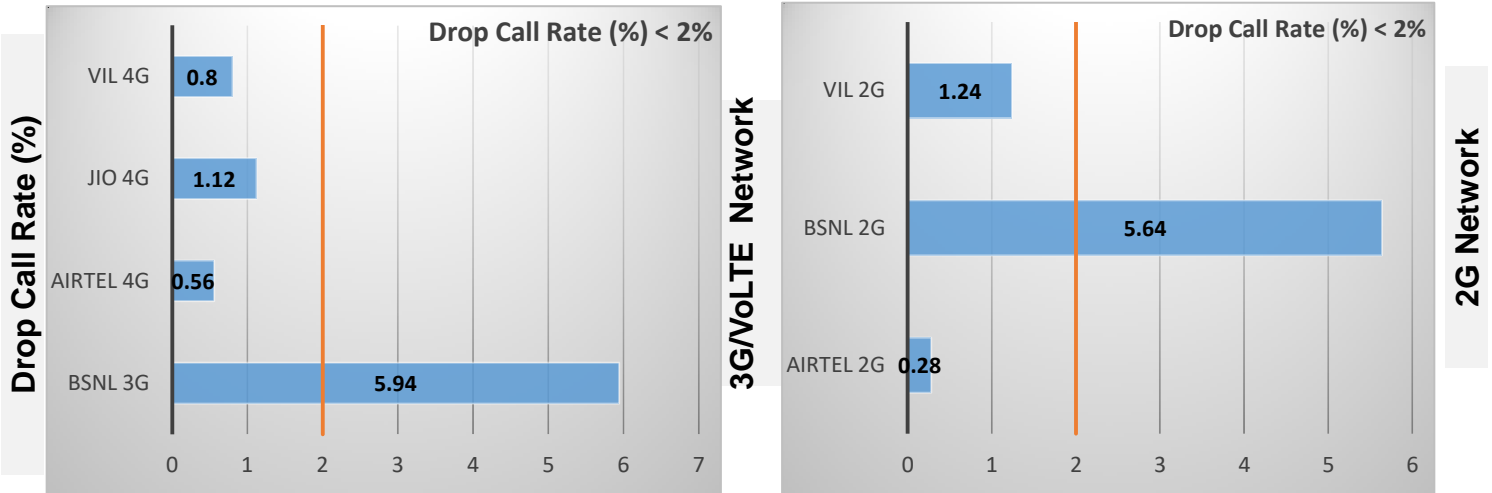
### DRIVE ROUTES OF MEGHALAYA

**DAY-1-** Guwahati-Meghalaya Border to Shillong Airport, Shilong City and surrounding areas, **DAY-2-** NH-206 (Ummlong-Jowai-Pamtadong-Pontung-Langkyrdem-Mylliem), **DAY-3-** Shilong-Cherrapunji-Ringur-Shella Bholagunj-Nongrial-Mawmluh- Cherrapungi.

# Voice Calls

## Key Observations

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



KPIs	2G			3G	4G-VoLTE		
	Airtel	BSNL	VIL	BSNL	Airtel	RJIO	VIL
Drop Call Rate %	0.28	5.64	1.24	5.94	0.56	1.12	0.80
Block Call Rate %	1.13	4.88	1.24	7.97	0.56	5.3	1.06

- a) All TSPs have met the 2% QOS benchmark of Drop Call Rate (DCR%) except BSNL (2G & 3G).
- b) All TSPs have met the 3% QOS benchmark Block Call Rate (BCR) except BSNL(2G & 3G) and RJIO (4G)

### Coverage

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

TSPs	2G		
	Airtel	BSNL	VIL
Coverage %	93.35	76.27	59.75

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

TSPs	3G	4G		
	BSNL	Airtel	JIO	VIL
Coverage %	50.17	93.02	88.82	69.00

# Data Services Dynamic

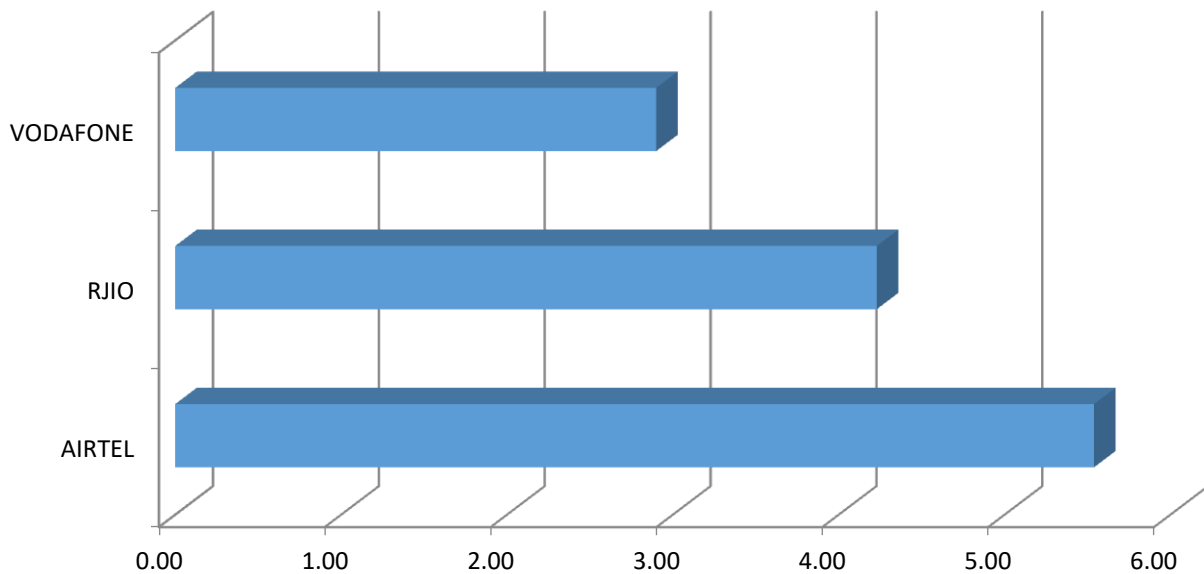
## Key Observations

Dynamic Data was tested for 574 Kms. Download Throughput was tested.

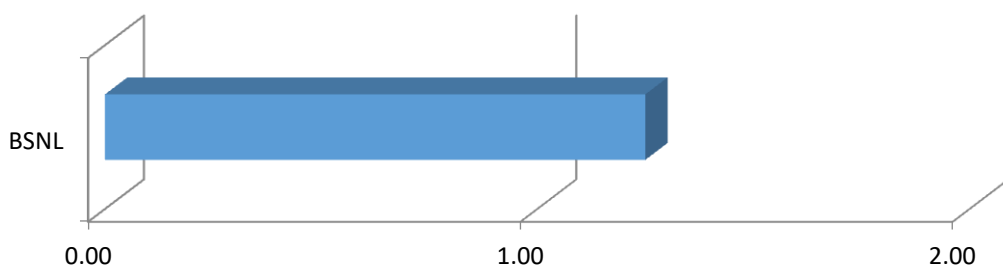
### Data Download Performance (Average Throughput in Mbps) - Dynamic Data Testing

#### 4G/3G/ Network:

#### 4G-Dynamic Download Average Throuhput (Mbps)



#### 3G-Dynamic Download Average Throuhput (Mbps)



# Summary

## City Level Summary- Voice

Voice Call	2G		
	Airtel	BSNL	VIL
Call Attempt	353	410	403
Blocked Call Rate (%)	1.13	4.88	1.24
CSSR% (Accessibility)	98.86	95.12	98.76
Drop Call Rate (%)	0.28	5.64	1.24
Mobility HOSR (%)	98.13	95.95	99.70
Rx Quality (%)	97.09	92.78	86.43

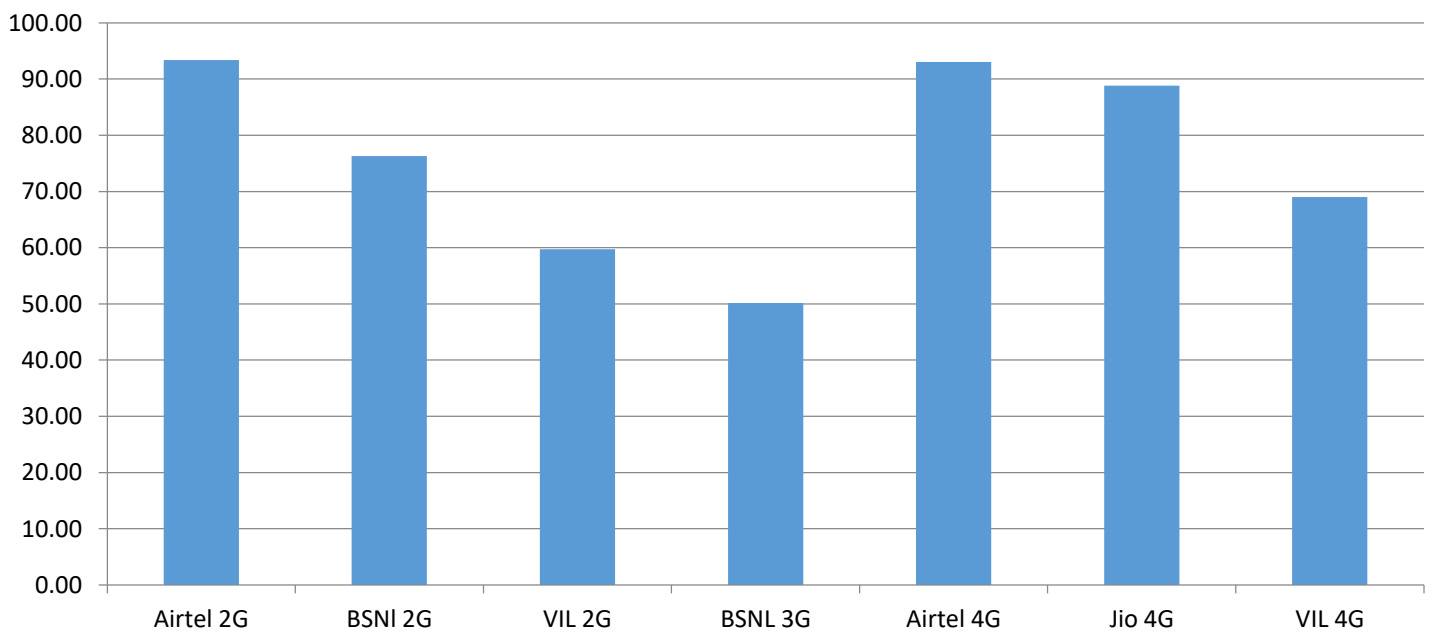
Voice Call	3G/4G			
	BSNL 3G	Airtel 4G	JIO 4G	VIL 4G
Call Attempt	320	355	358	377
Blocked Call Rate (%)	5.94	0.56	5.3	1.06
CSSR% (Accessibility)	94.06	99.44	94.69	99.0
Drop Call Rate (%)	7.97	0.56	1.12	0.80
Mobility HOSR (%)	96.59	99.21	96.91	99.11
Rx Quality (%)	73.20	91.16	81.85	66.00

# 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	93.35
BSNL 2G	76.27
VIL 2G	59.75
BSNL 3G	50.17
Airtel 4G	93.02
Jio 4G	88.82
VIL 4G	69.00

