

# Operator Assisted Drive Test Report

## WEST GODAVARI SSA

JULY 2024

(RO, HYDERABAD)

**Key Performance Indicators:** All TSPs have met the Drop Call Rate (DCR) benchmark of 2%. All TSPs have met the Call Setup Success Rate (CSSR) of 95%. All TSPs have met the Rx Quality of 95% except Airtel & VIL VoLTE.

The Operator Assisted Drive Test (OADT) has been carried out by TRAI RO Hyderabad with the help of Service Providers in West Godavari and surrounding areas Eluru, DwarakaTirumala, Jaggareddgudem, Bhimadolu, Prathipadu, Nidadavulu, Palakollu, Bhimavaram, Mogalturu, Narasapur from 9:00 AM to 8:00 PM during 2<sup>nd</sup> to 5<sup>th</sup> July 2024. The drive test covered drive route of 528KMs & 6 hotspot over a period of 4 days. Approximately 652 calls were made for each of the 7 networks: Three 2G networks, One 3G network and Three LTE network covering four TSPs.

Overview

Voice  
Summary

Data  
Summary

# Overview

TRAI Hyderabad conducted Operator Assisted Drive Test from 2<sup>nd</sup> to 5<sup>th</sup> July 2024 covering various locations in West Godavari surrounding regions Eluru,,Dwaraka Thirumala,Bhimavaram,Narasapur.The performance of Airtel, BSNL, Jio and Vodafone Idea Limited were monitored across various technologies (2G, 3G, and 4G). The test results obtained from these drive tests were utilized to assess the network quality for Voice and Data services in terms of

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

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

## Drive Test Details :

**Voice Tests:** Calls were made for 90 sec duration with wait time of 10 sec between calls in all technologies. The drive test covered a drive route of approximately 528KMs over a period of 4 days from 2<sup>nd</sup> to 5<sup>th</sup> July '2024. Approximately 652 calls were made for each of the 7 networks: three 2G (Lock Mode) networks, one 3G (Dual mode) networks and three VoLTE network covering 4 unique TSPs.

## Data Tests:

1.Dynamic data test was conducted for 528 kms over a period of 3 days for download throughput for 3G & 4G technologies.

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

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

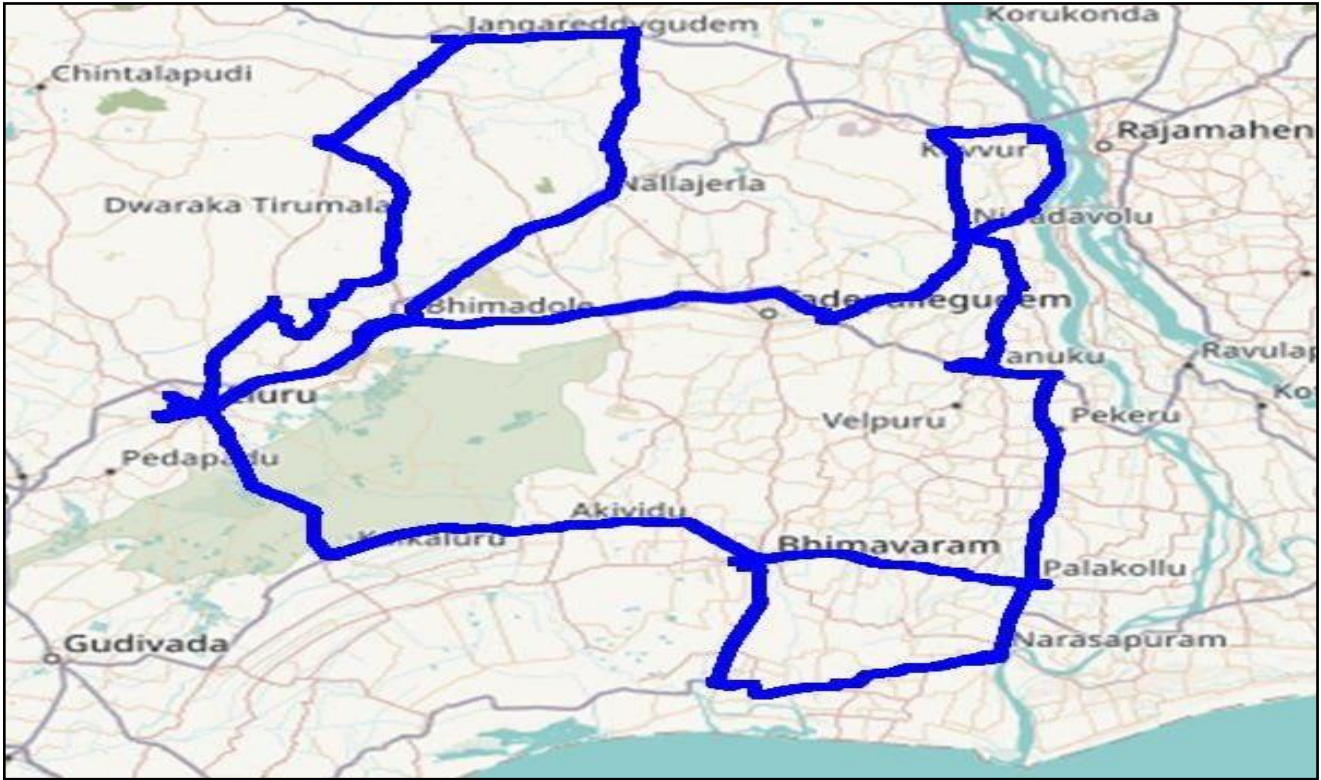
\* 3G KPI's which are calculated from UE in Dual Mode (2G & 3G) includes samples and events of 2G.

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

Service	Specifications
Download	2G (Locked) - 500KB, 3G (Dual) - 20 MB, 4G (Free) - 40 MB
Upload	2G (Locked) - 100KB, 3G (Dual) - 5 MB, 4G (Free) - 10 MB
Web Browsing	3 links of e/m commerce website www.amazon.in, www.flipkart.com and www.myntra.com
Video Streaming	130 Sec Clip
Latency	32 Bytes on www.google.com

# Overview

## Voice & Dynamic Data Test Drive Route



### Day-1 Areas Covered -Eluru-Jangareddygudem-Nallajerla-Eluru

Eluru	Munduru
Munduru	Challachintalapudi
Challachintalapudi	Dwaraka Tirumala
Dwaraka Tirumala	Jangareddy gudem
Jangareddy gudem	Jangareddy gudem Bus station
Jangareddy gudem Bus station	Koyyalagudem
Koyyalagudem	Nallajerla
Nallajerla	Bhimadolu
Bhimadolu	Eluru

### Day-2 Eluru-Prathipadu-Nidadavolu-Kovvuru-Tanuku-Narsapur

Eluru	Bhimadolu
Bhimadolu	Kaikaram
Kaikaram	Prathipadu
Prathipadu	Nidadavole
Nidadavole	Chagallu
Chagallu	Kovvur
Kovvur	Vijjeswaram
Vijjeswaram	Tanuku
Tanuku	Palakollu
Palakollu	Narsapur

### Day-3 Narsapur – Bhimavaram – Kottata – Mogalturu – Narsapur

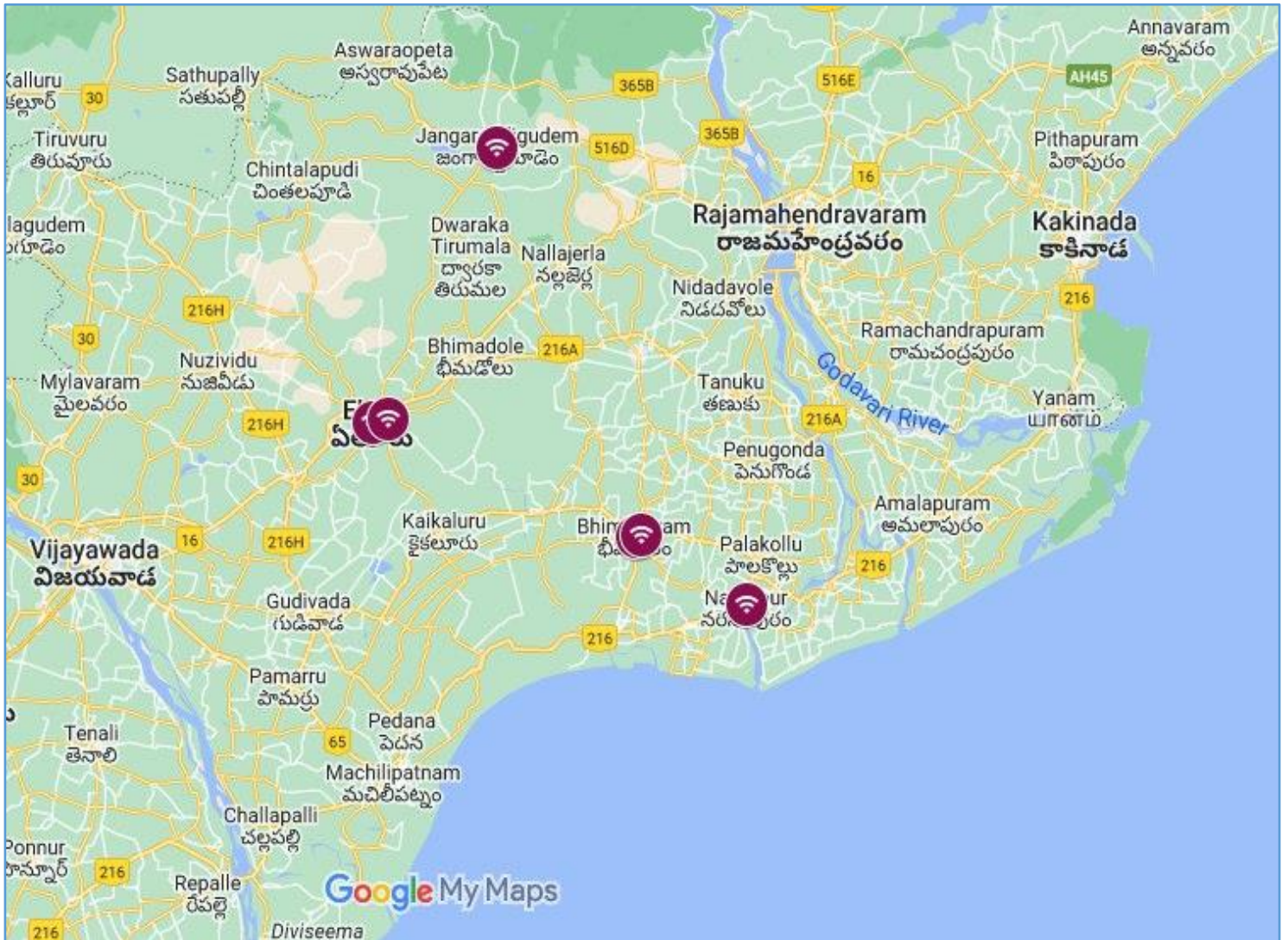
Narsapur	Palakollu
Palakollu	Bhimavaram
Bhimavaram	Nagidipalem
Nagidipalem	Pathapadu
Pathapadu	Kottata
Kottata	Mogalturu
Mogalturu	Narsapur

### Day-4 Bhimavaram – Akivedu – Kaikaluru – Eluru

Bhimavaram	Undi
Undi	Akivedu
Akivedu	Kaikaluru
Kaikaluru	Munugunuru
Munugunuru	Eluru



