Operator Assisted Drive Test Report

Bhopal- Delhi Railway Route
February 2024
By
TRAI Regional Office Bhopal

The Operator Assisted Drive Test has been carried out by Regional Office, Bhopal with the help of Telecom Service Providers for Bhopal- to Delhi rail route. The drive test covered drive route of around 700 KMs. LSA covered – MP,UPW, Rajsthan, UPE and Delhi

TSP	Network tested	From station to station	Date & Time
Airtel	2G & VoLTE	Bhopal to Nizamuddin	22/02/2024
BSNL	2G & 3G	Bhopal to Nizamuddin	22/02/2024
JIO	VoLTE	Rani Kamlapati Bhopal to Nizamuddin	21/02/2024
VIL	2G, 3G & VoLTE	Bhopal to Delhi	24/02/2024

Key Performance Indicators:

KPI	Benchmark	Observations
Block call rate %	≤3%	All TSPs achieved the benchmark
Drop call rate %	≤2%	All TSPs achieved the benchmark, Except Vi in 2G & VoLTE
CSSR %	≥95 %	All TSPs achieved the benchmark
Mobility HOSR %	≥95%	All TSPs achieved the benchmark , except BSNL in 3G.
Good RX Quality %	≥95%	No TSP achieved the Rx Quality benchmark in any technology

Overview

Regional Office, TRAI Bhopal conducted Operator Assisted Drive Test. The performance of Airtel, BSNL, Vodafone Idea and Jio was monitored across various technologies (2G, 3G, 4G & 5G). The test results obtained from these drive tests were utilized to assess the network quality for Voice and Data services.

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

Data: Download Throughputs

Drive Test Details :
Voice Tests:
i.   2G – measurement – UE Locked in 2G
ii. 3G – measurement – UE in Dual mode (2G and 3G)
iii. 4G – measurement – UE in Free mode

Calls were made for the **180-sec** duration with a wait time of **10 sec** between calls in all technologies.

Data Tests:
Dynamic data – repeat data file download (to check throughput on the entire route)

i.   3G – measurement – UE in 3G   File Size- 20MB
ii. 4G – measurement – UE in LTE File Size- 40MB
iii. 5G – measurement – UE in 5G File Size- 200MB