## Coverage Rate %



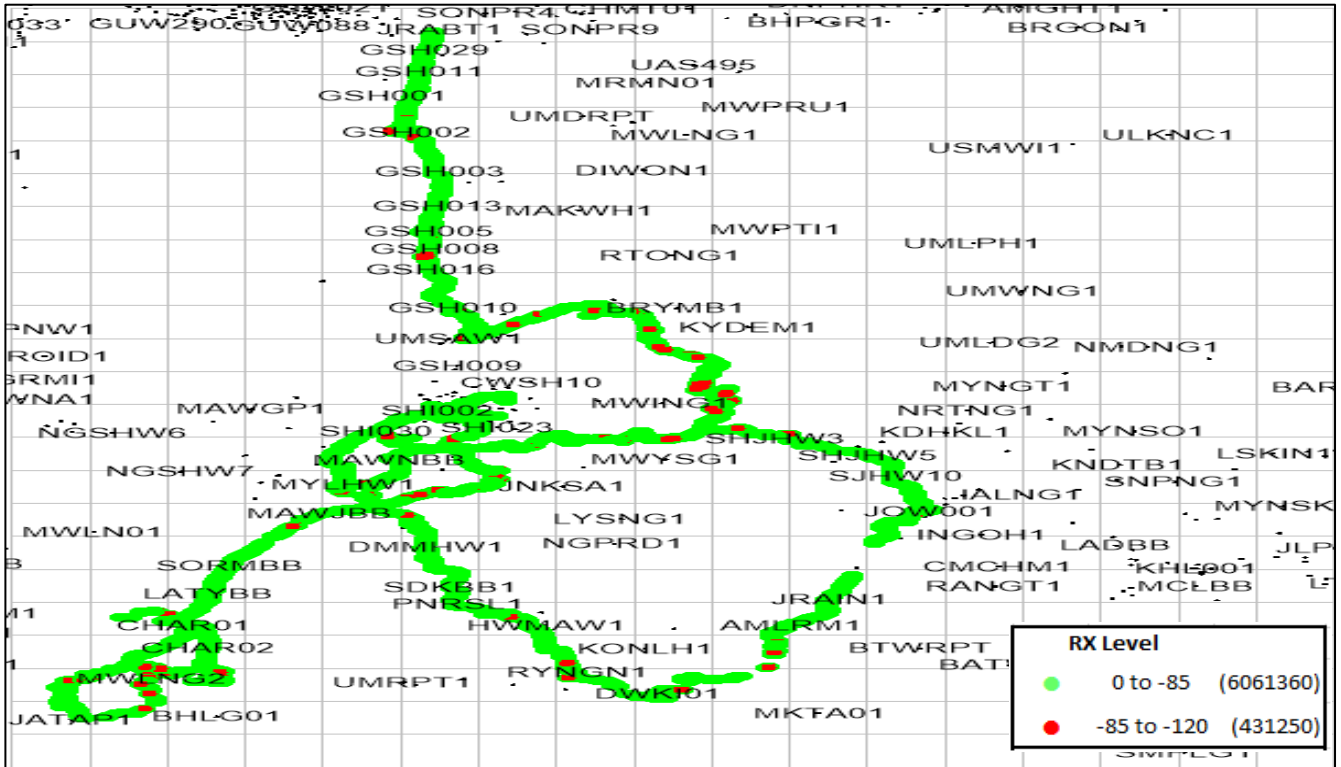


# I. Coverage Details

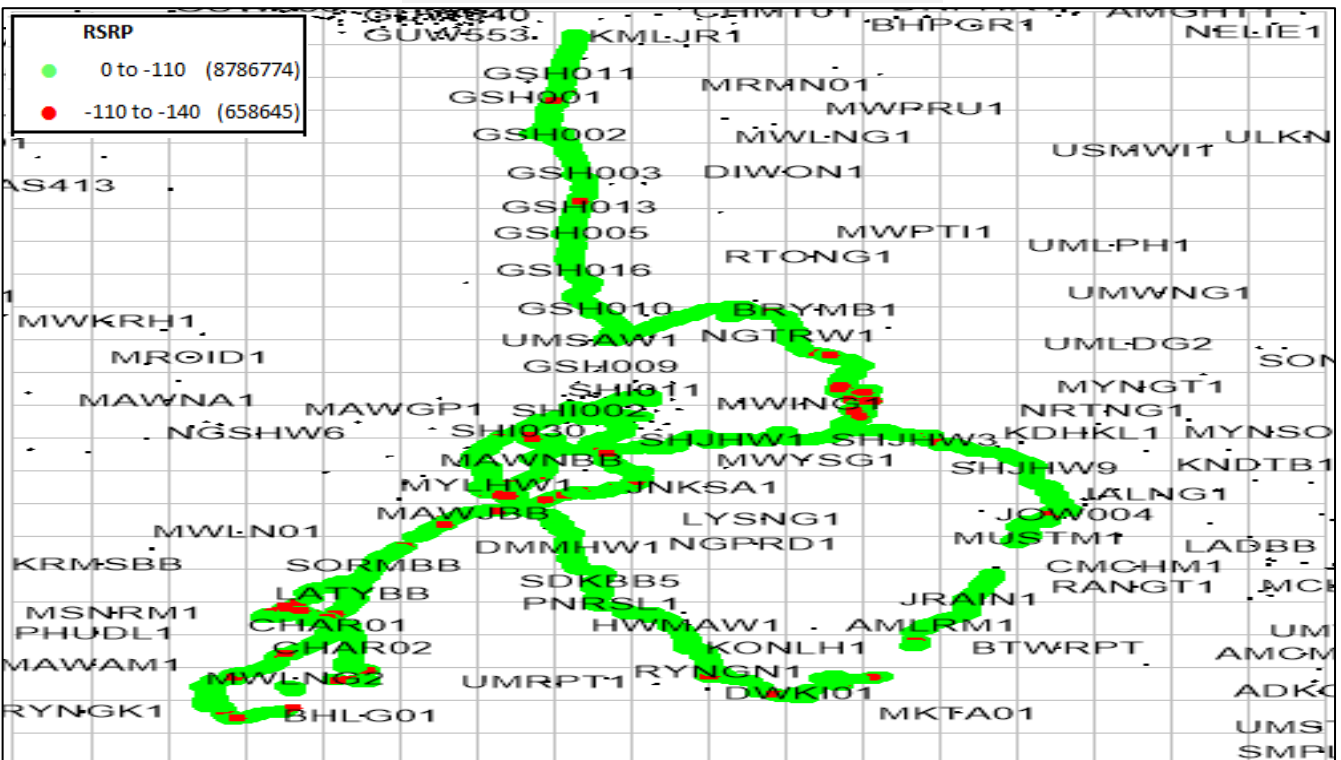
## AIRTEL

Technology	Coverage Rate %
2G	93.35
4G	93.02

### 2G



### 4G



# I. Coverage Details

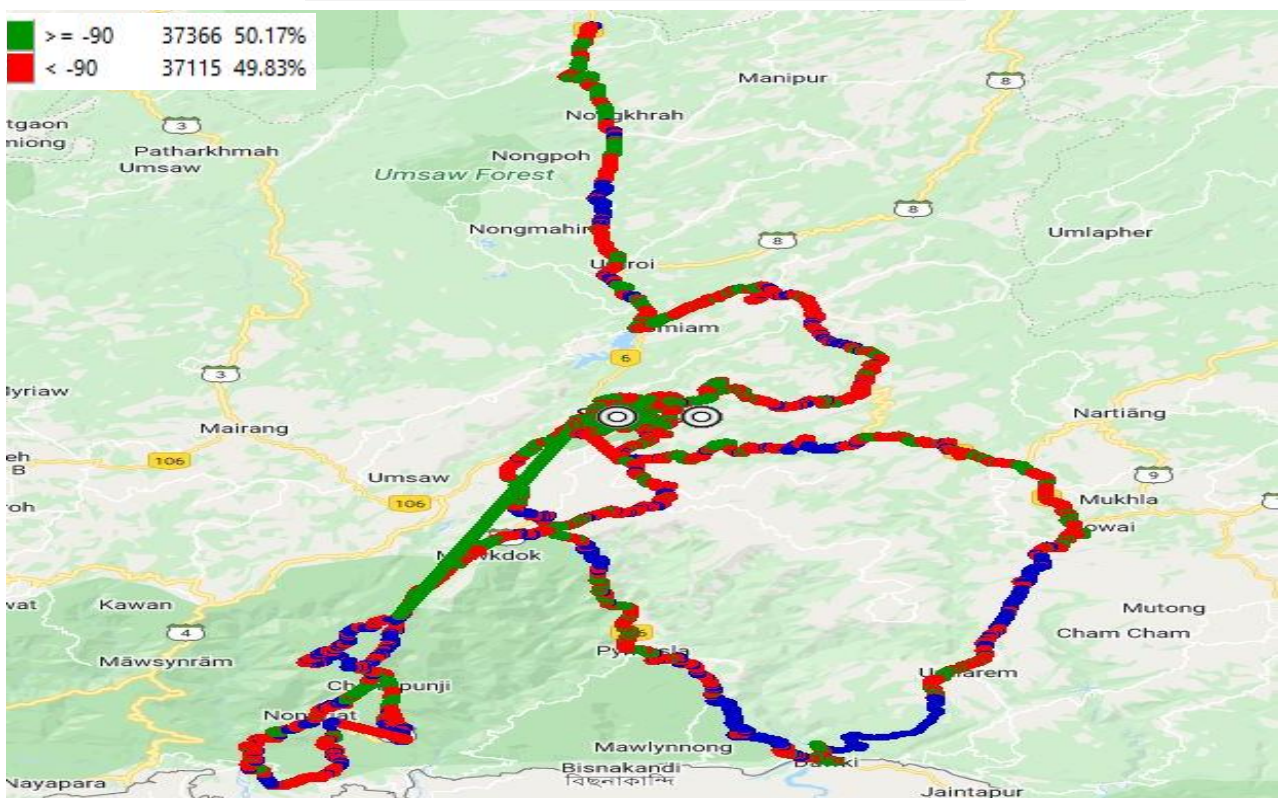
## BSNL

Technology	Coverage Rate %
2G	76.27
3G	50.17

### 2G



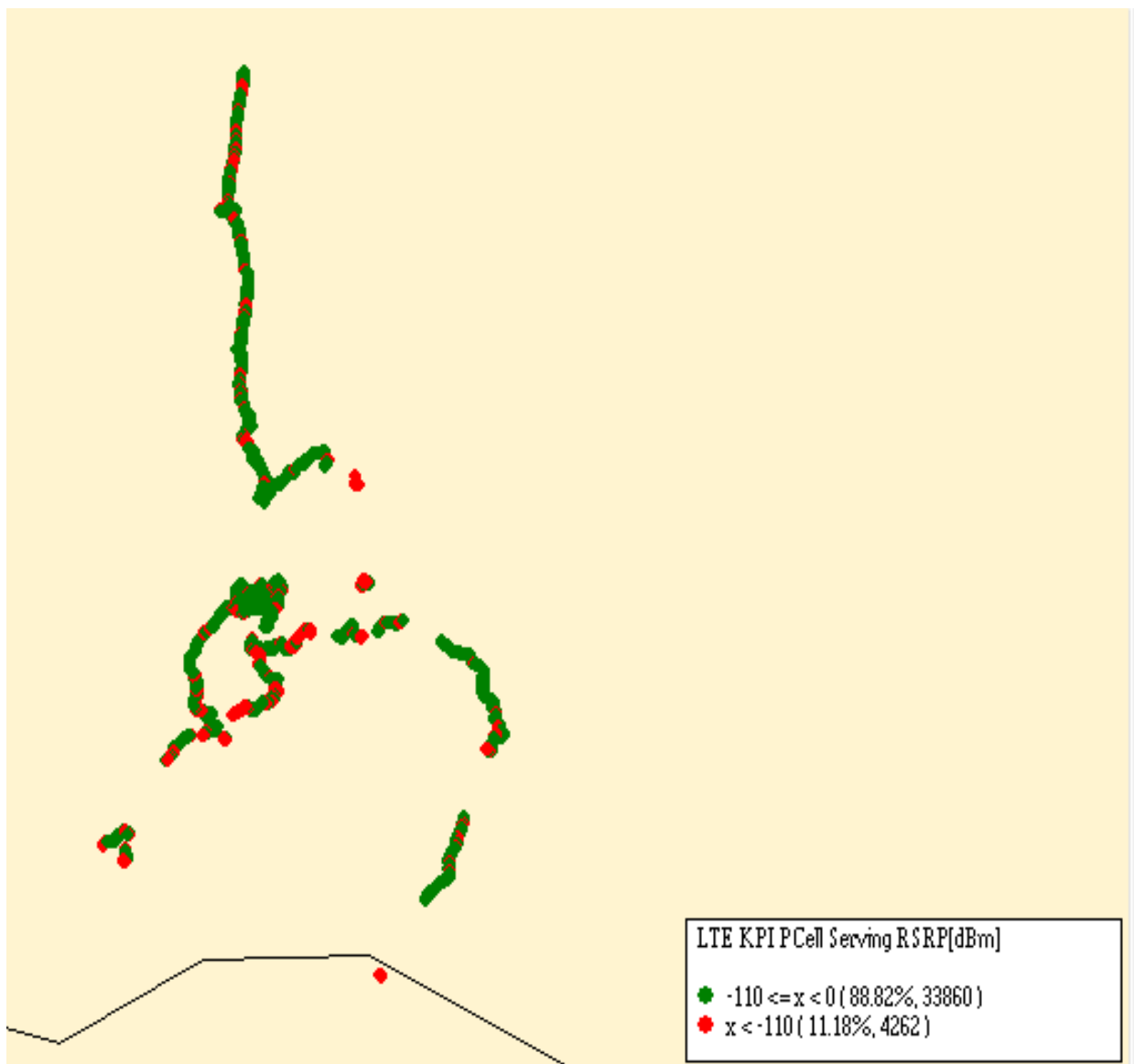
### 3G



# I. Coverage Details

## JIO

Technology	Coverage Rate %
4G	88.82

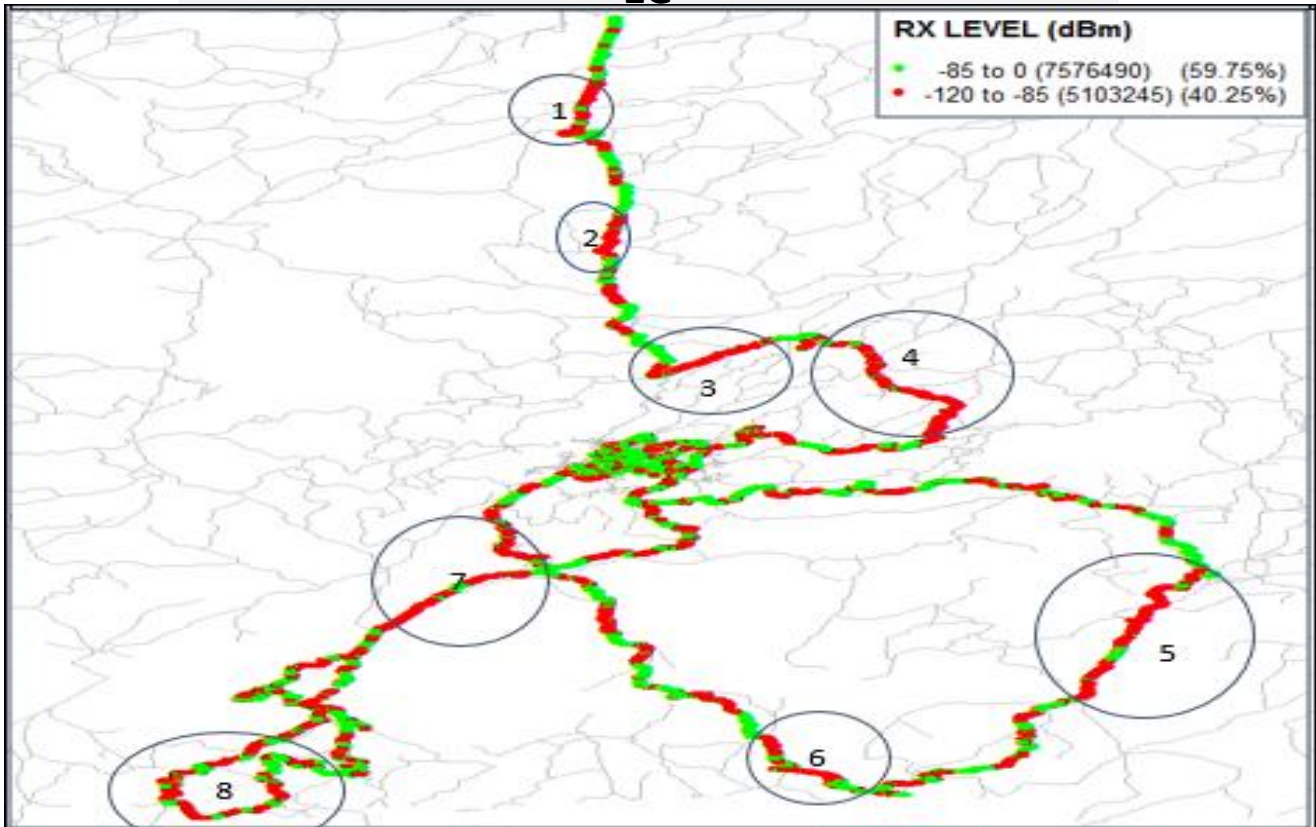