## Data Service Test- Static Locations



### 6 Static Locations

Jangareddy Gudem Bus stand

Bhimavaram Railway station

Bhimavaram Bus stand

Narsapur Railway station

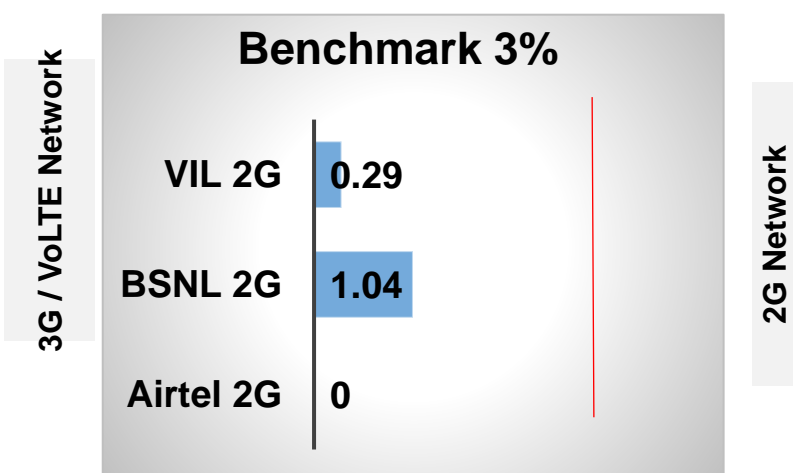
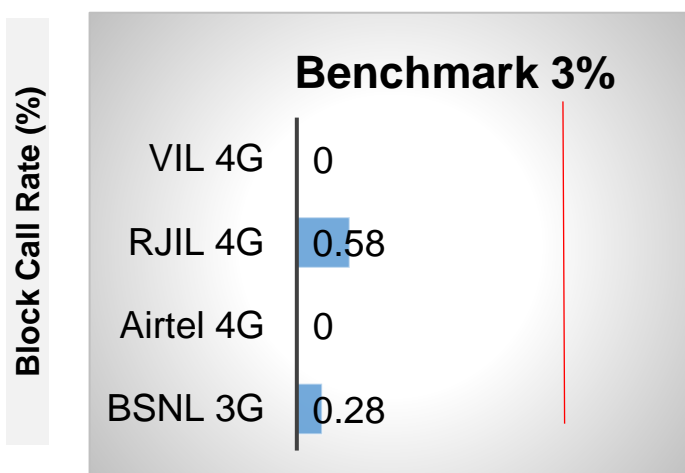
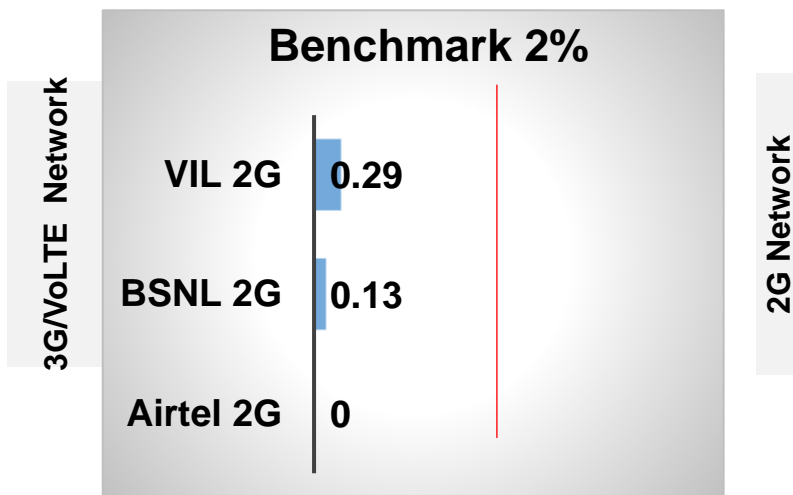
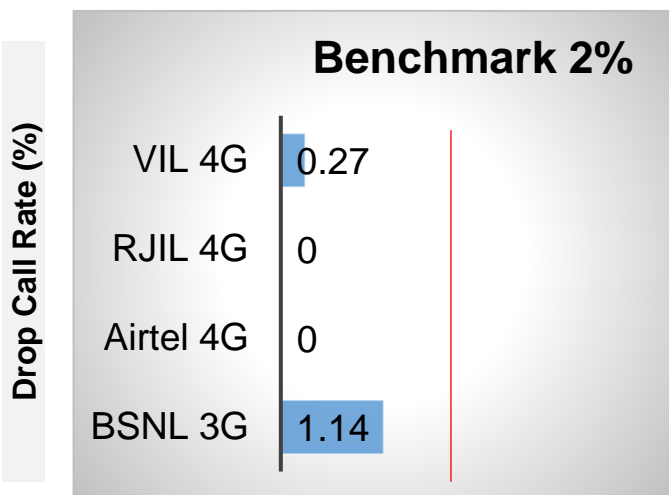
Eluru Railway station

Eluru Govt Hospital

# Voice Calls

## Key Observations

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



KPIs	2G			3G	VoLTE		
	Airtel	BSNL	VIL	BSNL	Airtel	JIO	VIL
<b>Drop Call Rate %</b>	0	0.13	0.29	1.14	0	0	0.27
<b>Block Call Rate %</b>	0	1.04	0.29	0.28	0	0.58	0

- All TSPs have met the 2% QOS benchmark of Drop Call Rate (DCR%).
- Call Block Rate (CBR%) benchmark of 3% was achieved by all TSP's.

# Voice Calls

## Key Observations

### Coverage

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

TSPS	2G		
	Airtel	BSNL	VIL
Coverage %	75.84	84.7	82.09

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

TSP	3G	VoLTE ( $\geq$ -110 dBm)		
	BSNL	Airtel	JIO	VIL
Coverage %	85.3	96.9	97.14	95.33

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

TSP	3G	VoLTE		
	BSNL	Airtel	JIO	VIL
Time spent %	44.5	100	100	99.91

# Data Services Static

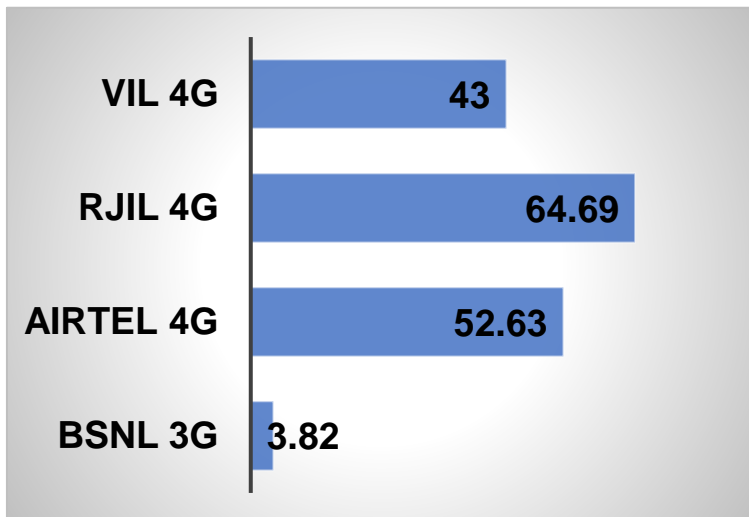
**Key Observations  
(Average of 6  
Hotspots)**

Data was tested at 6 locations .Following services were tested: Data Download/Upload, Latency (www.google.com), and Web browsing delay (Flipkart, Amazon, Myntra)

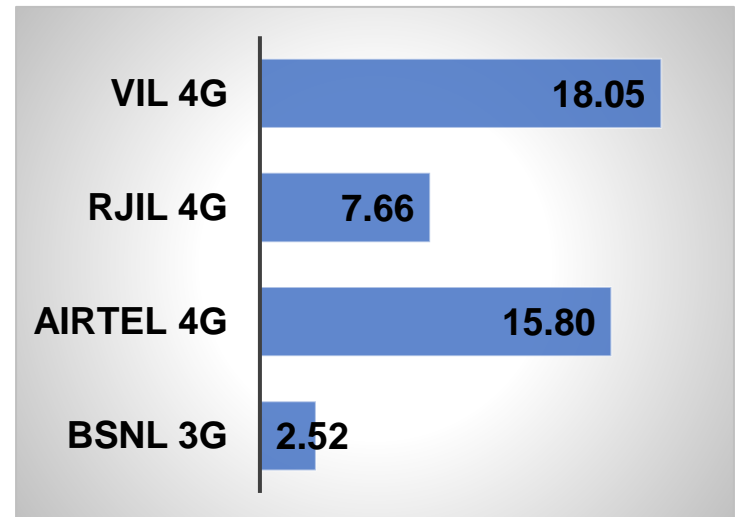
## Data Download and Upload Performance (Mbps)

3G/4G Network:

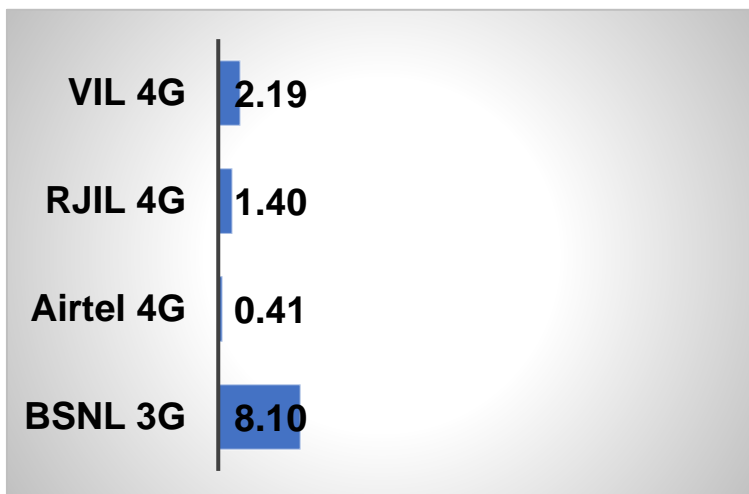
### Download Throughput (Mbps)



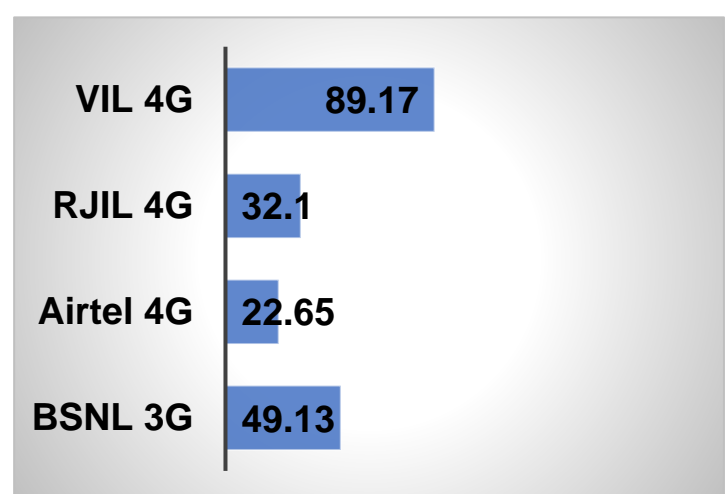
### Upload Throughput (Mbps)



### Web Browsing delay (Sec)



### Latency (ms)



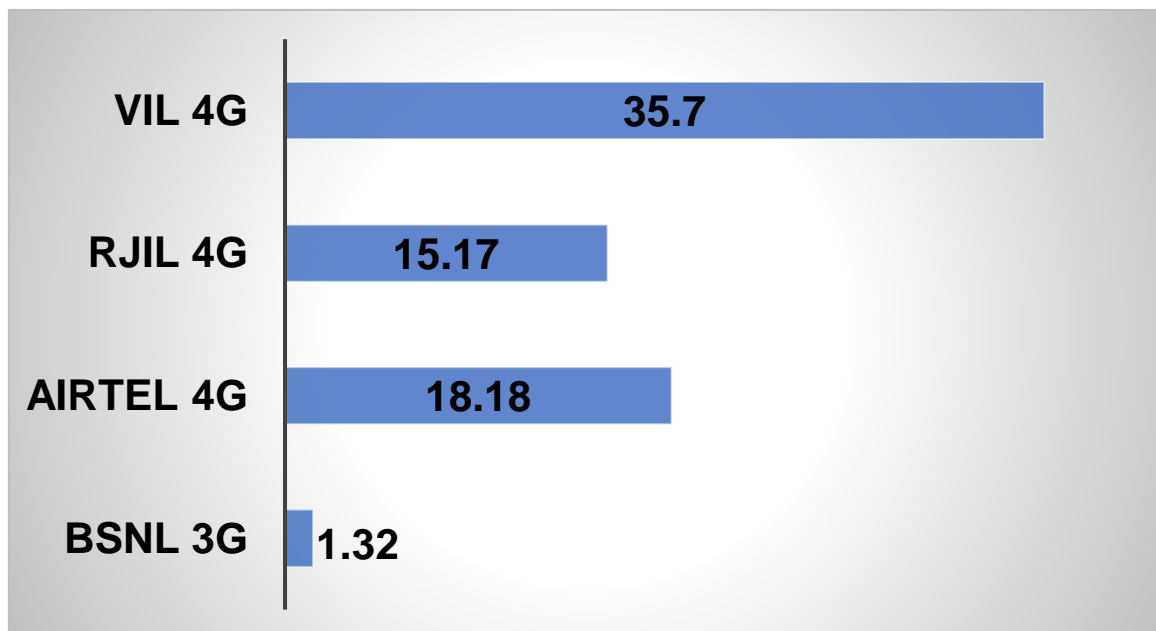
# Data Services Dynamic

**Key Observations**

Dynamic Data was tested, Download Throughput was tested.