Voice & Dynamic Data Test Drive Route
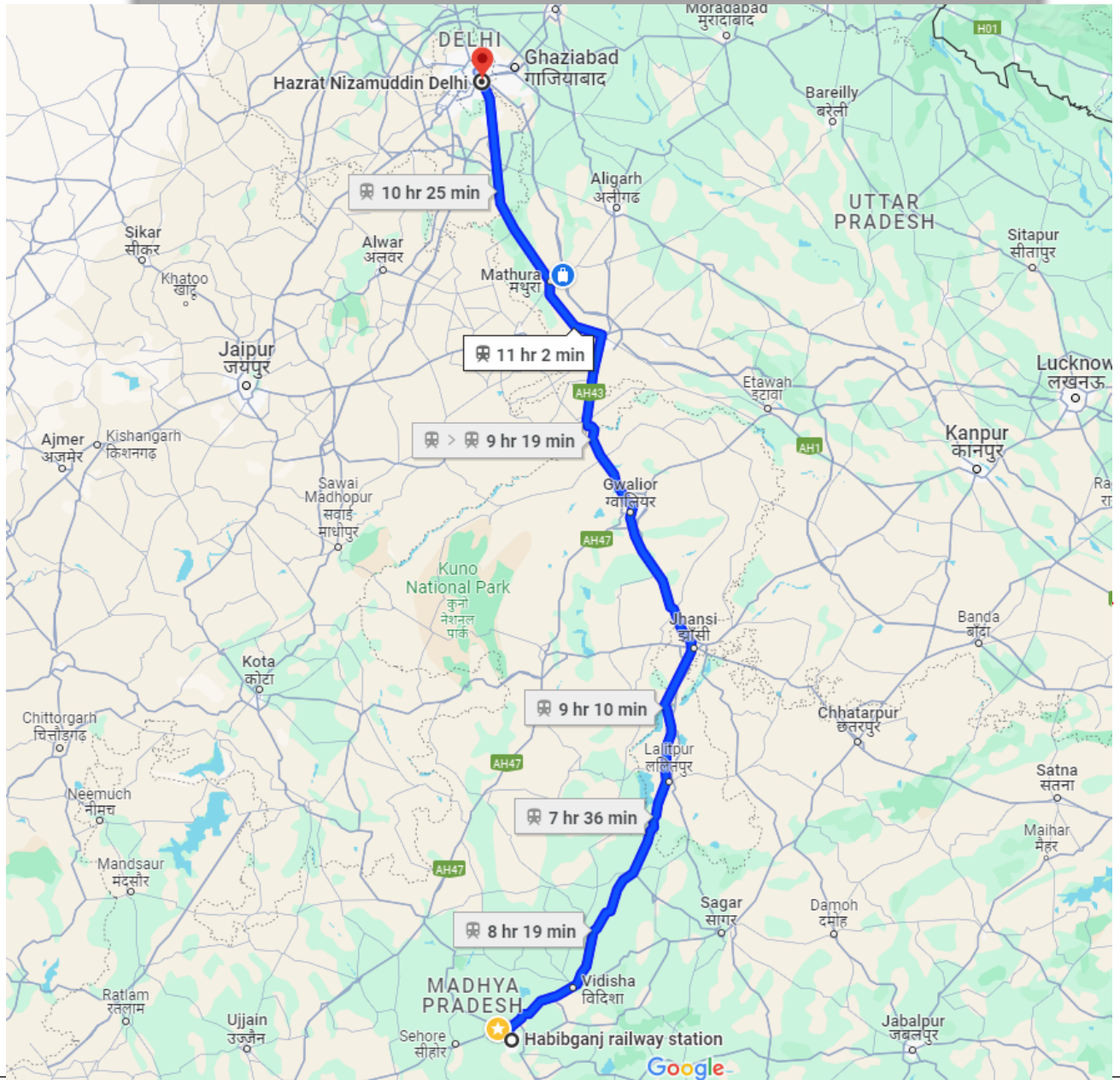
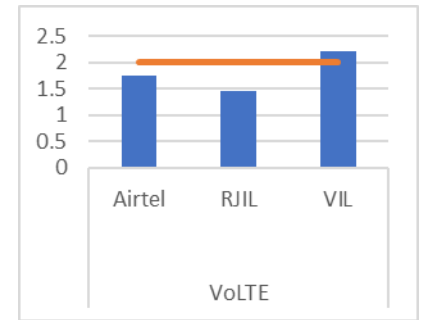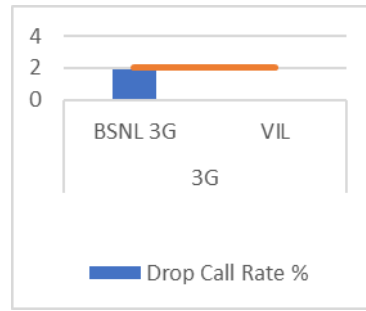| List of important stations covered during the drive test |
| :---: |
| **Bhopal / Rani Kamla Pati** |
| **Vidisha** |
| **Bina** |
| **Jhansi** |
| **Gwalior** |
| **Agra** |
| **Mathura** |
| **New Delhi / Nizamuddin** |