# I. Coverage Details

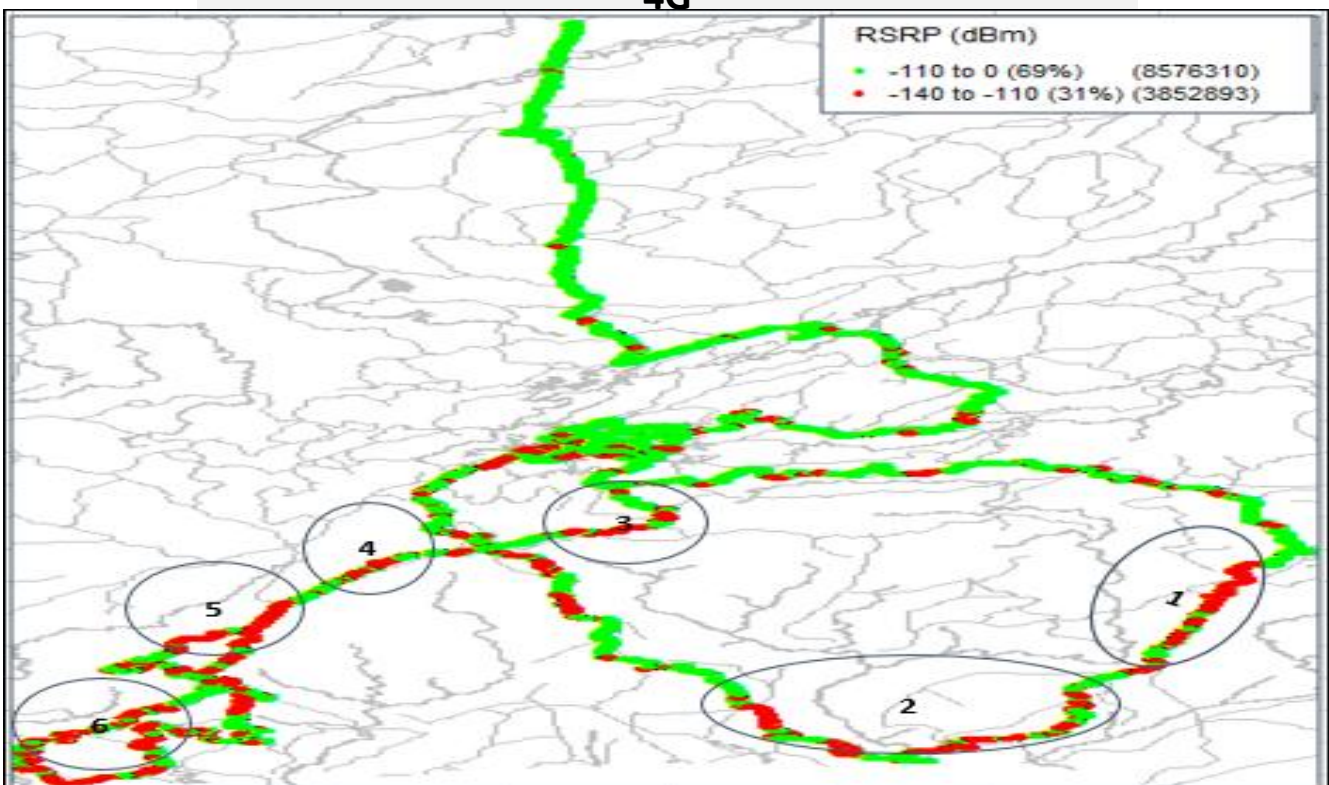
## VIL

Technology	Coverage Rate %
2G	59.75
4G	69.0

## 2G



## 4G

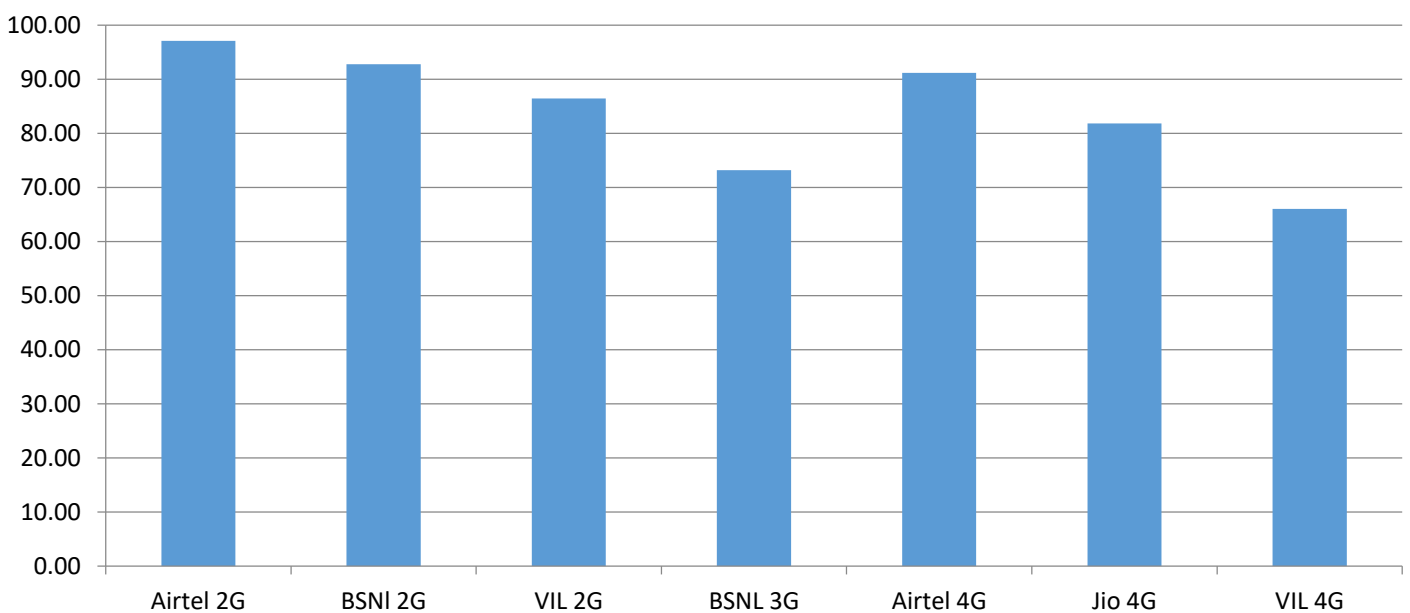


## II. Quality Details

For measuring voice quality, as per the QoS norms, RxQual  $\leq 5$  for GSM TSPs, EcNo  $\geq -14$  dBm for 3G TSP and SINR  $> 0$  in case of VoLTE is considered to be good, where as quality beyond this benchmark is considered to be bad. The benchmark should usually be  $\geq 95\%$ .