## Data Download Performance (kbps) - Dynamic

3G/4G Network:



Data Services Dynamic	3G / 4G			
	BSNL 3G	Airtel 4G	JIO 4G	VIL 4G
Download throughput in Mbps	1.32	18.18	15.17	35.7



# Summary

## SSA Level Summary-Voice

Voice Calls	2G		
	Airtel	BSNL	VIL
Call attempts	670	768	687
Block call rate %	0	1.04	0.29
CSSR %	100	98.96	99.71
Drop call rate %	0	0.13	0.29
Mobility HOSR %	97.69	95.14	99.78
RX Quality %	95.53	97.4	96.80

Voice Calls	3G	VoLTE		
	BSNL	Airtel	JIO	VIL
TSP ( For 3G)				
Call attempts	349	698	1203	723
Block call rate %	0.28	0	0.58	0.00
CSSR %	99.72	100	99.41	100
Drop call rate %	1.14	0	0	0.27
Mobility HOSR %	100	99.91	98.76	99.78
RX Quality %	96.3	93.83	97.99	88.59

# Summary

## SSA Level Summary- (Average of 6 hotspots)- Data Services

Data Services Static	2G		
	Airtel	BSNL	VIL
Download throughput in Kbps	189.3	114.0	112.05
Upload Throughput in Kbps	87.90	132.01	100.81
Web browsing delay in second	3.982	61.64	12.13
Latency in (msec)	144.7	123.51	188.08

Data Services Static	3G / 4G			
	BSNL 3G	Airtel 4G	JIO 4G	VIL 4G
Download throughput in Mbps	3.82	52.63	64.69	43
Upload Throughput in Mbps	2.52	15.8	7.66	18.05
Web browsing delay in second	8.10	0.41	1.4	2.19
Latency in (msec)	49.13	22.65	32.1	89.17

Jangareddy Gudem Bus stand	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	213.3	47.49	93.10
Upload Throughput (kbps)	127.8	68.73	101.00
Web Browsing Delay (sec)	3.12	85.26	12.50
Latency (msec)	151.4	127.42	207.00

Bhimavaram Railway Station	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	181.7	56.01	95.30
Upload Throughput (kbps)	82.5	100.64	97.64
Web Browsing Delay (sec)	2.7	108.21	13.60
Latency (msec)	144.6	120.67	197.4

Bhimavaram Bus stand	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	181.8	49.77	101.2
Upload Throughput (kbps)	97.1	91.99	98.54
Web Browsing Delay (sec)	3.99	53.39	12.20
Latency (msec)	144	135.98	211.70

Narsapur Railway Station	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	148.3	169.22	145.00
Upload Throughput (kbps)	26.0	90.78	112.00
Web Browsing Delay (sec)	4,60	57.89	9.80
Latency (msec)	178.8	116.66	187.40

Eluru Railway Station	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	247.7	170.72	122.50
Upload Throughput (kbps)	112.8	84.62	139.20
Web Browsing Delay (sec)	6	34.41	13.10
Latency (msec)	135.8	121.53	168.00

Eluru Govt. Hospital	2G		
	Airtel	BSNL	VIL
Download Throughput (kbps)	163.1	190.81	115.20
Upload Throughput (kbps)	81.3	85.10	56.48
Web Browsing Delay (sec)	4.1	30.71	11.60
Latency (msec)	113.6	117.65	157

# Data Services static

SSA Level  
Summary(contd.)

JangareddyGudem Busstand	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	2.29	43.86	94.78	24.18
Upload Throughput (Mbps)	1.78	12.46	7.12	14.84
Web Browsing Delay (sec)	19.22	0.25	1.70	2.30
Latency (msec)	47.73	26.4	45	98.00

Bhimavaram Railway Station	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	1.61	85.16	40.64	45.05
Upload Throughput (Mbps)	1.47	21.62	5.12	19.01
Web Browsing Delay (sec)	17.98	0.44	1.50	2.00
Latency (msec)	83.40	19.2	19	78.00

Bhimavaram Bus stand	3G	4G		
	Airtel	Airtel	JIO	VIL
Download Throughput (Mbps)	2.03	33.06	46.05	55.65
Upload Throughput (Mbps)	2.11	11.12	10.45	10.86
Web Browsing Delay (sec)	3.91	1.8	1.19	2.98
Latency (msec)	44.85	29.6	28	121

Narsapur Railway Station	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	7.73	32.14	91.04	43.06
Upload Throughput (Mbps)	2.95	13.74	9.01	23.05
Web Browsing Delay (sec)	2.08	0.61	1.31	1.98
Latency (msec)	47.11	19.3	33	92.00

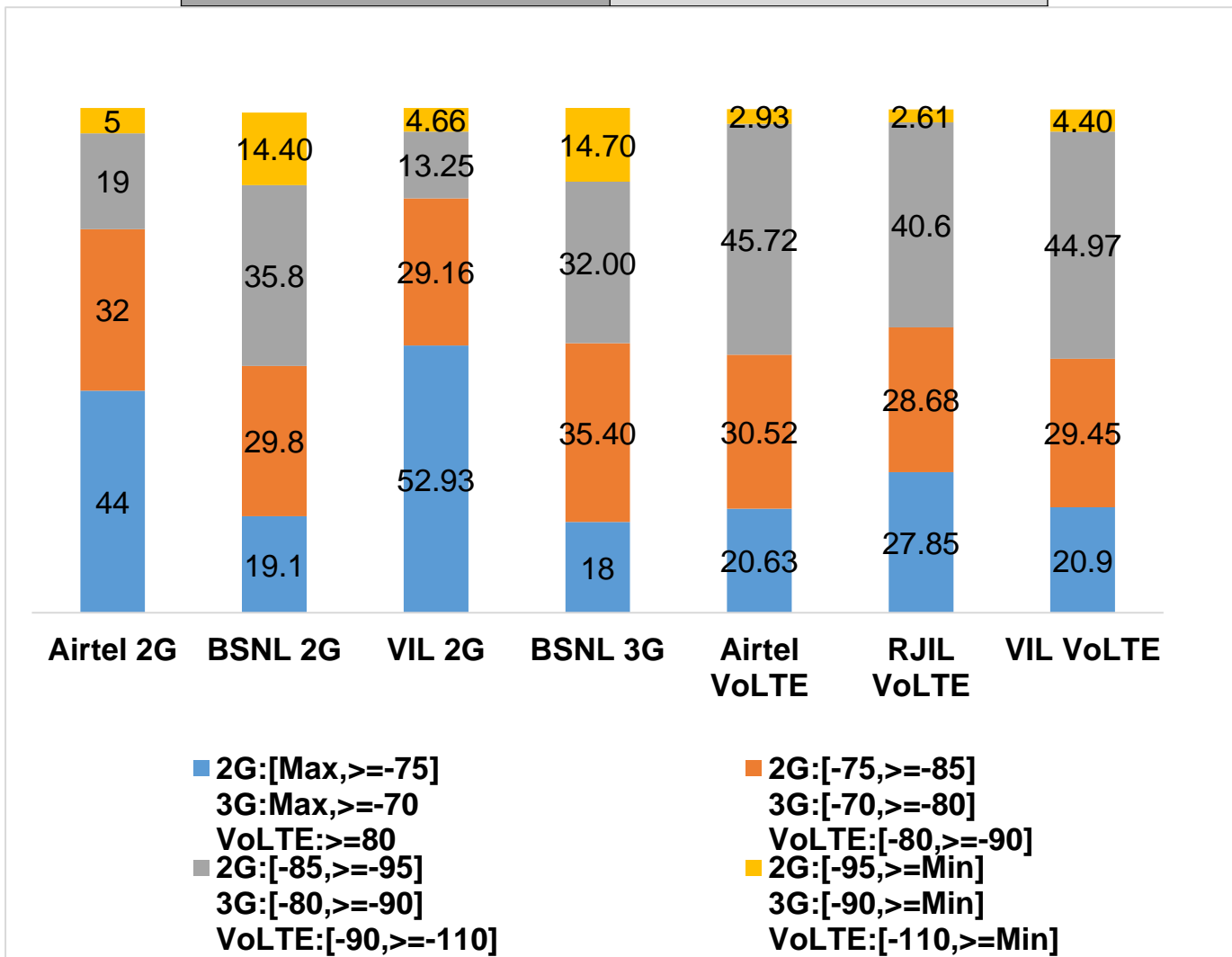
Eluru Railway Station	2G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	4.48	32.04	51.5	40.28
Upload Throughput (Mbps)	3.37	12.46	7.12	20.36
Web Browsing Delay (sec)	3.34	0.35	1.48	2.00
Latency (msec)	35.62	21.3	37	72.00

Eluru Govt. Hospital	3G	4G		
	BSNL	Airtel	JIO	VIL
Download Throughput (Mbps)	4.81	32.12	64.17	49.80
Upload Throughput (Mbps)	3.49	13.14	7.16	20.17
Web Browsing Delay (sec)	2.08	0.36	1.25	1.90
Latency (msec)	36.08	20.1	31	74.00

# 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	75.84
BSNL 2G	84.7
VIL 2G	82.09
BSNL 3G	85.3
Airtel VoLTE	96.9
JIO VoLTE	97.14
VIL VoLTE	95.33



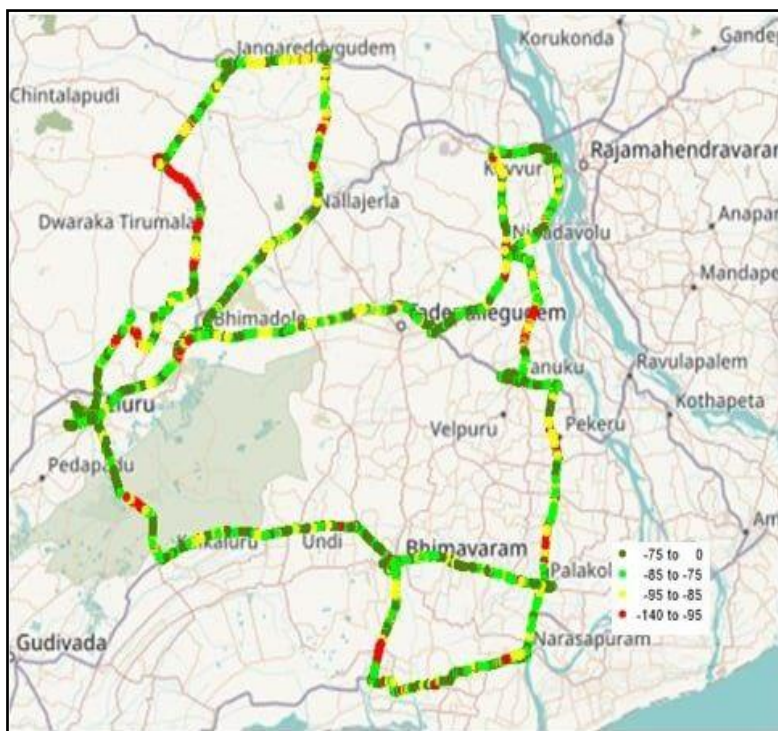


# I. Coverage Details

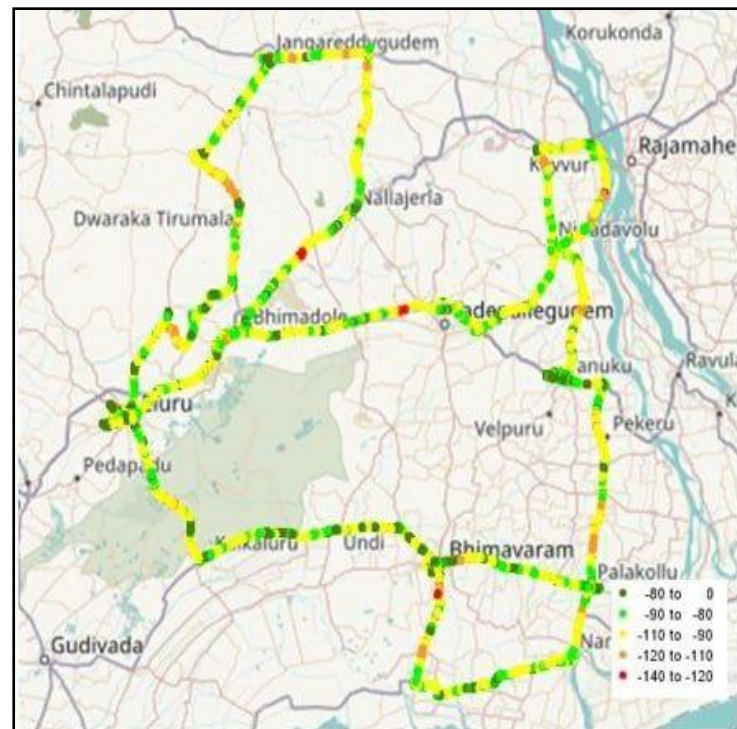
## AIRTEL

Technology	Coverage Rate %
99.2	
2G	75.84
VoLTE	96.9

### 2G



### VoLTE



### 2G

Overall RxLevel	# Samples	%
[Max, >=-75]	2308753	44.00
[-75, >=-85]	1648961	31.84
[-85, >=-95]	979411	19.00
[-95, >=Min]	281411	5.00
<b>Total</b>	<b>5218536</b>	<b>100</b>