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Voice Calls

QoS compliance of the TSPs for Voice across technologies 2G/3G/4G-VoLTE:
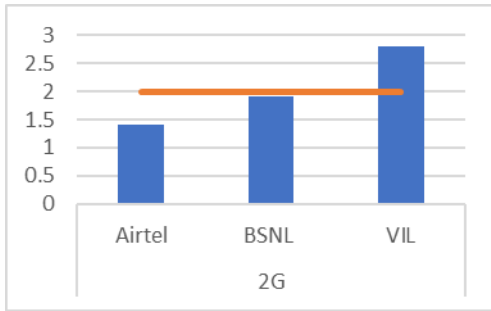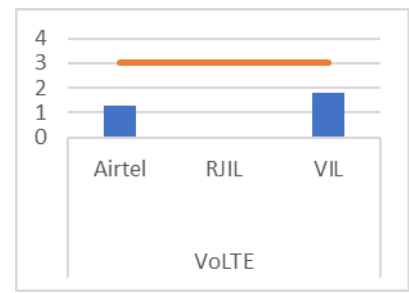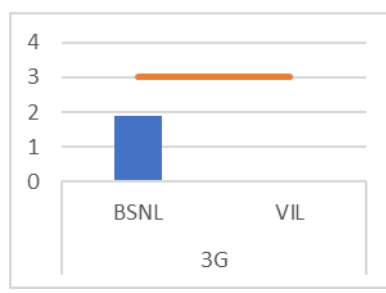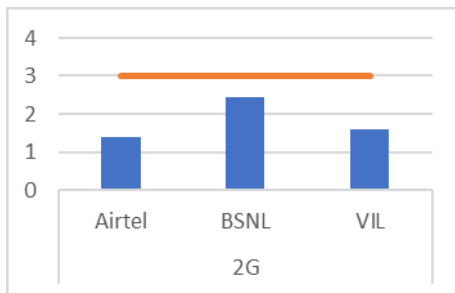
	2G			3G		VoLTE			
KPIs	**Airtel**	**BSNL**	**VIL**	**BSNL**	**VIL**	**Airtel**	**BSNL**	**RJIL**	**VIL**
Drop Call Rate %	1.40	1.90	2.8	1.94	NA	1.74	NA	1.46	2.2
Block Call Rate %	1.38	2.44	1.60	1.90	NA	1.28	NA	NA	1.8

a) **All TSPs have met the 2% QOS benchmark of Drop Call Rate (DCR%) except Vi in 2G & VoLTE**
b) **Call Block Rate (CBR%) benchmark of 3% was achieved by all TSP's.**

Voice Calls

Coverage

a) Percentage of coverage samples for 2G **≥ -85 dBm.**

TSPs	2G		
	Airtel	**BSNL**	**VIL**
Coverage %	**59.07**	**53.72**	**59.07**

b) Percentage of coverage samples for 3G ≥ -90 dBm

TSPs	3G	
	BSNL	VI
Coverage %	**53.9**	NA

b) Percentage of coverage samples for LTE ≥ -110 dBm.

TSPs	VoLTE			
	Airtel	BSNL	JIO	VIL
Coverage %	**88.32**	**NA**	**97.25**	**90.26**

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

TSPs	3G		VoLTE			
	BSNL	VIL	Airtel	BSNL	JIO	VIL
Time Spent on 3G/4G %	**90.41**	**NA**	**100**	**NA**	**100**	**77.84**

Dynamic Data -Download Throughput was tested.