TSP	Rx Quality %
Airtel 2G	97.09
BSNI 2G	<b>92.78</b>
VIL 2G	<b>86.43</b>
BSNL 3G	<b>73.20</b>
Airtel 4G	<b>91.16</b>
Jio 4G	<b>81.85</b>
VIL 4G	<b>66.00</b>

### Rx Quality %

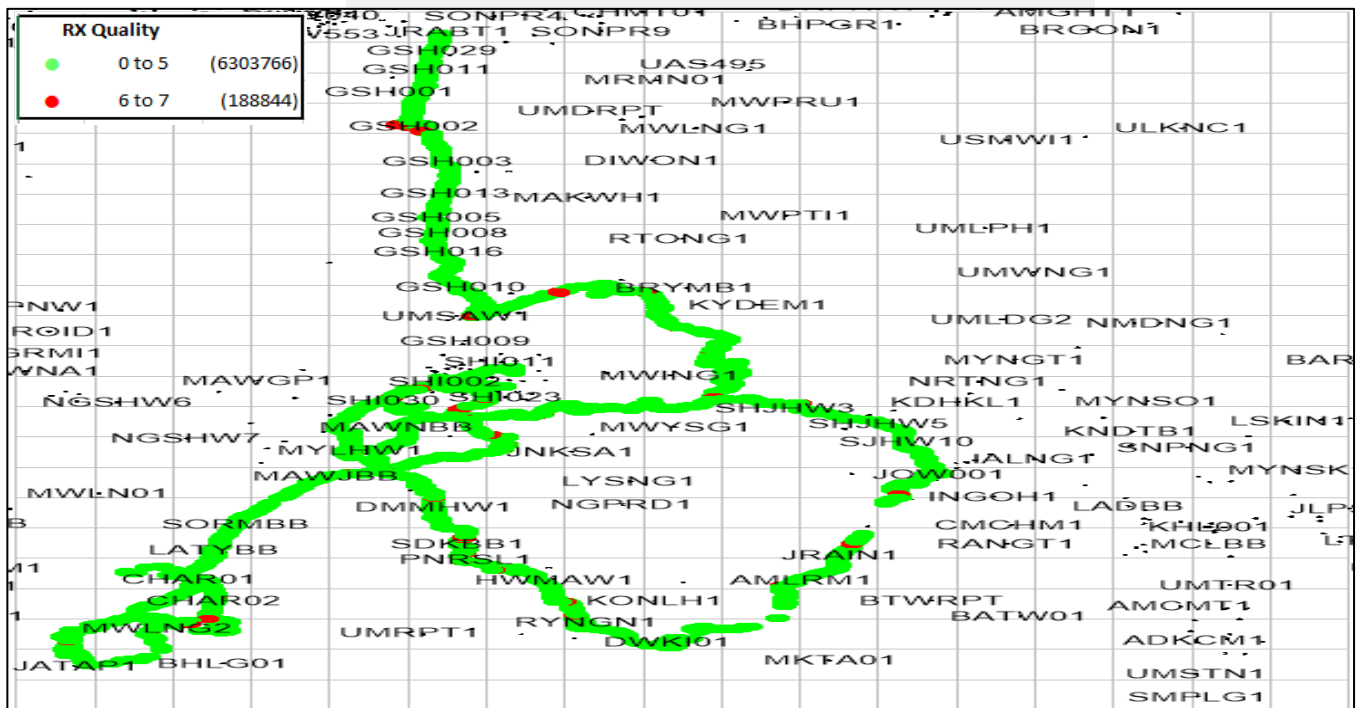


## II. Quality Details

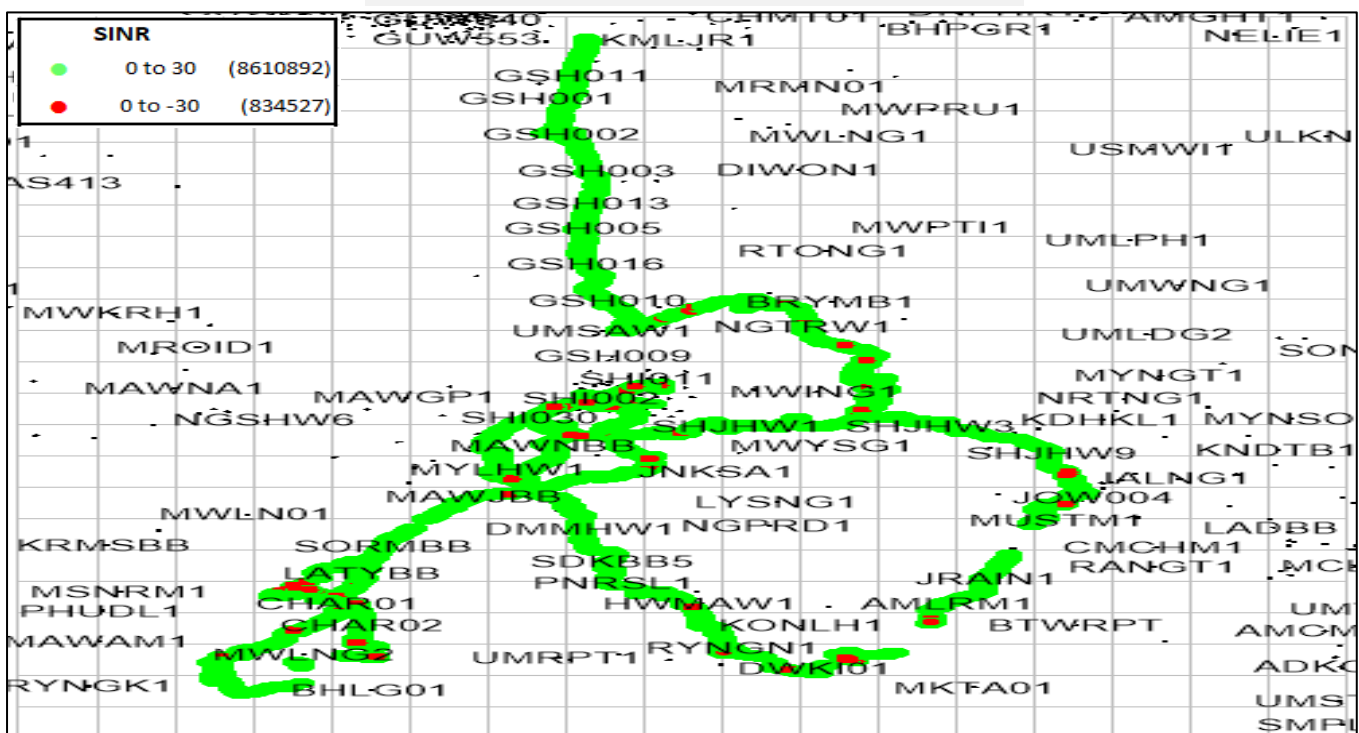
### Airtel

Technology	Rx Quality %
2G	97.09
4G	91.16

### 2G



### 4G

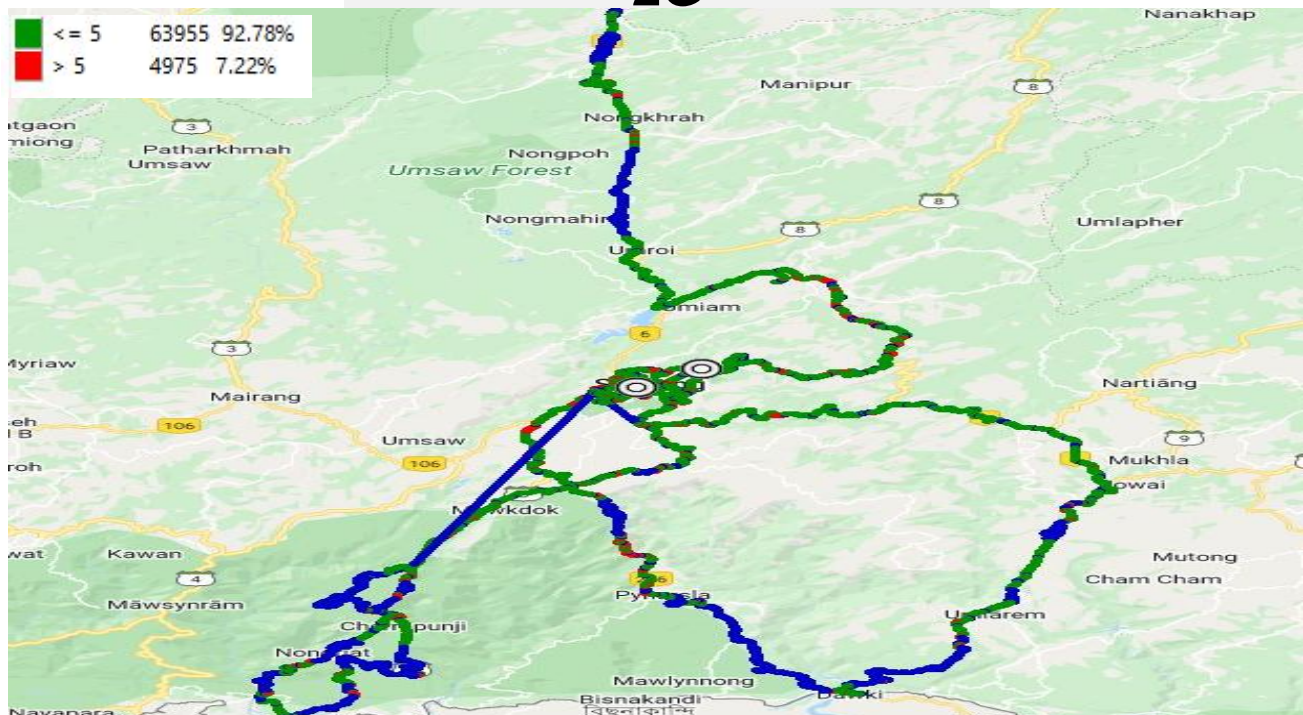