### VoLTE

Overall RSRP	# Samples	%
[Max, >=-80]	1939797	20.63
[-80, >=-90]	2869691	30.52
[-90, >=-110]	4298102	45.75
[-110, >=-120]	275030	2.90
[-120, >=Min]	18786	0.20
<b>Total</b>	<b>9401406</b>	<b>100</b>

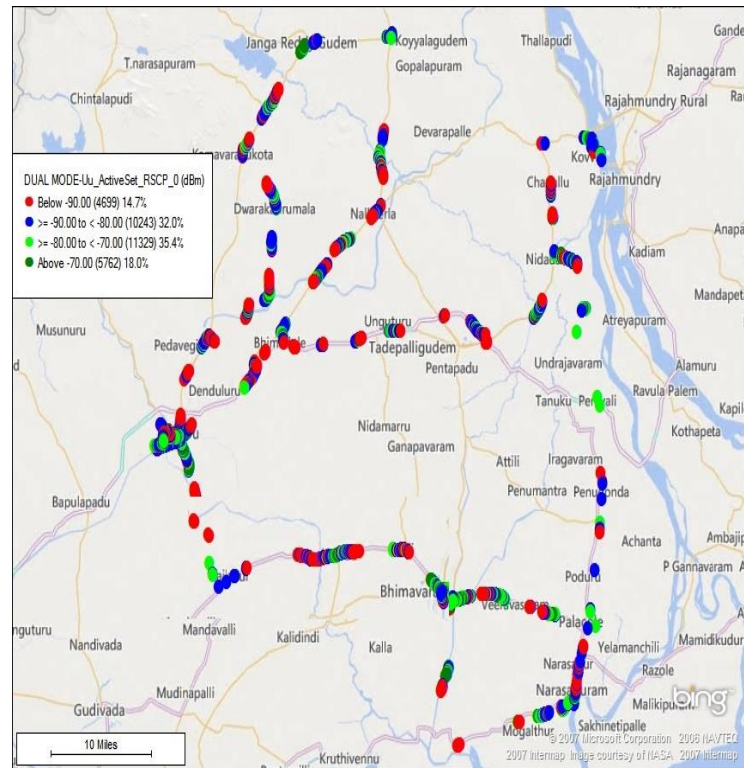
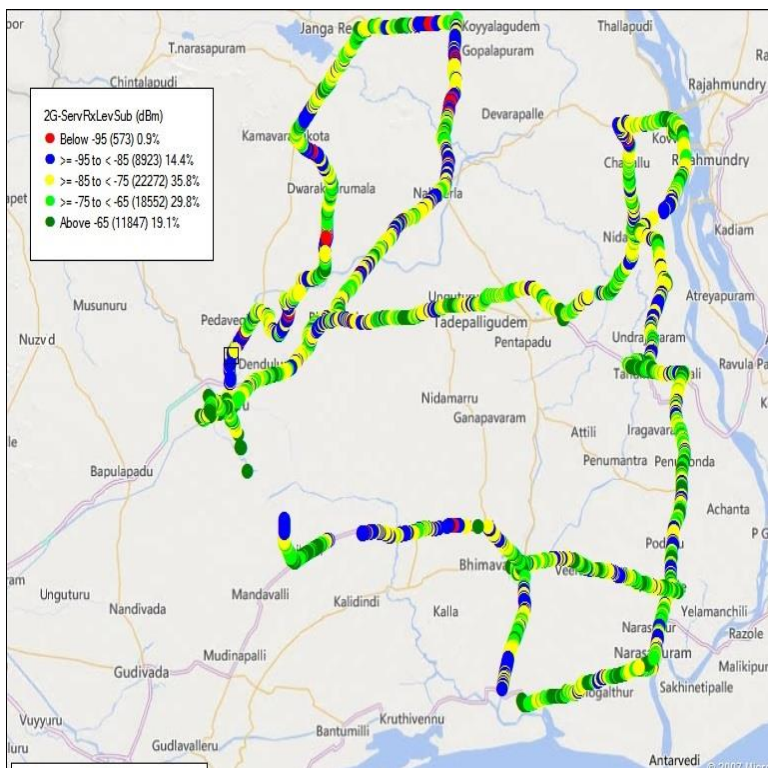
# I. Coverage Details

## BSNL

Technology	Coverage Rate %
2G	84.7
3G	85.3

### 2G

### 3G



2G		
Overall RxLevel	# Samples	% PDF
[Max, >=-65]	11847	19.1
[-65, >=-75)	18552	29.8
[-75, >=-85)	22272	35.8
[-85, >=-95]	8923	14.4
[-95, >=Min)	573	0.9
<b>Total</b>	<b>62167</b>	<b>100</b>

3G		
Overall RSCP	# Samples	% PDF
[Max, >=-70]	5762	18.0
[-70, >=-80)	11329	35.3
[-80, >=-90)	10243	32.0
[-90, >=Min)	4699	14.7
<b>Total</b>	<b>32033</b>	<b>100</b>

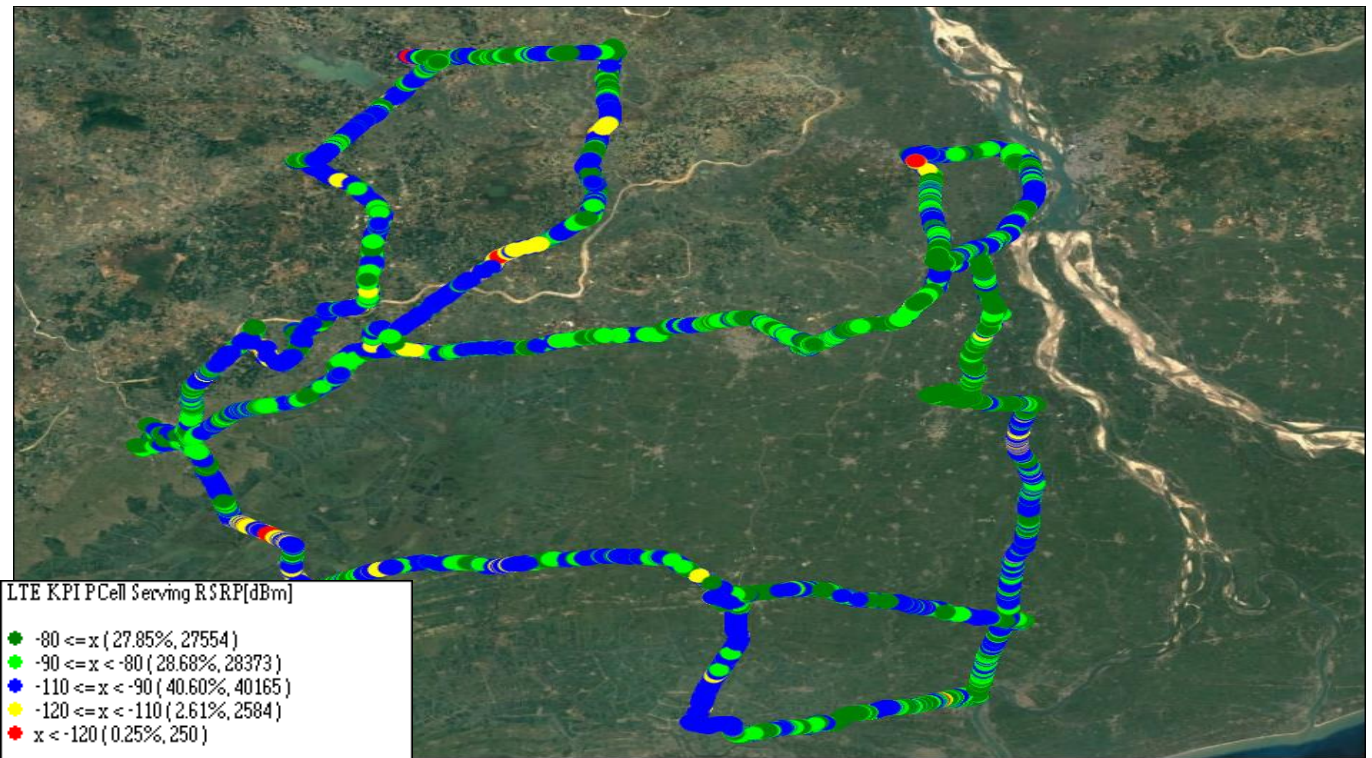


# I. Coverage Details

## JIO

Technology	Coverage Rate %
VoLTE	97.4

## VoLTE



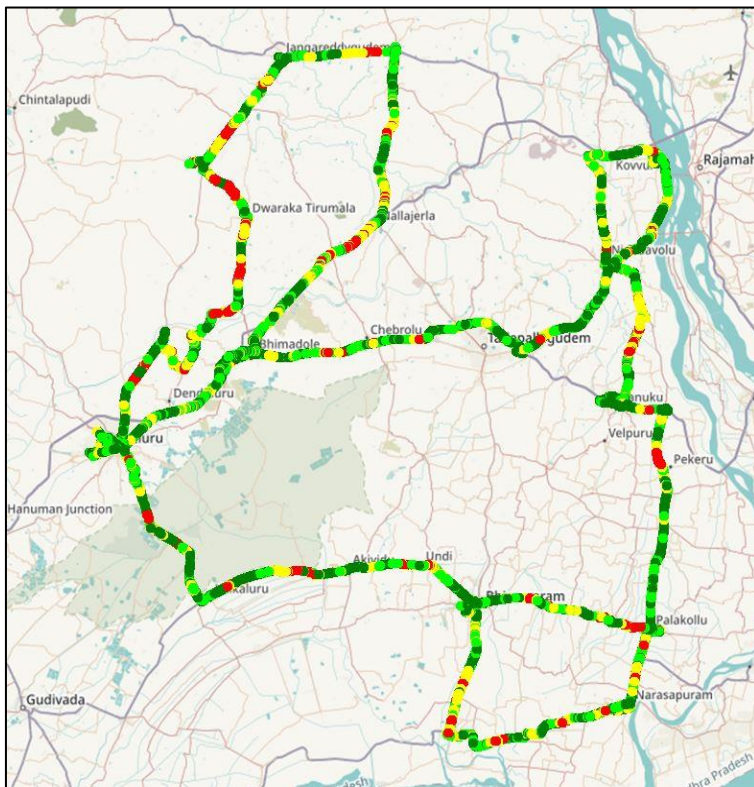
VoLTE		
Overall RSRP	# Samples	%
[Max, >=-80]	27554	27.85
[-80, >=-90]	28373	28.68
[-90, >=-110]	40165	40.87
[-110, >=-120]	2584	2.35
[-120, >=Min]	250	0.25
<b>Total</b>	<b>98926</b>	<b>100</b>