Data Download Performance – Dynamic 3G/4G/ 5G Network

Dynamic average data download throughput

■ Average Download throughput- 3G in Mbps

■ Average Download throughput-LTE in Mbps
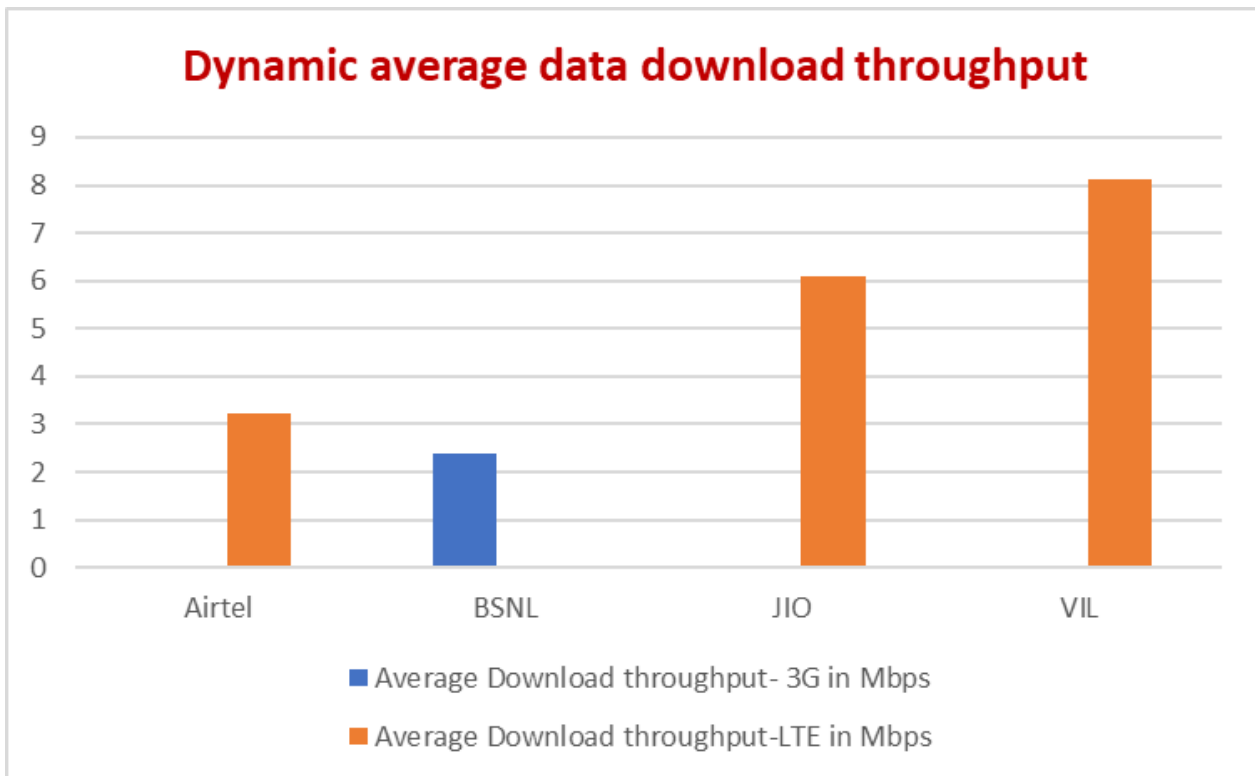
TSP	Airtel	BSNL	JIO	VIL
Average Download throughput- 3G In Mbps	NA	2.4	NA	NA
Average Download throughput-LTE in Mbps	3.22	NA	6.08	8.13
Average Download throughput- 5G in Mbps	NA	NA	NA	NA

Summary

TSP (For 2G)	Airtel	BSNL	JIO	VIL
Call attempts	217	164	NA	249
Block call rate %	1.38	2.44	NA	1.60
CSSR %	98.62	96.34	NA	98.4
Drop call rate %	1.40	1.90	NA	2.8
Mobility HOSR %	95.83	96.9	NA	97.11
RX Quality %	93.21	85.5	NA	84.35
Average CST Sec	3.64	180	NA	3.66

TSP (For 3G)	BSNL	VI
Call attempts	158	NA
Block call rate %	1.90	NA
CSSR %	98.10	NA
Drop call rate %	1.94	NA
Mobility HOSR %	94.5	NA
RX Quality %	85.16	NA
Average CST (Sec)	140	NA

TSP (For VoLTE)	Airtel	BSNL	JIO	VIL
Call attempts	234	NA	137	265
Block call rate %	1.28	NA	-	1.8
CSSR %	98.72	NA	96.35	98.2
Drop call rate %	1.74	NA	1.46	2.2
Mobility HOSR %	97	NA	99.02	99.11
RX Quality %	80.03	NA	81.84	80.99
Average CST(Sec)	1.50	NA	2.10	1.72