## II. Quality Details

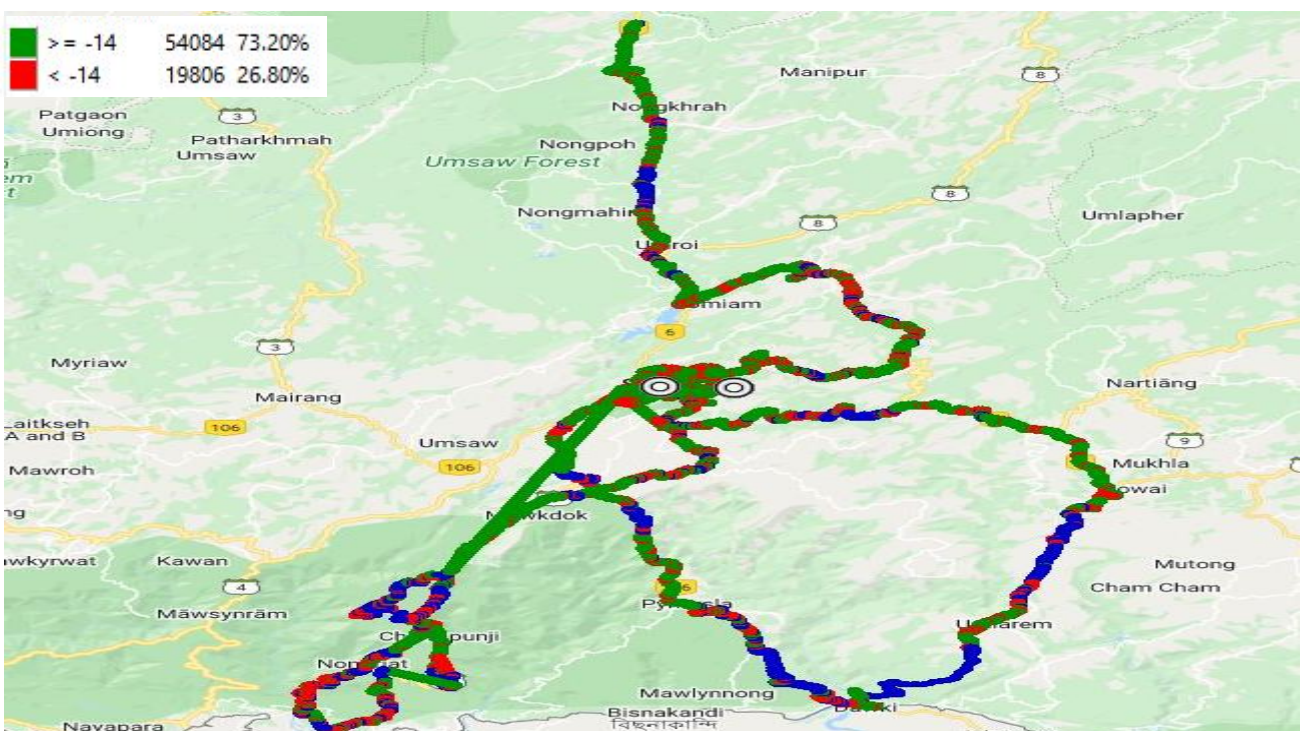
### BSNL

Technology	Rx Quality %
2G	92.78
3G	73.20

### 2G



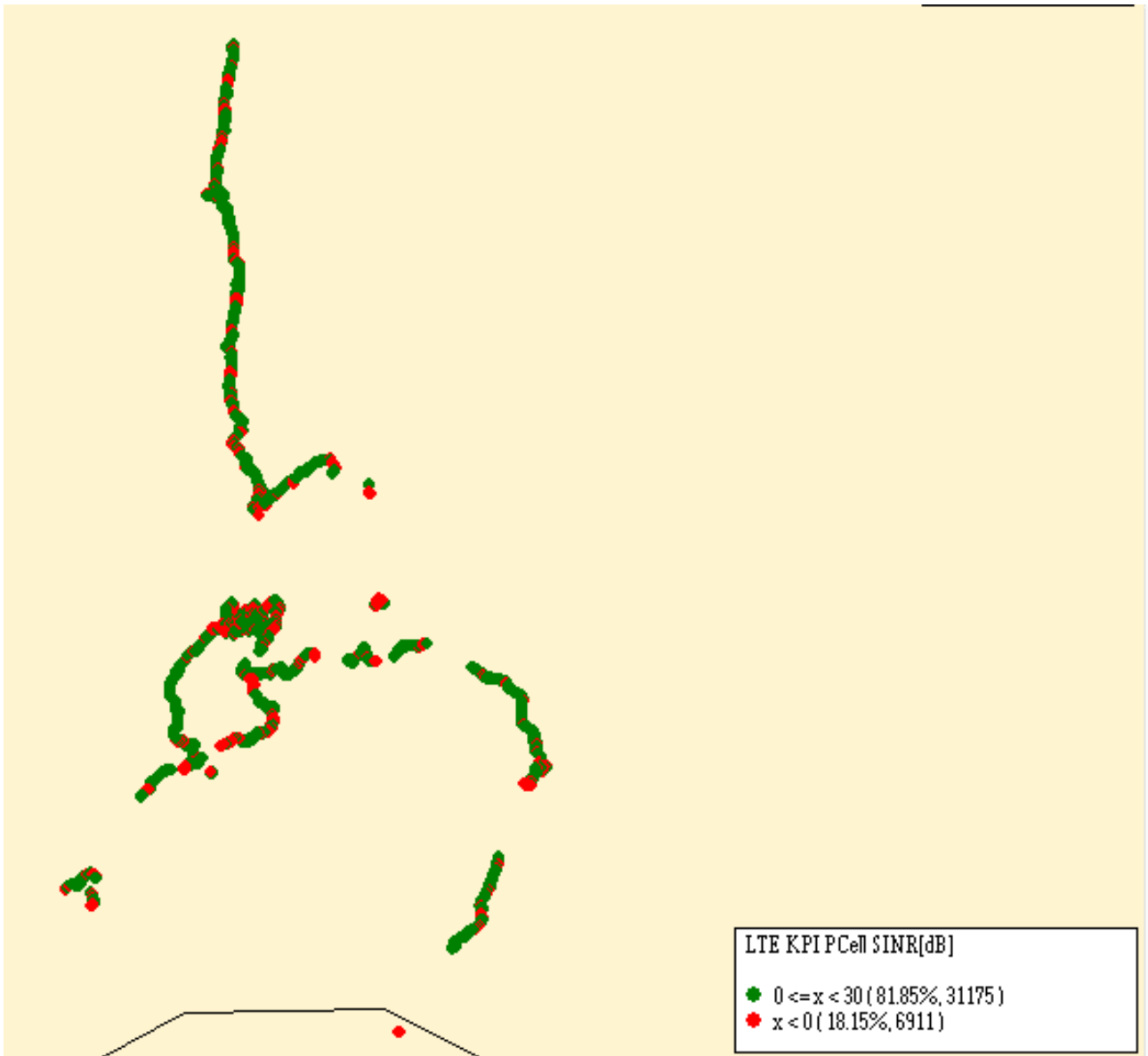
### 3G



## II. Quality Details

### JIO

Technology	Rx Quality %
VoLTE	81.85



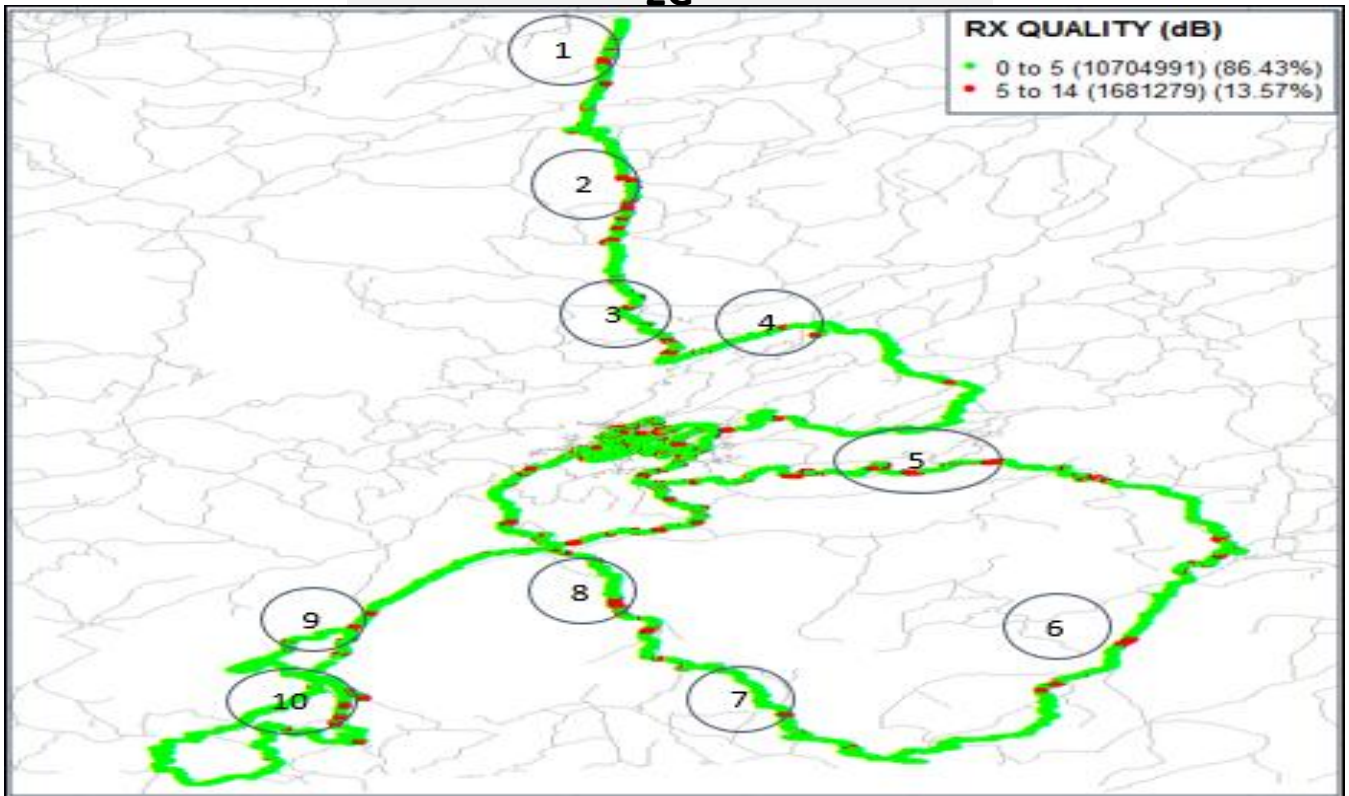


## II. Quality Details

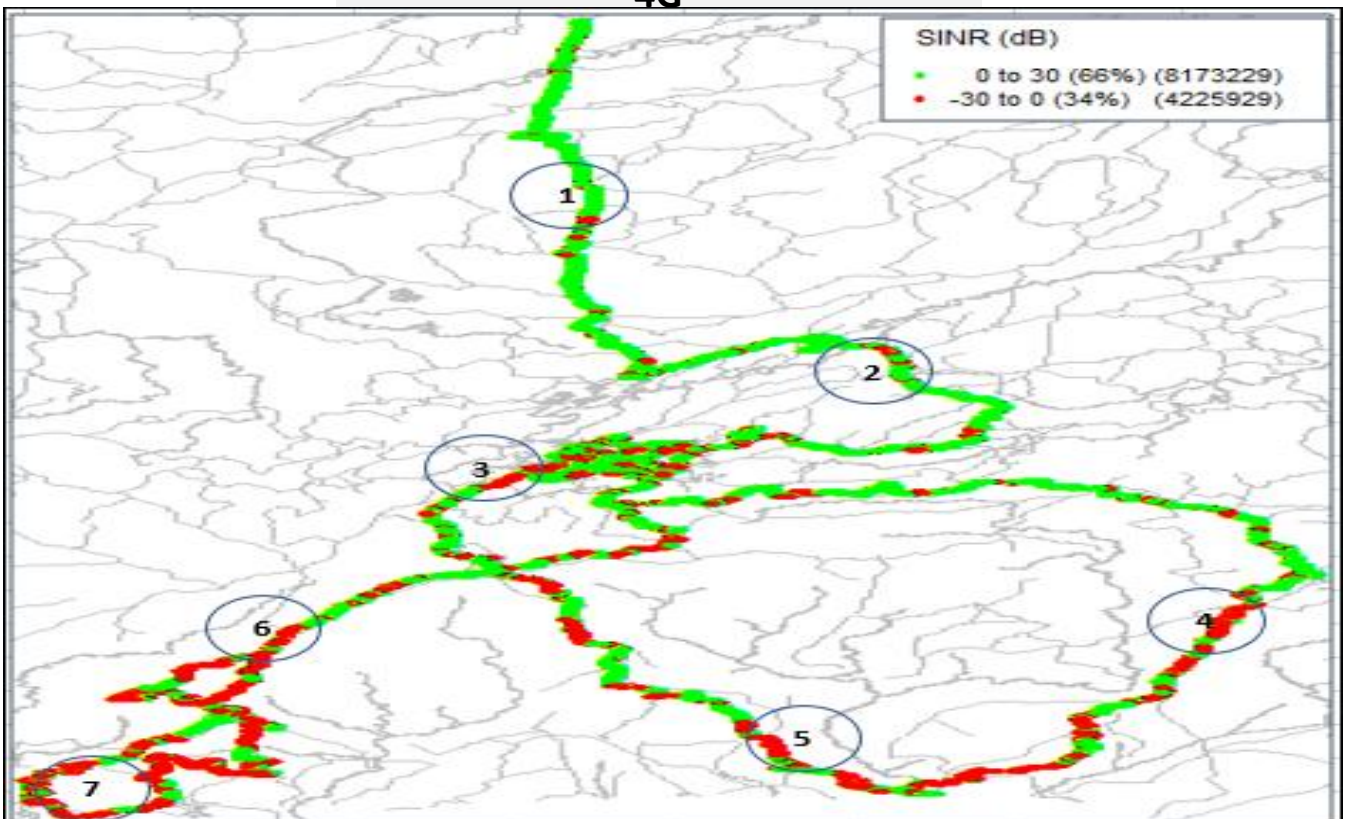
### VIL

Technology	Rx Quality %
2G	86.43
4G	66.0

### 2G



### 4G

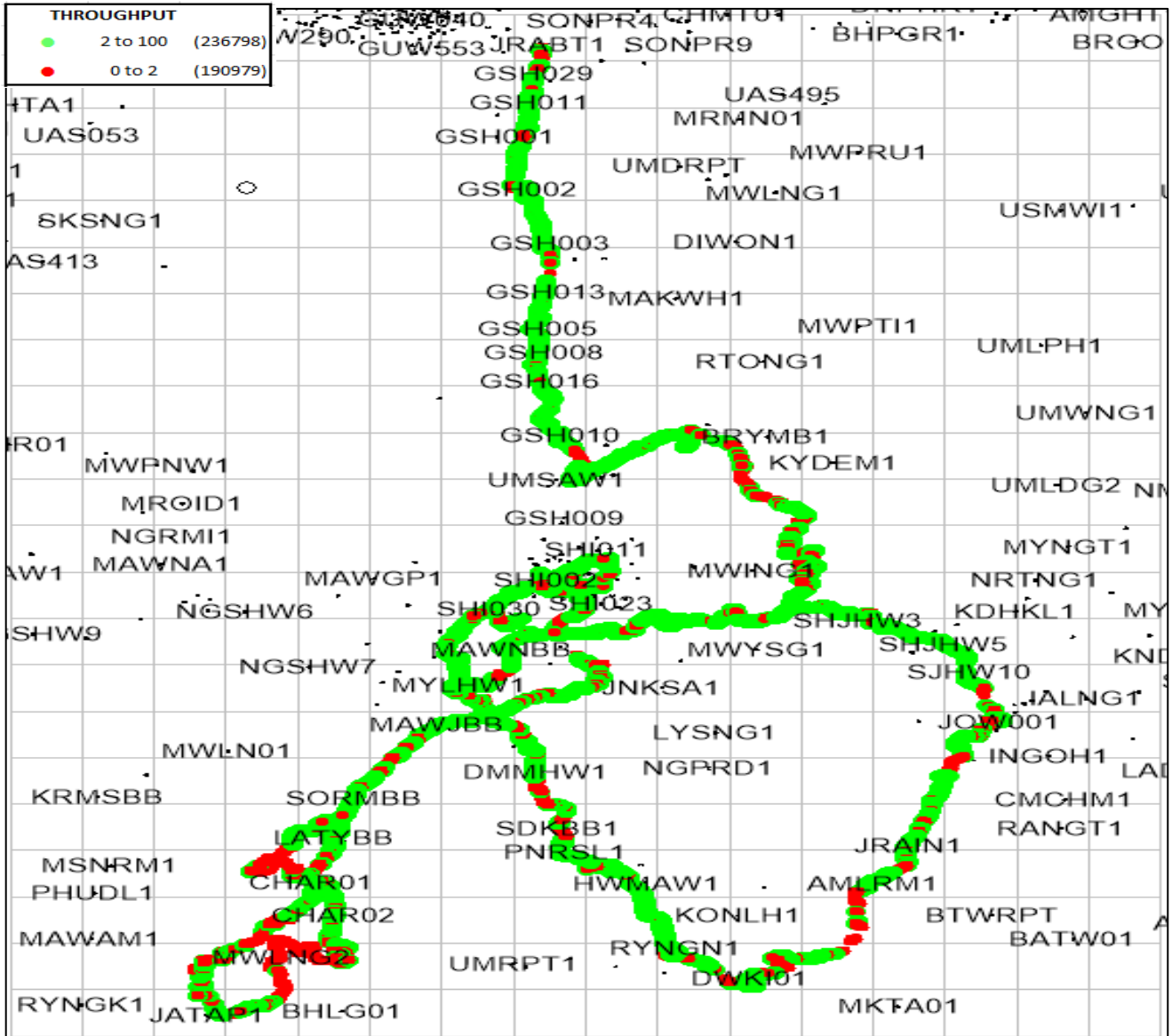