# I. Coverage Details

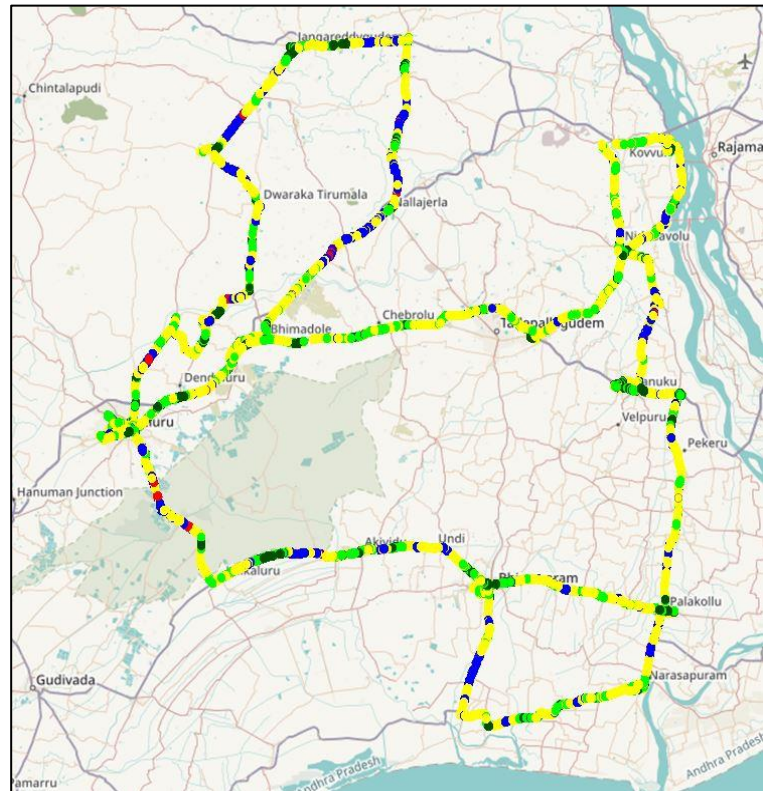
## VIL

Technology	Coverage Rate %
2G	82.09
VoLTE	95.33

### 2G



### VoLTE



### 2G

Overall RxLevel	# Samples	%
[Max, >=-75]	4119689	52.93
[-75, >=-85]	2269581	29.16
[-85, >=-95]	1031465	13.25
[-95, >=Min]	362605	4.66
<b>Total</b>	<b>7783340</b>	<b>100</b>

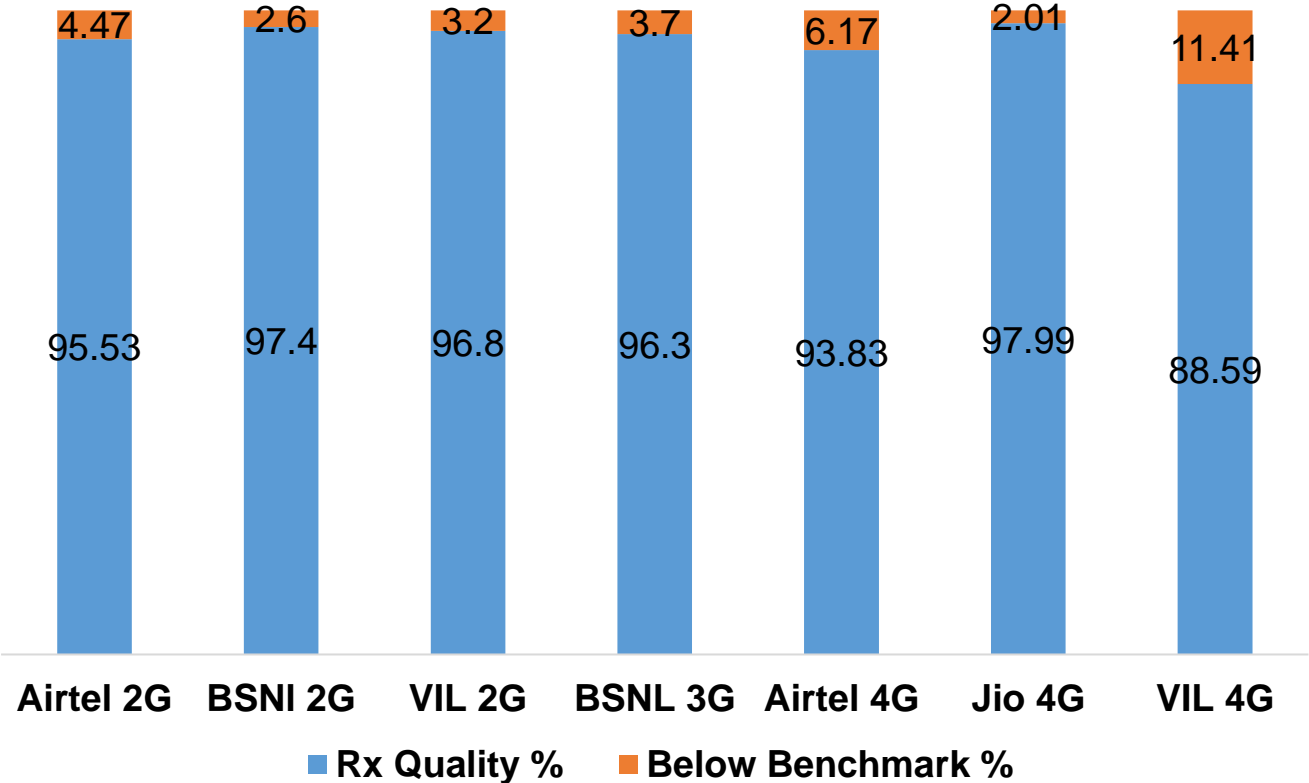
### VoLTE

Overall RSRP	# Samples	%
[Max, >=-80]	4120844	20.90
[-80, >=-90]	5806034	29.45
[-90, >=-110]	8864388	44.98
[-110, >=-120]	867844	4.40
[-120, >=Min]	53321	0.27
<b>Total</b>	<b>19712431</b>	<b>100</b>

## II. Quality Details

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

TSP	Rx Quality %
Airtel 2G	95.53
BSNL 2G	97.40
VIL 2G	96.80
BSNL 3G	96.30
Airtel 4G	93.83
JIO 4G	97.99
VIL 4G	88.59



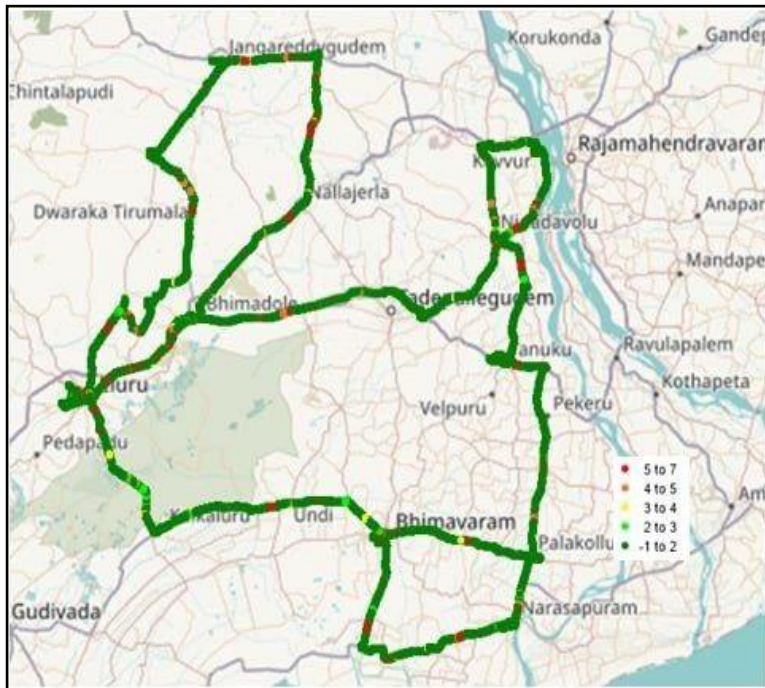


## II. Quality Details

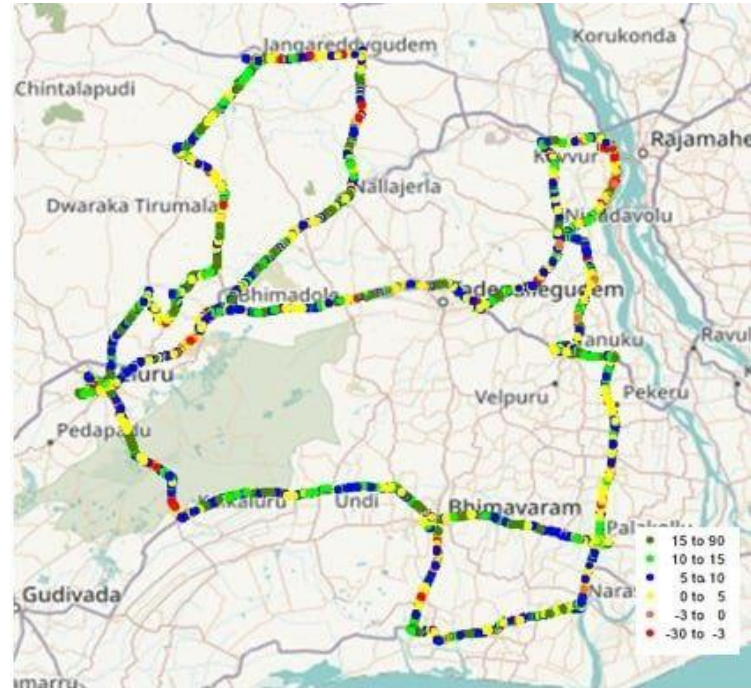
### Airtel

Technology	Rx Quality %
2G	95.53
VoLTE	93.83

### 2G



### VoLTE



Overall Rx Quality	# Samples	%
(Min, <=2)	4493791	89.16
(2, <=3)	102454	2.03
(3, <=4)	101435	2.38
(4, <=5)	98592	1.96
(5, <=Max)	244094	4.47
<b>Total</b>	<b>5040366</b>	<b>100</b>

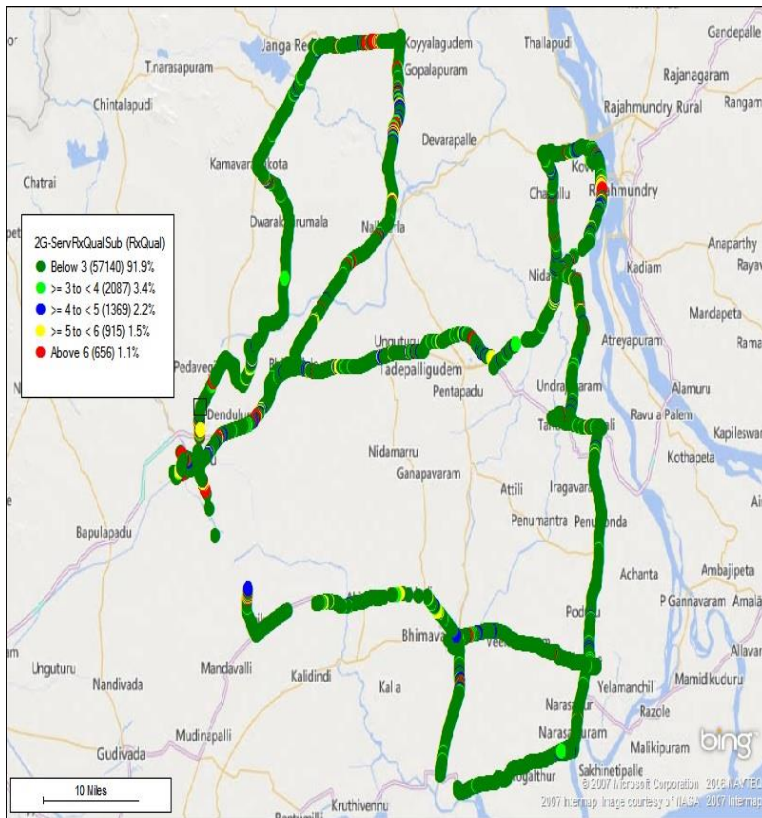
Overall SINR	# Samples	%
(Min, <=-3)	314518	3.04
(-3, <=0)	343174	3.13
(0, <=5)	2880721	28.48
(5, <=10)	2622849	25.69
(10, <=15)	2396053	23.47
(15, <=Max)	1652681	16.19
<b>Total</b>	<b>10209996</b>	<b>100</b>

## II. Quality Details

### BSNL

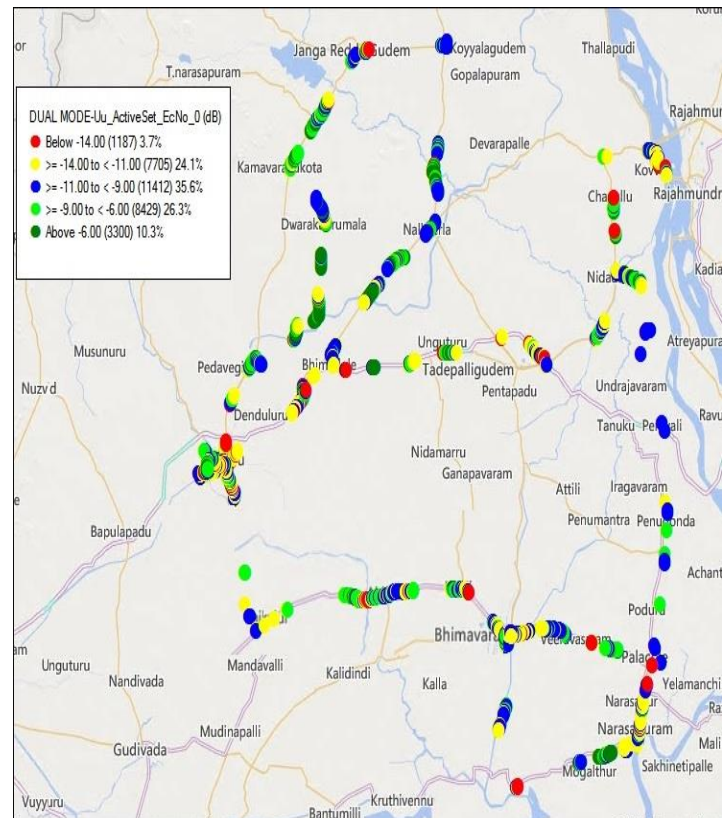
Technology	Rx Quality %
BSNL 2G	97.4
BSNL 3G	96.3