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 ≥ -85 dBm, RSCP is ≥ -90 dBm & RSRP ≥ -110dBm. The details are as follows.
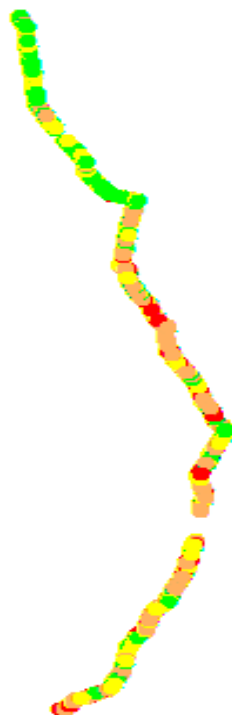
TSP	Coverage Rate %
Airtel 2G	59.07
BSNI 2G	53.72
VIL 2G	59.07
BSNL 3G	53.90
VIL 3G	NA
Airtel VoLTE	88.32
Jio VoLTE	97.25
VIL VoLTE	90.27

Coverage Rate %

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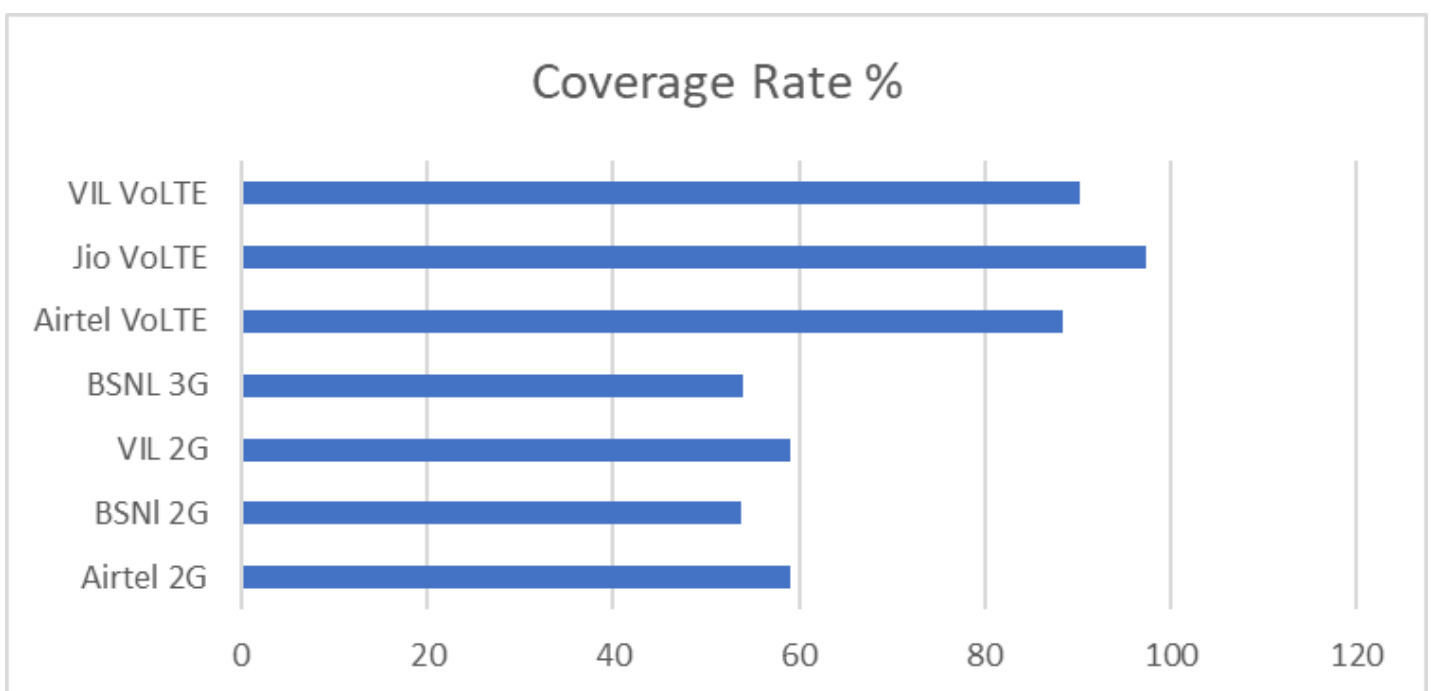
TSP- Airtel