# IV. Dynamic Data Test- 4G DL Details

## Airtel

### Dynamic Data Testing Complete 574 Kms

Data KPIs - Overall	4G
Average Download Throughput (Mbps)	5.54



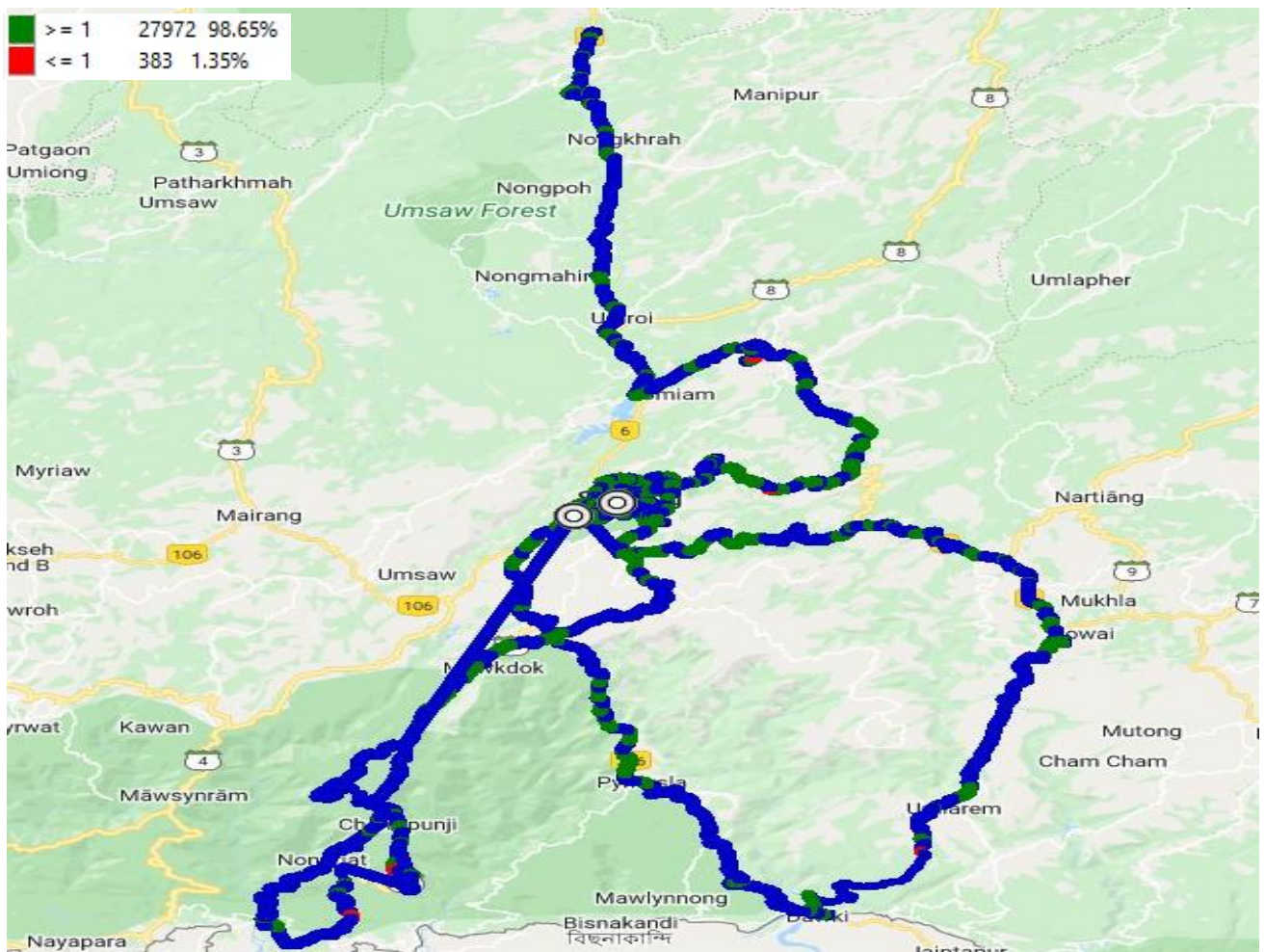
AVG. DOWNLOAD SPEED (Mbps)	5.54
% FILE TRANSFER COMPLETE	51.55
<b>DL throughput</b>	<b>Sample %</b>
0 to 1 Mbps	25.12%
1 to 2 Mbps	19.53%
2 to 5 Mbps	30.09%
5 to 10 Mbps	10.19%
>10 Mbps	15.07%
<b>Total</b>	<b>100%</b>