### 2G



Overall Rx Quality	# Samples	% PDF
(Min, $\leq 3$ )	57140	91.80
(3, $\leq 4$ )	2087	3.40
(4, $\leq 5$ )	1369	2.20
(5, $\leq$ Max)	1571	2.60
<b>Total</b>	<b>62167</b>	<b>100</b>

### 3G



Overall EcNo	# Samples	% PDF
(Max, $\leq -6$ )	3300	10.30
(-6, $\leq -9$ )	8429	26.30
(-9, $\leq -11$ )	11412	35.60
(-11, $\leq -14$ )	7705	24.10
(-14, $\leq$ Min)	1187	3.70
<b>Total</b>	<b>32033</b>	<b>100</b>

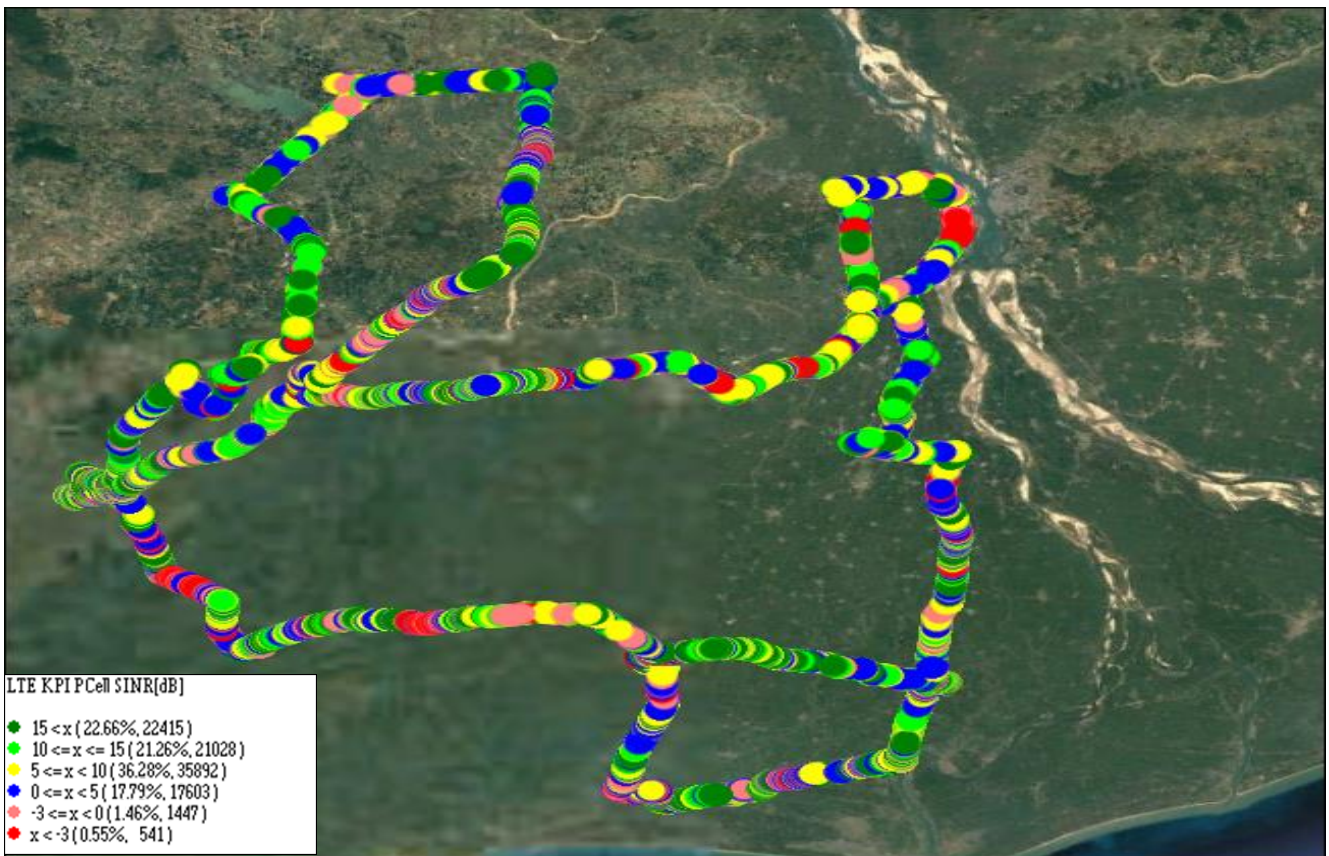


## II. Quality Details

JIO

Technology	Rx Quality %
VoLTE	97.99

VoLTE



Overall SINR	# Samples	%
(Min, <=-3)	541	0.55
(-3, <=0)	1447	1.46
(0, <=5)	17603	17.79
(5, <=10)	35892	36.28
(10, <=15)	21028	21.26
(15, <=Max)	22415	22.66
<b>Total</b>	<b>98926</b>	<b>100</b>

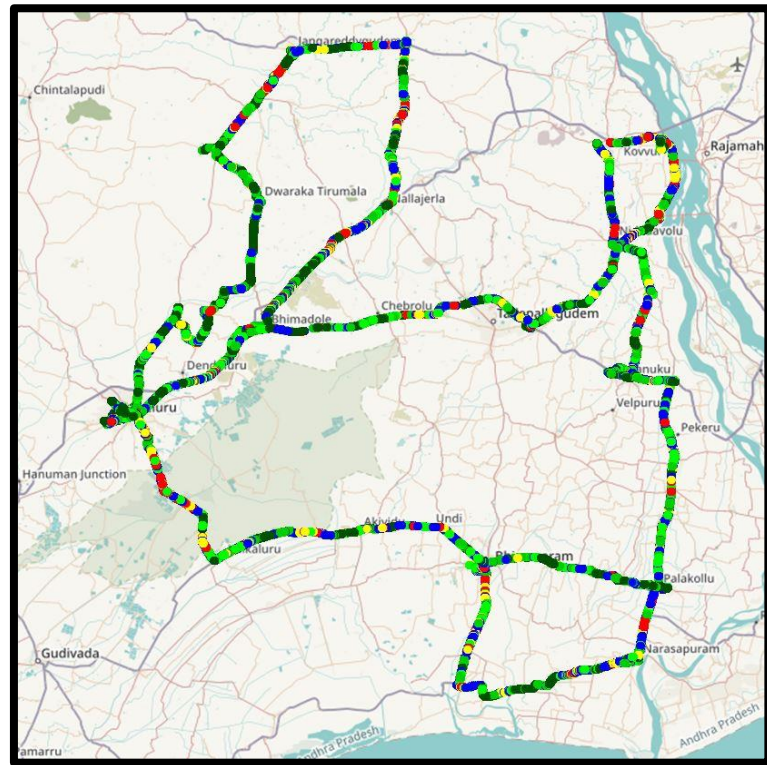
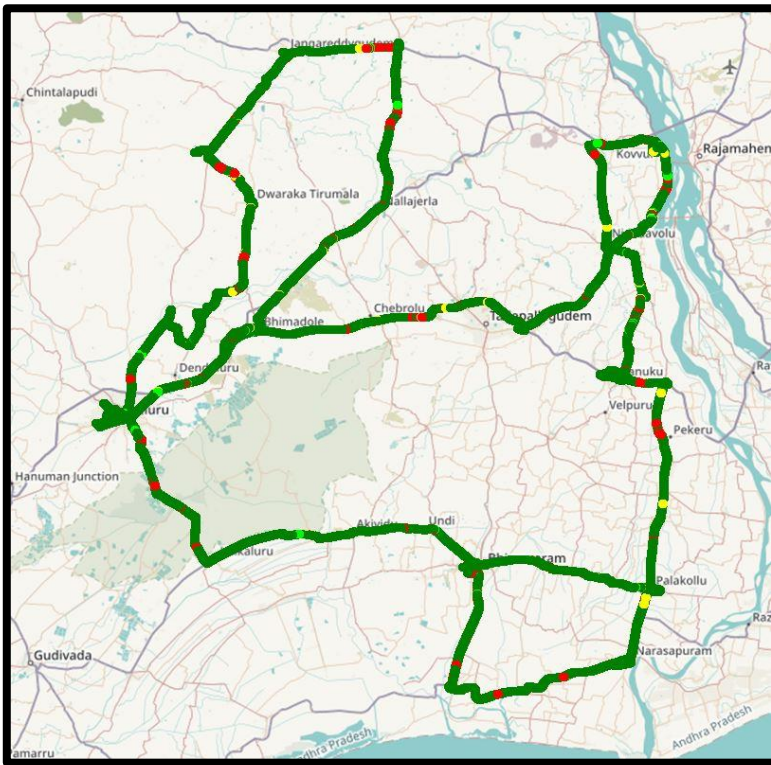
## II. Quality Details

### VIL

Technology	Rx Quality %
2G	96.80
VoLTE	88.59

### 2G

### VoLTE

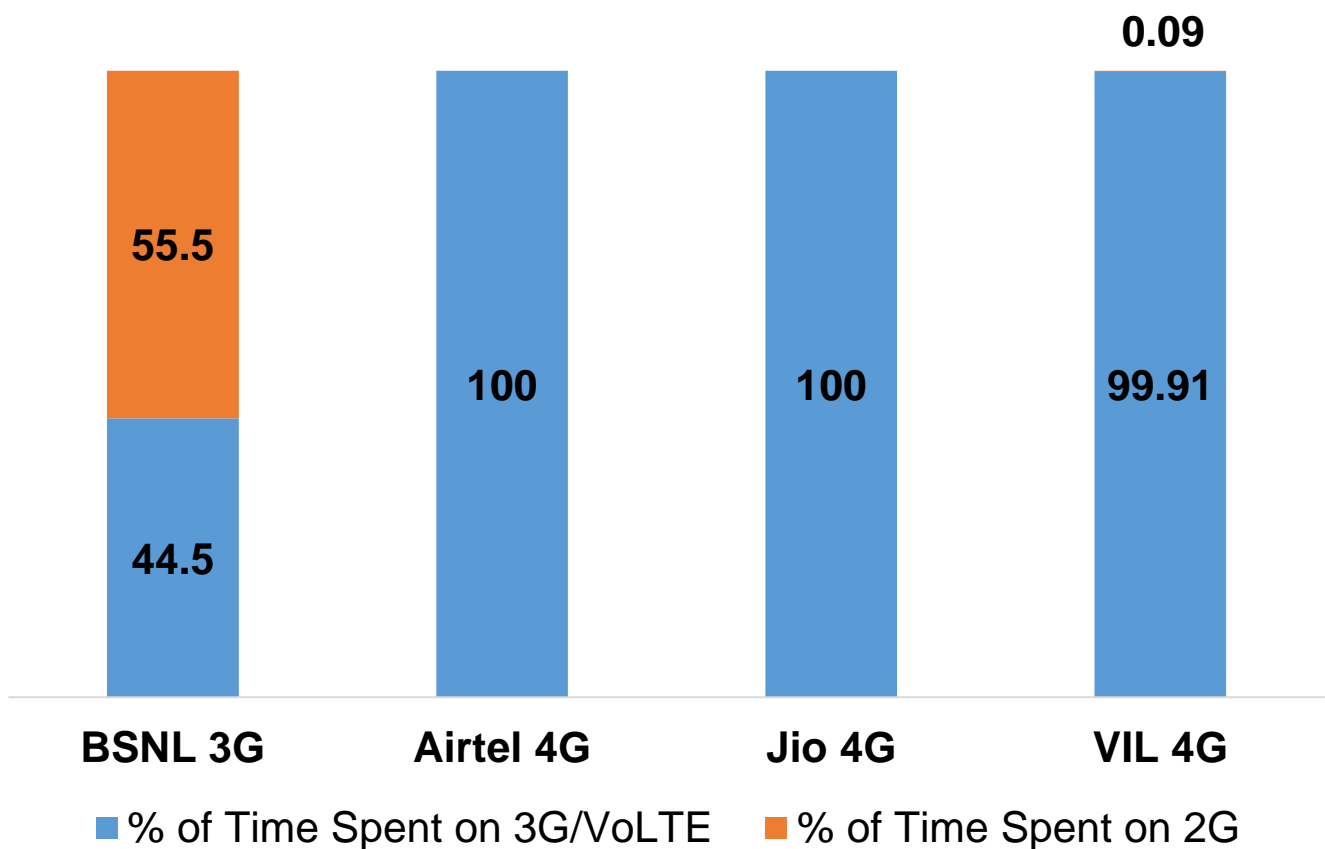


Overall Rx Quality	# Samples	%
(Min, <=2)	7271247	93.42
(2, <=3)	86668	1.11
(3, <=4)	84902	1.09
(4, <=5)	92120	1.18
(5, <=Max)	248403	3.20
<b>Total</b>	<b>7783340</b>	<b>100</b>