Technology	Coverage %
2G	59.07

2G			
Overall RxLevel	**# Samples**	**% PDF**	**Legends**
[Max, >=-75]	949070	33.66	🟩
[-75, >=-85)	716657	25.41	🟨
[-85, >=-95)	931230	33.02	🟧
[-95, >=Min)	222934	7.91	🟥
Total	2819891	100	

TSP-BSNL

Technology	Coverage %
2G	53.72 %

Legend

BPL-ND 2G - RxLevSubdBm

- -75 to 0 (692929)
- -85 to -75 (777316)
- -95 to -85 (736604)
- -120 to -95 (529732)
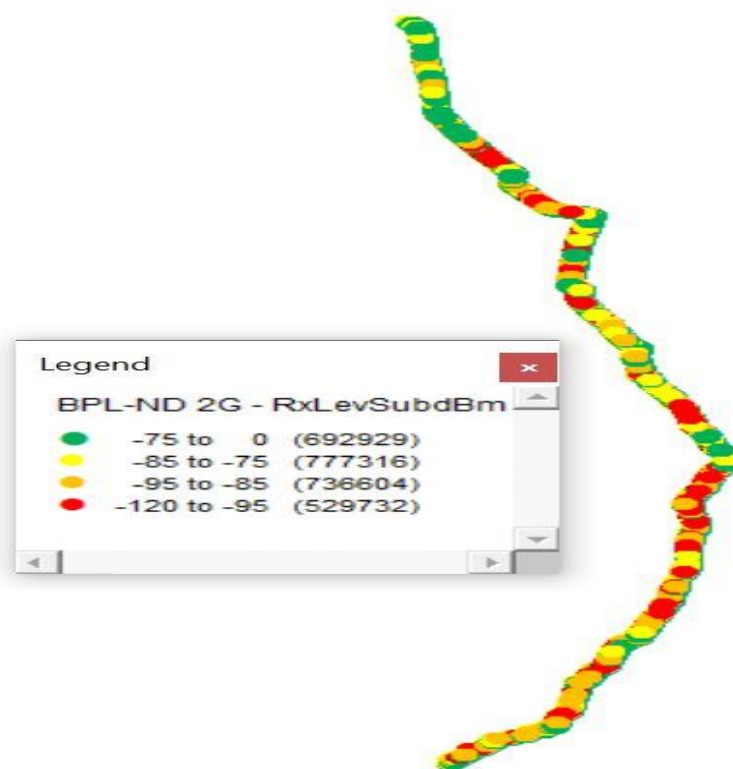
2G			
Overall RxLevel	**# Samples**	**% PDF**	**Legends**
[Max, >=-75]	692929	25.32%	
[-75, >=-85)	777316	28.40%	
[-85, >=-95)	736604	26.92%	
[-95, >=Min)	529732	19.36%	
Total	2736581	100%	

TSP- Vi

Technology	Coverage %
2G	59.07

RxLev Sub In Service (dBm)