## IV. Dynamic Data Test- 3G DL Details

### BSNL

Dynamic Data Testing Complete 574 Kms

Data KPIs - Overall	3G
Average Download Throughput (Kbps)	1.25



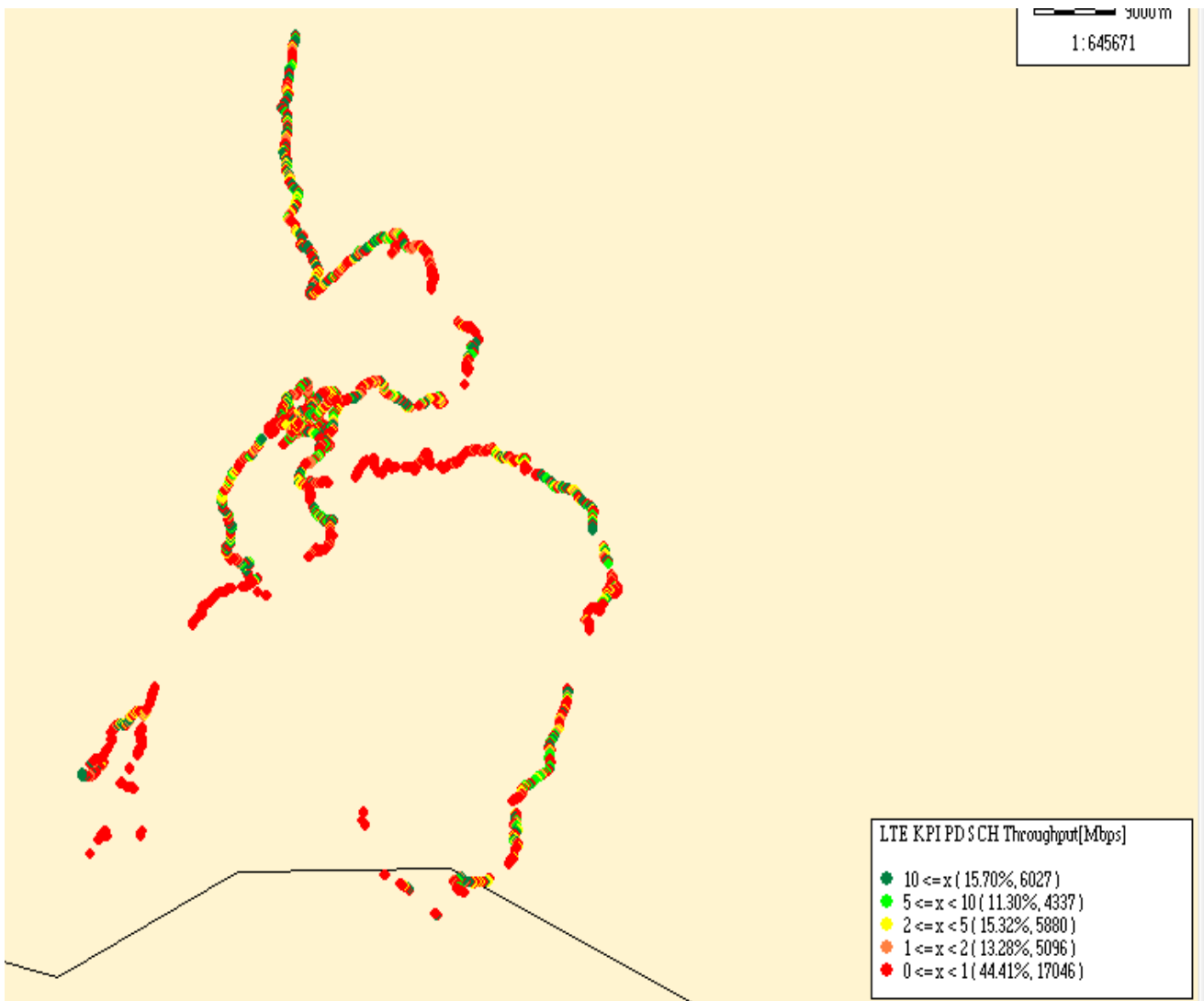
AVG. DOWNLOAD SPEED (Mbps)	1.25
% FILE TRANSFER COMPLETE	87.10
DL throughput	<b>Sample %</b>
0 to 0.5 Mbps	1.24%
0.5 to 1 Mbps	11.23%
1 to 2 Mbps	72.31%
2 to 5 Mbps	9.29%
>5 Mbps	5.92%
<b>Total</b>	<b>100%</b>

# IV. Dynamic Data Test- 4G DL Details

## Jio

### Dynamic Data Testing Complete 574 Kms

Data KPIs - Overall	4G
Average Download Throughput (Mbps)	4.23



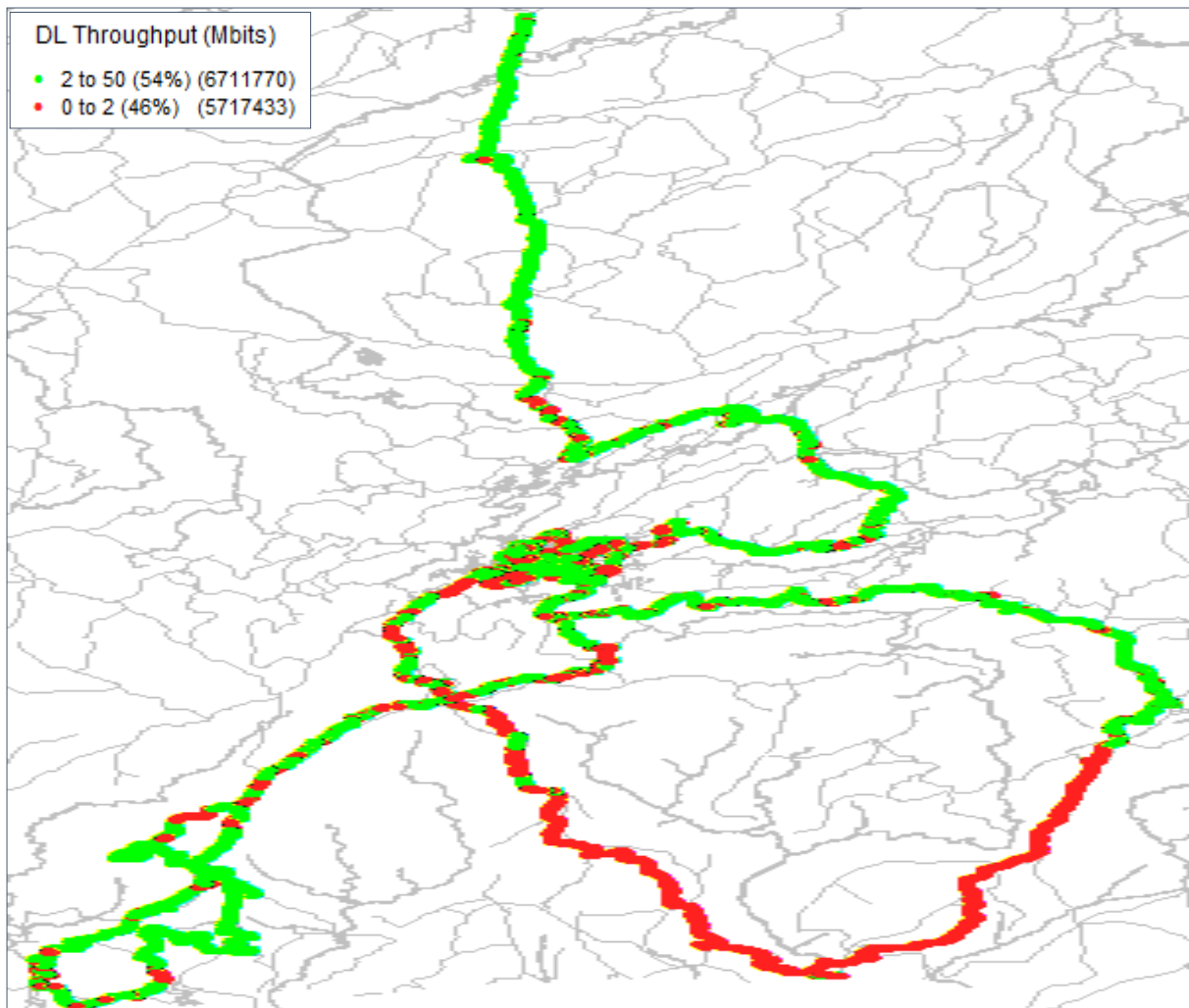
AVG. DOWNLOAD SPEED (Mbps)	4.232
% FILE TRANSFER COMPLETE	39.04
DL throughput	<b>Sample %</b>
0 to 1 Mbps	44.41
1 to 2 Mbps	13.28
2 to 5 Mbps	15.32
5 to 10 Mbps	11.3
>10 Mbps	15.7
<b>Total</b>	<b>100%</b>

# IV. Dynamic Data Test- 4G DL Details

## VIL

### Dynamic Data Testing Complete 574 Kms

Data KPIs - Overall	4G
Average Download Throughput (Mbps)	2.9



AVG. DOWNLOAD SPEED (Mbps)	2.9
% FILE TRANSFER COMPLETE	99.85
DL throughput	<b>Sample %</b>
0 to 1 Mbps	22%
1 to 2 Mbps	24%
2 to 5 Mbps	29%
5 to 10 Mbps	21%
>10 Mbps	4%
<b>Total</b>	<b>100%</b>

# V. TRAI MySpeed App

**DATA SPEED TESTING REPORT THROUGH TRAI MY SPEED APP** is given below as Table-1. Only those Snap Shots measurements of TRAI Myspeed App where download speed in 4G network is less than 5 Mbps and in 3G network is less than 2 Mbps is furnished in Table-1.