Overall SINR	# Samples	%
(Min, <=-3)	839066	4.26
(-3, <=0)	1407195	7.15
(0, <=5)	3678536	18.68
(5, <=10)	4533377	23.02
(10, <=15)	3722737	18.91
(15, <=Max)	5509745	27.98
<b>Total</b>	<b>19690656</b>	<b>100</b>

### III. Technology Details

TSP	% of Time Spent on 3G/VoLTE
BSNL 3G	44.5
Airtel VoLTE	100
Jio VoLTE	100
VIL VoLTE	99.91





### III. Technology Details

#### Airtel

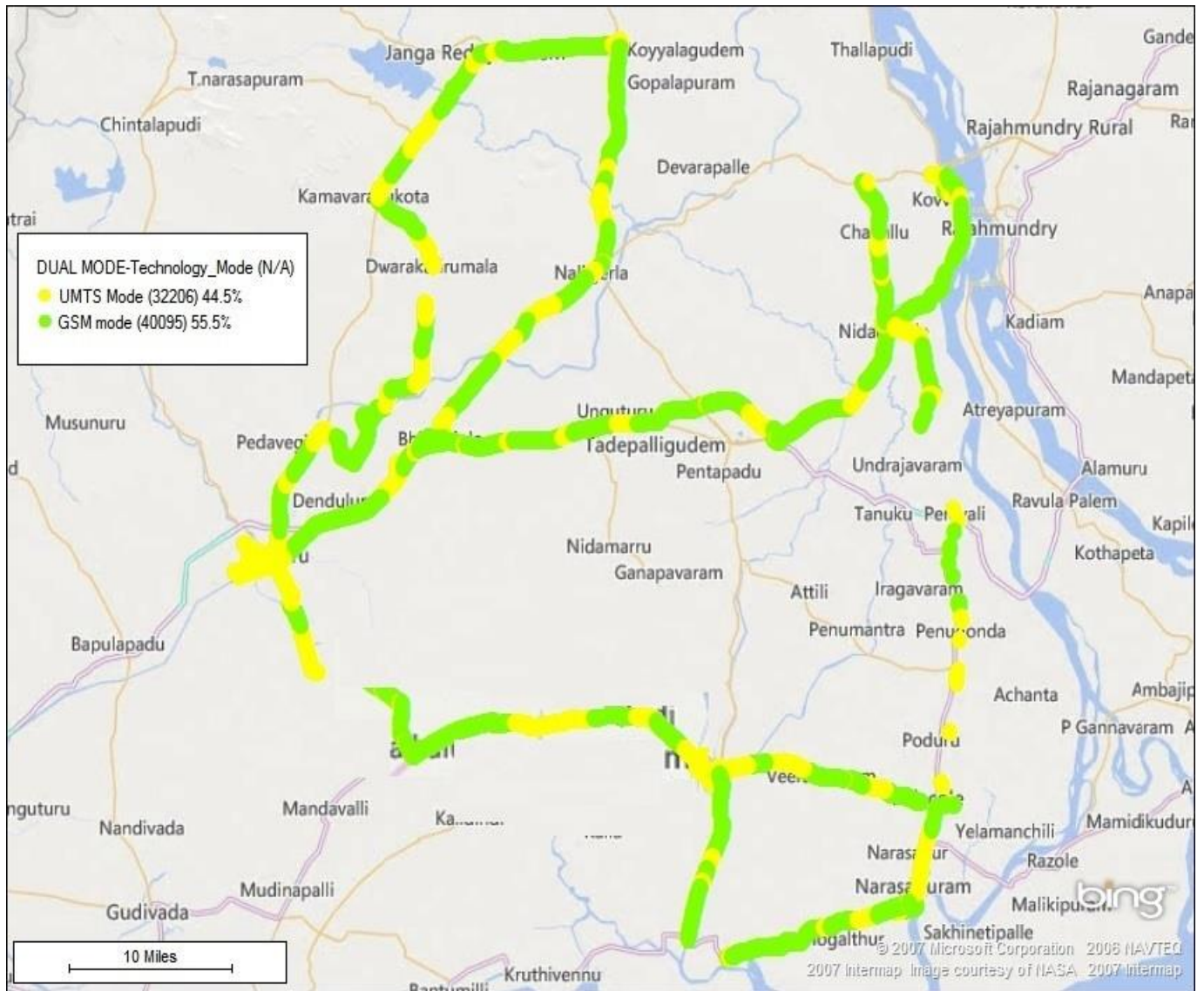
Technology	Time Spent %
3G / VoLTE	100



# III. Technology Details

## BSNL

Technology	Time Spent on 3G
3G	44.5









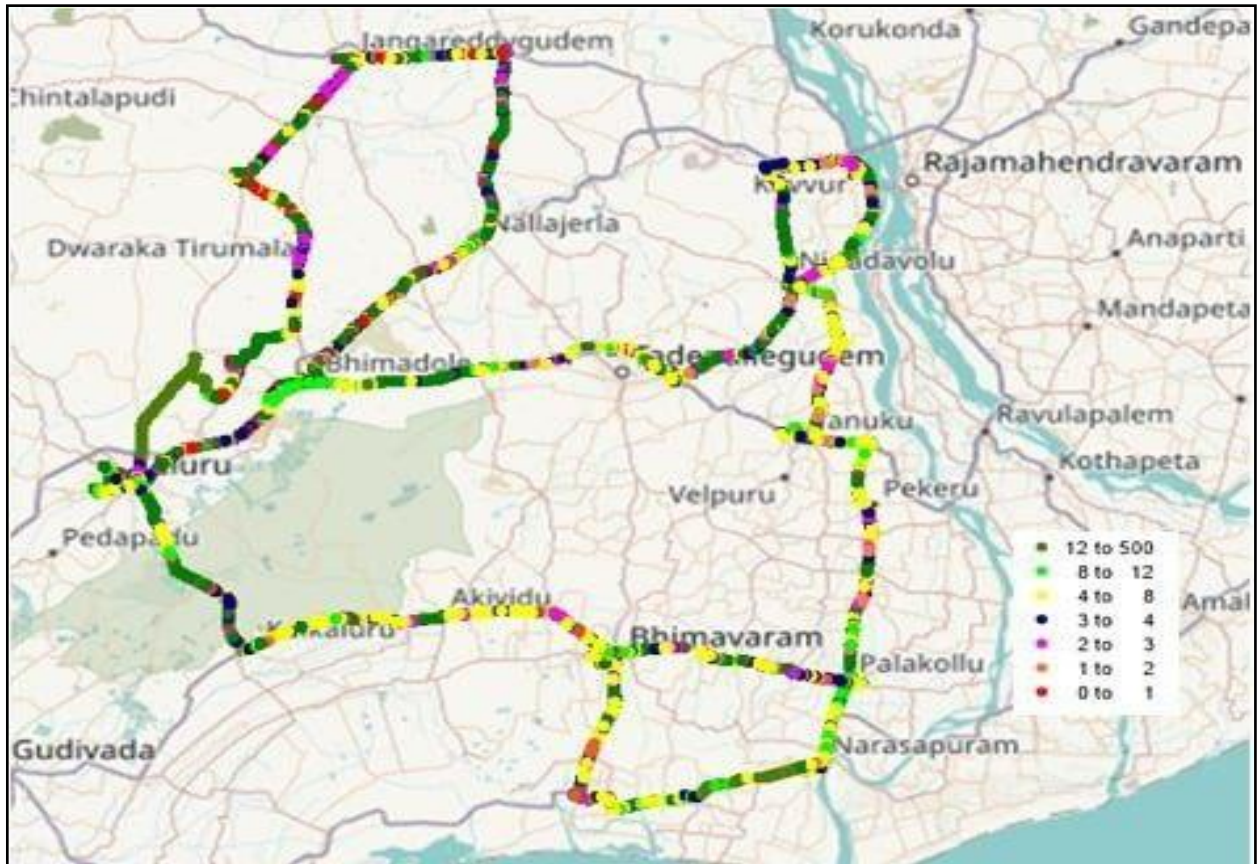


# IV. Dynamic Data Test- 3G / 4G DL Details

## Airtel

### Data Statistics - Dynamic Complete SSA

<b>Data KPIs - Overall</b>	<b>4G</b>
<b>Download Throughput (Mbps)</b>	18.18



DL throughput	No of Sample	%
0 to 1 Mbps	2201184	14.1
1 to 2 Mbps	1020551	6.6
2 to 3 Mbps	1210082	7.8
3 to 4 Mbps	1201618	7.7
4 to 8 Mbps	5288340	34.0
8 to 12 Mbps	1628070	10.5
>12 Mbps	3009032	19.34
<b>Total</b>	<b>15558877</b>	

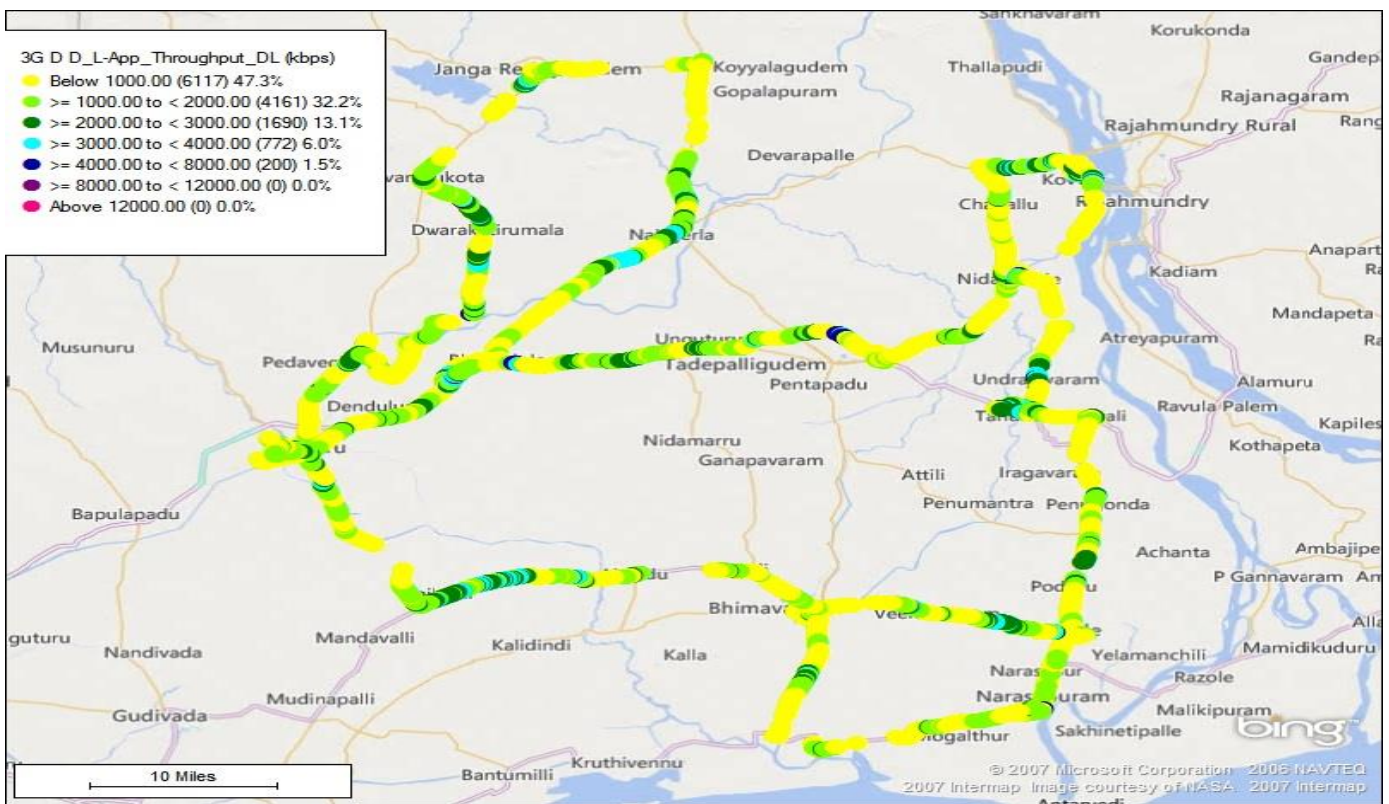


# IV. Dynamic Data Test- 3G DL Details

**BSNL**

## Data Statistics - Dynamic Complete SSA 520Kms

<b>Data KPIs - Overall</b>	<b>3G</b>
<b>Download Throughput (Mbps)</b>	<b>1.32</b>