●		RxLev Sub In Service (dBm)	
🟥	[Min, -95)	(1977)	(12.69%)
🟧	[-95, -85)	(4401)	(28.24%)
🟨	[-85, -75)	(5173)	(33.2%)
🟩	[-75, Max]	(4032)	(25.87%)
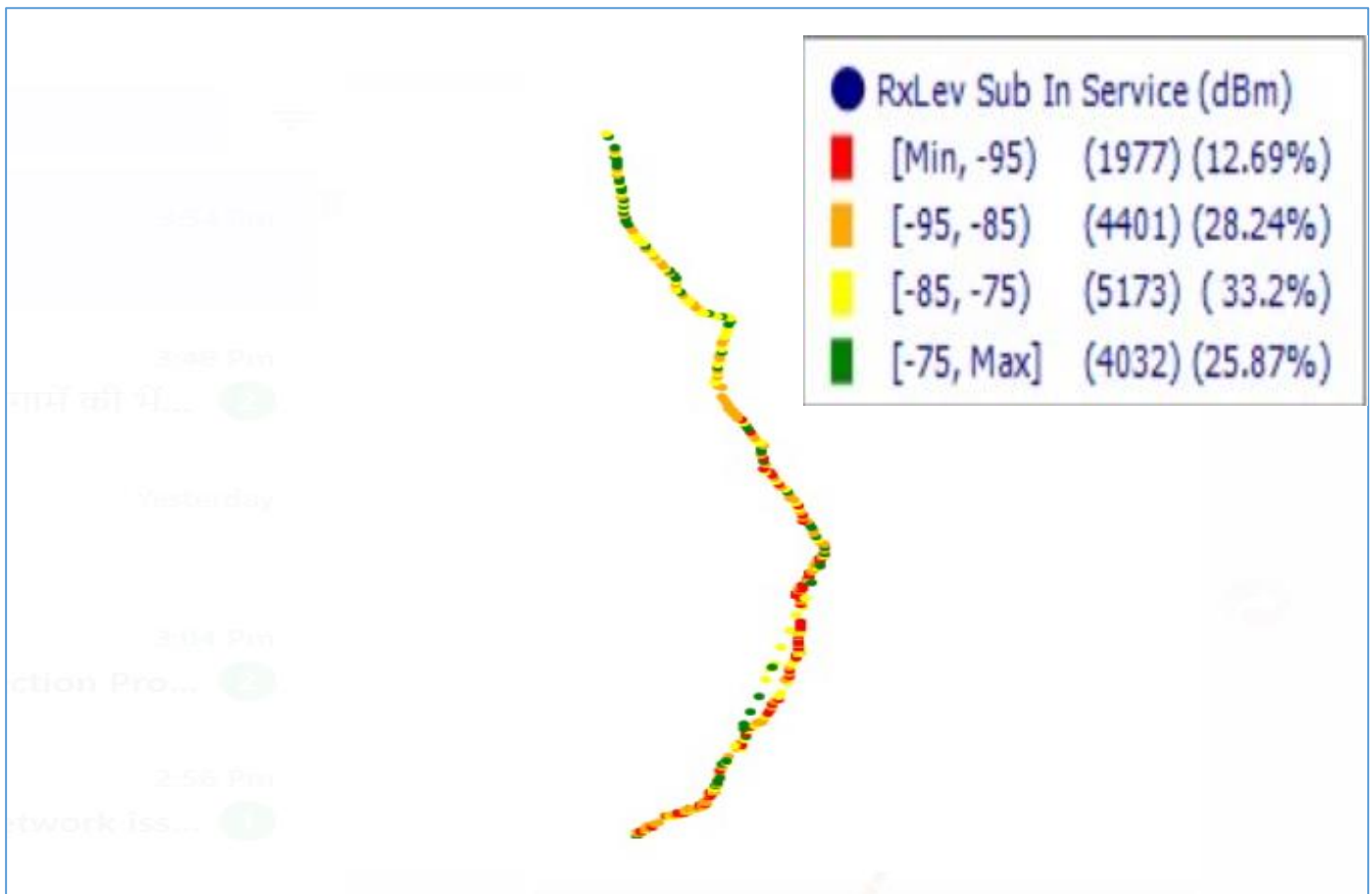
2G			
Overall RxLevel	**# Samples**	**% PDF**	**Legends**
[Max, >=-75]	4032	25.87	🟩
[-75, >=-85)	5173	33.2	🟨
[-85, >=-95)	4401	28.24	🟧
[-95, >=Min)	1977	12.69	🟥
Total	15583	100	