## DATA TESTING REPORT FROM TRAI MY SPPED APP

SL.NO	LOCATION	DATE	TIME	TSP	SIGNAL STRENGTH (-dbm)	DOWNLOAD SPEED(Mbps)	UPLOAD SPEED(Mbps)
1	JORABAT	01-03-2022	8:47 AM	VODAFONE	71	1.68	43.60
2	JORABAT (1)	01-03-2022	9:12 AM	BSNL	24	0.33	0.00
3	JORABAT (3)	01-03-2022	9:16 AM	BSNL	93	1.95	0.57
4	NONGPOH	01-03-2022	10:18 AM	VODAFONE	105	1.67	1.13
5	NONGPOH	01-03-2022	10:26 AM	AIRTEL	72	0.20	0.02
6	UMIUM LAKE	01-03-2022	11:22 AM	VODAFONE	95	0.58	0.59
7	UMIUM LAKE	01-03-2022	11:27 AM	AIRTEL	86	0.38	0.28
8	AIRPORT ARRIVAL (1)	01-03-2022	11:38 AM	BSNL	103	0.24	0.26
9	AIRPORT DEPARTURE	01-03-2022	11:42 AM	BSNL	91	0.99	0.30
10	AIRPORT	01-03-2022	11:43 AM	AIRTEL	101	0.12	0.23
11	AIRPORT (2)	01-03-2022	10:48 AM	BSNL	103	0.55	0.25
12	AIRPORT ARRIVAL GATE	01-03-2022	11:47 AM	AIRTEL	103	0.56	0.17
13	TOLL PLAZA	01-03-2022	12:07 PM	JIO	86	2.34	3.64
14	TOLL PLAZA	01-03-2022	12:22 PM	VODAFONE	116	0.44	1.62
15	TOLL PLAZA (1)	01-03-2022	12:22 PM	AIRTEL	97	0.25	0.13
16	TOLL PLAZA (2)	01-03-2022	12:21 PM	AIRTEL	100	0.17	0.35
17	LLM GATE	01-03-2022	1:09 PM	BSNL	93	0.63	0.45
18	LLM SHILLONG	01-03-2022	10:48PM	VODAFONE	108	1.74	3.89
19	LLM SHILLONG BACK	01-03-2022	1:57PM	AIRTEL	77	0.29	0.12
20	DR GORDON ROBERT HOSPITAL	01-03-2022	2:04PM	BSNL	87	0.63	1.37
21	GORDON ROBERT HOSPITAL (1)	01-03-2022	2:37PM	AIRTEL	102	0.23	0.39
22	GORDON ROBERT HOSPITAL (2)	01-03-2022	2:40PM	AIRTEL	93	0.29	0.01
23	CHIEF JUSTICE RESIDENCE	01-03-2022	2:57PM	BSNL	77	0.74	2.73
24	NEAR HOSPITAL	01-03-2022	3:05PM	VODAFONE	98	4.33	5.10
25	NEEPCO OFFICE	01-03-2022	3:25PM	BSNL	81	0.59	1.47
26	RAJ BHAVAN	01-03-2022	4:03PM	VODAFONE	61	2.26	15.04
27	SECRETARIAT	01-03-2022	4:09PM	VODAFONE	92	1.12	4.90
28	NEAR HIGH COURT	01-03-2022	4:11PM	VODAFONE	91	4.68	22.30
29	BSNL OFFICE (1)	01-03-2022	4:02PM	AIRTEL	79	0.19	0.23
30	RAJ BHAVAN	01-03-2022	4:09PM	AIRTEL	89	0.14	0.23
31	NEAR CIVIL HOSPITAL	01-03-2022	4:23PM	BSNL	79	1.63	1.72
32	HIGH COURT	01-03-2022	4:20PM	AIRTEL	95	0.08	0.27
33	CHIEF SECRETARIAT	01-03-2022	4:29PM	AIRTEL	75	0.07	0.06
34	WOODLAND HOSPITAL	01-03-2022	4:36PM	BSNL	83	1.06	1.03
35	CIVIL HOSPITAL	01-03-2022	4:37PM	JIO	64	2.05	0.53
36	CM RESIDENCE	01-03-2022	4:42PM	AIRTEL	99	0.29	0.21
37	FIRE BRIGADE NEAR BETHANY HOSPITAL	01-03-2022	4:46 PM	BSNL	73	1.21	1.50
38	CHILDREN'S HOSPITAL	01-03-2022	5:03PM	BSNL	91	0.19	1.54
40	WILLIE COMPLEX	01-03-2022	5:46PM	BSNL	95	0.15	0.01
41	LAITUMKHAH CATHEDRAL CHURCH	01-03-2022	6:20PM	BSNL	87	1.91	0.05
42	WOODLAND HOSPITAL	01-03-2022	6:20PM	AIRTEL	92	0.09	0.47
43	ICFAI UNIVERSITY SHILLONG	01-03-2022	6:35PM	AIRTEL	88	0.16	0.11
44	RJIL DAY 1END POINT LOCATION OF ROUTE 5	01-03-2022	7:25PM	JIO	64	4.79	3.34
45	CIVIL HOSPITAL	01-03-2022	7:34PM	AIRTEL	80	0.04	0.41
46	MAWRYNGKNENG	02-03-2022	11:47AM	AIRTEL	90	0.22	0.27
47	JOWAI PS	02-03-2022	11:51AM	BSNL	75	1.23	1.08
48	JOWAI POLICE STATION	02-03-2022	12:44PM	AIRTEL	85	0.22	0.24
49	INDIA -BANGLADESH BORDER TAMABIL	02-03-2022	12:50PM	JIO	79	0.14	0.21
50	INDIA -BANGLADESH BORDER TAMABIL	02-03-2022	01:49PM	BSNL	77	1.30	1.27
51	SBI AMLAREM	02-03-2022	01:50PM	AIRTEL	78	0.11	0.07
52	NEAR INDIA BENGLADESH BORDER	02-03-2022	02:08PM	VODAFONE	77	0.04	0.04
53	PYNUSULA	02-03-2022	02:57PM	JIO	79	2.62	0.01
54	NEAR INDIA BENGLADESH CHECK POST	02-03-2022	03:04PM	VODAFONE	96	0.39	0.66
55	NEAR INDIA BENGLADESH CHECK POST	02-03-2022	03:20PM	AIRTEL	100	0.23	0.20
56	PYNUSULA	02-03-2022	04:14PM	VODAFONE	88	1.15	22.43
57	PYNUSULA	02-03-2022	04:51PM	AIRTEL	81	0.39	0.37
58	LAITLYNGKOT	02-03-2022	05:48PM	AIRTEL	85	0.07	0.08
59	MYLIEI	02-03-2022	06:16PM	AIRTEL	108	0.19	0.14
60	RHINO HERITAGE MUSEUM	02-03-2022	06:56PM	AIRTEL	88	0.29	0.12
61	POLICE BAZAR POINT	02-03-2022	07:09PM	AIRTEL	75	1.02	3.63
62	DAY 3 STARTING POINT	03-03-2022	08:29AM	AIRTEL	99	0.15	0.01
63	ROUTE 1 END POINT	03-03-2022	10:05AM	AIRTEL	104	0.36	0.36
64	RAMKRISHNA MISSION	03-03-2022	10:29AM	AIRTEL	81	0.22	0.30
65	NIIT	03-03-2022	10:41AM	BSNL	95	1.60	1.22
66	NIIT	03-03-2022	10:45AM	AIRTEL	87	0.49	4.95
67	MAWSMAI CAVE	03-03-2022	10:50AM	AIRTEL	84	0.19	0.07
68	RAMKRISHNA MISSION	03-03-2022	11:29AM	VODAFONE	77	0.35	1.21
69	NIIT	03-03-2022	11:52AM	VODAFONE	83	0.86	1.49
70	MOSIMAI	03-03-2022	12:13PM	VODAFONE	75	3.61	3.77
71	SHELLA	03-03-2022	12:46PM	BSNL	79	0.83	0.35
72	SHELLA	03-03-2022	12:44PM	AIRTEL	102	2.57	0.36
73	ROUTE 3 END POINT	03-03-2022	02:21PM	AIRTEL	96	1.97	0.17
74	DAY 3 ROUTE 2 END POINT	03-03-2022	02:20PM	VODAFONE	115	3.08	0.18
75	LAST STOP OF ROUTE 4 DAY 3	03-03-2022	03:48PM	BSNL	99	0.56	0.38
76	DAY 3 END POINT	03-03-2022	03:46PM	AIRTEL	112	0.36	0.11
77	DAY 1 ROUTE 6	03-03-2022	03:55PM	JIO	109	2.50	6.87
78	DAY 3 ROUTH 3 END POINT	03-03-2022	04:12PM	VODAFONE	93	0.11	0.85
79	UPPER SHILLONG	03-03-2022	04:53PM	AIRTEL	92	3.48	3.41
80	DAY 3 ROUTE 5 END POINT	03-03-2022	08:08PM	VODAFONE	89	0.43	5.34
81	DAY 1 ROUTE 5 END POINT	03-03-2022	09:50PM	VODAFONE	97	3.29	13.80

## VI. Video Call Observations

•Observations of Regional Office, Kolkata on the Operator Assisted Drive Test and action to be taken by TSPs to improve the QoS-

### Video Call Testing -- Statistics

NO.OF LOCATIONS OBSERVED POOR VIDEO QUALITY & VIDEO FREEZE				
DAY/TSP	AIRTEL	BSNL	RJIO	VI
DAY -1 (01/03/2022)	5	7	7	2
DAY -2 (02/03/2022)	10	7	14	3
DAY -3 (03/03/2022)	2	3	2	3
NO.OF LOCATION VIDEO CALL DISCONNECT				
DAY/TSP	AIRTEL	BSNL	RJIO	VI
DAY -1 (01/03/2022)	21	10	9	12
DAY -2 (02/03/2022)	12	19	15	16
DAY -3 (03/03/2022)	13	13	10	9

### VIDEO CALL TESTING --3G & 4G NETWORKS—

**AIRTEL-** Video calls were disconnected several times and the Video picture quality was poor many times throughout the drive routes. There are many routes where 4G coverage is very poor or nil.

**BSNL-** Video calls were disconnected several times and the Video picture quality was poor many times throughout the drive routes. There are many routes where 3G coverage is very poor or nil.

**RJIO-** - Video calls were disconnected several times and the Video picture quality was poor many times throughout the drive routes. There are many routes where 4G coverage is very poor or nil.

**VIL-** Video calls were disconnected several times and the Video picture quality was poor many times throughout the drive routes. There are many routes where 4G coverage is very poor or nil.

## VI. Observations of RO, Kolkata

### •Observations of Regional Office, Kolkata on the Operator Assisted Drive Test and action to be taken by TSPs to improve the QoS-

#### AIRTEL

Rx Quality (SINR -91.16%) in 4G network does not meet the benchmark (95%).

Average download data speed (4G network- Locked mode) is 5.54 Mbps throughout the drive test route.

Video call got freezed and disconnected many times from day1 to day3. Video call got freezed and disconnected from Jorabat to Shilong Airport, and Airport to Dr H Gordon Roberts Hospital on Jaiaw Chapel Road via on Shillong Bypass Road-Diengpasoh-Mawdiangdiang. Video call got disconnected near Lumshyiap, Shillong Jowai Highway, Mustem Jainta Hills, Dawki, Latinkot, Mawjrong, Cherapunjee, Jatap Bhollaganj etc. 4G coverage between Amlarem and Dawki- India Bangladesh Check Post is not satisfactory for all the TSPs

Airtel at Raj Bhawan 4G D/L and U/L is extremely poor (D/L 0.14mbps) and 4G coverage is good but speed is extremely poor (D/L -0.63mbps) at IIM Shillong.

Airtel has been asked to take necessary action including software/ hardware optimization to improve the Rx Quality (SINR), Video calls disconnections, poor Video quality and poor coverage/ download throughputs on the drive test routes and at all important locations.

An action taken report is to be submitted by 20.06.2022

#### BSNL

Drop Call Rate (2G-5.64% & 3G-5.94%), Block Call Rate (2G-4.88% & 3G-7.97%), Rx Quality (2G-92.78%, 3G-72.0% & 3G-73.20 %) and CSSR (94.06%) do not meet the benchmarks.

Average download data speed (3G network- Locked mode) is 1.25 Mbps throughout the drive test route.

Video call got freezed and disconnected several times from day1 to day3. 3G coverage is extremely poor in between Jorabat to Shilong Airport, Madanrting to Mawblei, Laitkor (Ksehbilat) to Lad-Smit, Sohryngkham to Mawryngkeng, Jowai to Amlarem, Pomshutia and Pynursla, Laitlyngkot to Nongsawing, Smit to Laitlyngkot, Mawsmmai to LadSohbar Rd, Shella to Nongriat to Mawmluh .

BSNL does not have 3G sites along the route between Amlarem and Dawki- India Bangladesh Check Post, and 3G coverage between Dawki- India Bangladesh Check Post and Pynursla is not satisfactory.

BSNL has been asked to take necessary action including software/ hardware optimization and installing new sites to improve coverage, quality , the above KPIs, Video calls disconnections, poor Video quality and download throughputs on the drive test routes and at all important locations.

An action taken report is to be submitted by 20.06.2022.



## VI. Observations of RO, Kolkata

### •Observations of Regional Office, Kolkata on the Operator Assisted Drive Test and action to be taken by TSPs to improve the QoS-

#### RJIO

Block Call Rate (5.3%), CSSR (94.69%) & Rx Quality (SINR-81.85%) in 4G network do not meet the benchmarks.

Average download data speed (4G network- Locked mode) is 4.23 Mbps throughout the drive test route.

Video Call got frozen and disconnected many times from Jorabat to Shilong Airport and Airport to Dr H Gordon Roberts Hospital on Jaiaw Chapel Road via on Shillong Bypass Road-Diengpasoh-Mawdiangdiang. Video Call got disconnected near SP Office, Nongmalki Road, Malki, Demthring, Nongthymmai, Mawryngkneng, Sohra-Laitkynsew Road, Wahkdait, Sawmer, Lummawbah, Sohryngkhan, Sohra-Shella Road, Laban etc.

4G coverage between Amlarem and Dawki- India Bangladesh Check Post is not satisfactory for all the TSPs.

RJio 4G upload speed at High court is extremely poor (speed is 0.65mbps)

RJIO has been asked to take necessary action including software/ hardware optimization and installing new sites to improve the above KPIs, Video calls disconnections, poor Video quality and poor coverage/ download throughputs on the drive test route and at all important locations.

An action taken report is to be submitted by 20.06.2022.

#### VIL

Rx Quality (SINR- 66.00%) in 4G, and Rx Quality(86.43) in 2G do not meet the benchmarks (95%).

Average download data speed (4G network- Locked mode) is 2.90 Mbps throughout the drive test route.

Video got frozen and disconnected many times from Jorabat to Shilong Airport and Airport to Dr H Gordon Roberts Hospital on Jaiaw Chapel Road via on Shillong Bypass Road-Diengpasoh-Mawdiangdiang. 4G coverage between Jowai Police Station to SBI Amlarem and Dawki to India Bangladesh Check Post and Pynursla is not satisfactory.

Poor 4G coverage/ No coverage and Video call got disconnected in between Bhoirymbong to Diengpasoh, Jowai Market to Mawpyut , Mawpyut to Dawki market, Dawki to Pynursla, Bakur to Mawriang, Smit to Laitlyngkot, Umtyngar to Sohrarim, Mawmluh to Khalorkhar and Disong to Nongnong, Cherapunji to Shella Bholagunj, Laban Hotel etc.

VI has been asked to take necessary action including software/ hardware optimization and installing new sites to improve the coverage and Rx Quality in 2G & 4G, Video calls disconnections, poor Video quality and poor coverage/ download throughputs on the drive test routes.

An action taken report is to be submitted by 20.06.2022.