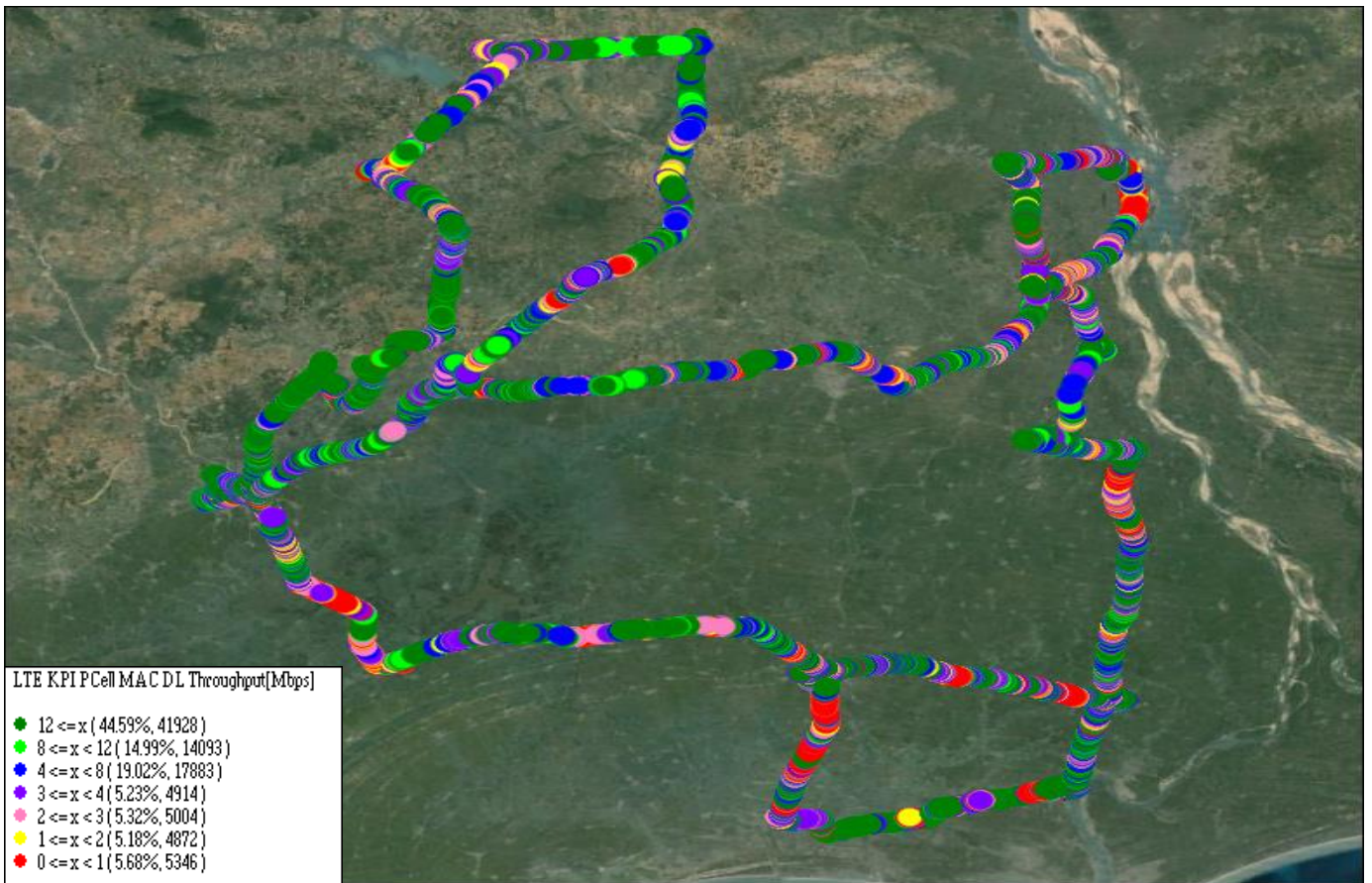
DL throughput	No of Samples	%
0 to 1 Mbps	6117	47.3
1 to 2 Mbps	4161	32.2
2 to 3 Mbps	1690	13.1
3 to 4 Mbps	772	6.0
4 to 8 Mbps	200	1.5
8 to 12 Mbps	0	0
>12 Mbps	0	0

# IV. Dynamic Data Test- 3G / 4G DL Details

## JIO

### Data Statistics - Dynamic Complete SSA

Data KPIs - Overall	3G / 4G
Download Throughput (Mbps)	15.17



DL Throughput	No of Sample	%
0 to 1 Mbps	5346	5.68
1 to 2 Mbps	4872	5.18
2 to 3 Mbps	5004	5.32
3 to 4 Mbps	4914	5.23
4 to 8 Mbps	17883	19.02
8 to 12 Mbps	14093	14.99
>12 Mbps	41928	44.59

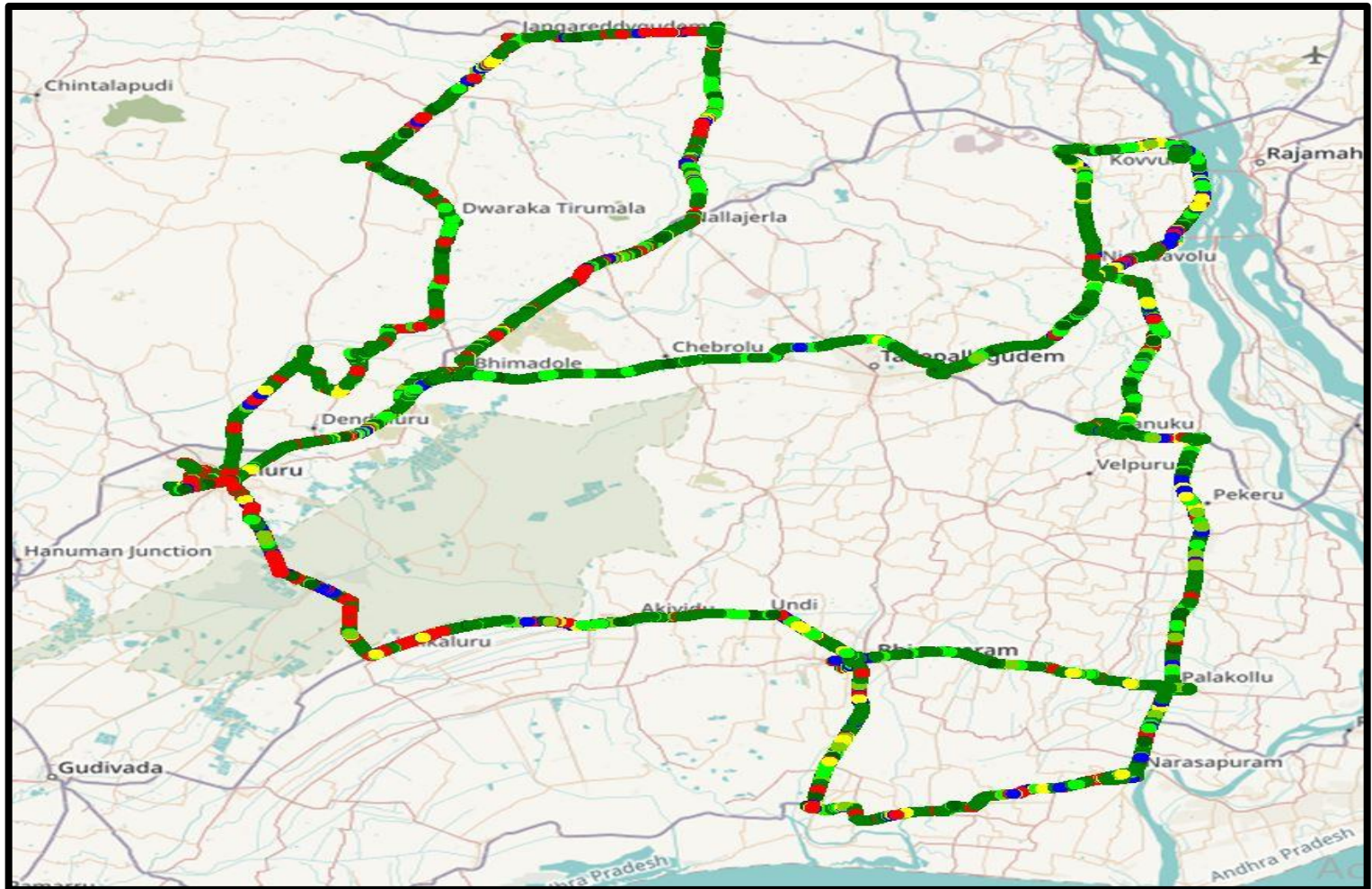


# IV. Dynamic Data Test- 3G / 4G DL Details

## VIL

### Data Statistics - Dynamic Complete SSA

Data KPIs - Overall	3G / 4G
Download Throughput (Mbps)	35.7



DL throughput	No of Sample	%
0 to 1 Mbps	1991720	7.3
1 to 2 Mbps	930716	3.4
2 to 3 Mbps	951611	3.5
3 to 4 Mbps	937174	3.4
4 to 8 Mbps	3445713	12.6
8 to 12 Mbps	2759930	10.1
>12 Mbps	16257130	59.6
<b>Total</b>	<b>27273994</b>	<b>100</b>

## V. TRAI MySpeed App

### Airtel

Technology 4G	1. Jangareddy Gudem Bus stand	2. Bhimavaram Railway station	3. Bhimavaram Bus stand	4. Narsapur Railway station	5. Eluru Railway station	6. Eluru Govt Hospital
Download in Mbps	54.54	61.69	40.84	57.52	95.44	60.44
Upload in Mbps	8.44	14.18	14.40	8.86	19.32	19.89

### BSNL

Technology 3G/4G	1. Jangareddy Gudem Bus stand	2. Bhimavaram Railway station	3. Bhimavaram Bus stand	4. Narsapur Railway station	5. Eluru Railway station	6. Eluru Govt Hospital
Download in Mbps	2.80	2.28	5.55	8.06	3.62	3.13
Upload in Mbps	1.65	1.54	1.33	2.47	1.58	1.42

### JIO

Technology 4G	1. Jangareddy Gudem Bus stand	2. Bhimavaram Railway station	3. Bhimavaram Bus stand	4. Narsapur Railway station	5. Eluru Railway station	6. Eluru Govt Hospital
Download in Mbps	57.06	71.9	46.68	70.96	68.43	64.06
Upload in Mbps	9.66	6.23	16.13	23.38	7.08	26.04

### VIL

Technology 4G	1. Jangareddy Gudem Bus stand	2. Bhimavaram Railway station	3. Bhimavaram Bus stand	4. Narsapur Railway station	5. Eluru Railway station	6. Eluru Govt Hospital
Download in Mbps	33.00	31.24	39.21	36.84	43.64	43.58
Upload in Mbps	4.83	7.51	9.08	5.86	10.14	15.48

## VI. NH/SH Routes covered

### NH/SH Routes covered in OADT by Airtel / BSNL / RJIL / VIL

S.No	No of NH/SH routes	NH routes	SH routes	Distance (Km)
1	ELURU to Jangareddygudem Via Dwaraka Tirumala		26	80
2	JangareddyGudem to ELURU Via Nallajerla	16	24	90
3	Bheemadole to Kovvur Via Tadepallygudem	216A	200,210,22	80
4	Kovvur to Narsapur Via Tanuku	216	166,204,22,24	90
5	Palakollu to Bheemavaram	165		35
6	Bheemavaram to Narsapur Via Kalipatnam	216	302	50
7	Bheemavaram to ELURU via Kaikaluru	165	258	85