TSP- BSNL

Technology	Coverage %
3G	53.90 %

Legend

BPL-New Delhi 3G RSCP

- -70 to   0   (56392)
- -80 to -70 (111740)
- -90 to -80 (191300)
- -125 to -90 (307318)
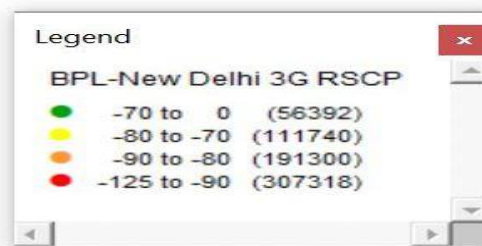
3G			
Overall RSCP	**# Samples**	**% PDF**	**Legends**
[Max, >=-70]	56392	8.46%	
[-70, >=-80)	111740	16.76%	
[-80, >=-90)	191300	28.69%	
[-90, >=Min)	307318	46.09%	
Total	666750	**100%**	

TSP- Airtel

Technology88.32	Coverage %
VoLTE	88.32
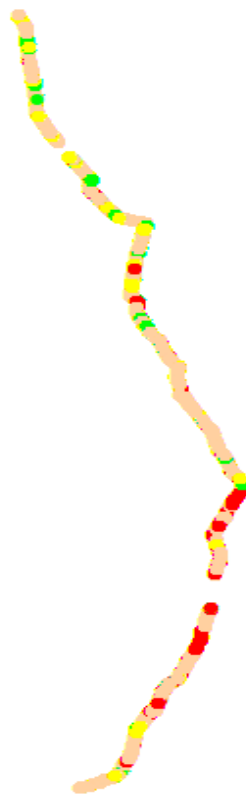
VoLTE			
Overall RSRP	**# Samples**	**% PDF**	**Legends**
[Max, >=-80]	350703	5.57	
[-80, >=-90)	938429	14.91	
[-90, >=-110)	4268635	67.83	
[-110, >=Min)	463927	11.68	
Total	6292952	100	

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TSP- JIO

Technology	Coverage %
VoLTE	97.25

VoLTE			
Overall RSRP	**# Samples**	**% PDF**	**Legends**
[Max, >=-80]	7352	27.7	
[-80, >=-90)	8460	31.9	
[-90, >=-110)	9959	37.6	
[-110, >=Min)	730	2.75	
Total	26501	100	

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TSP- Vi

Technology	Coverage %
VoLTE	90.26
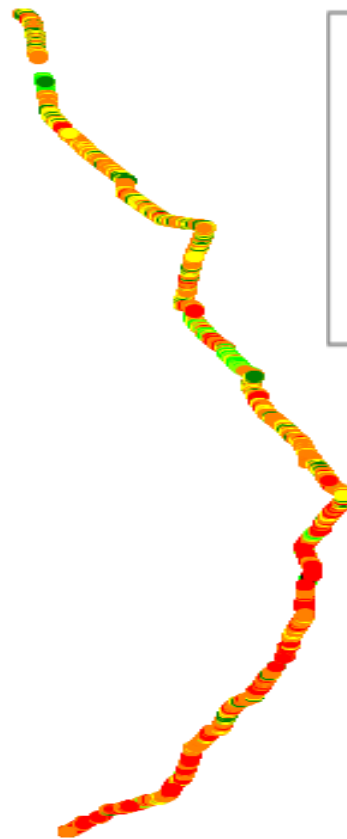
Serving Cell RSRP (dBm)
- [Min, -110) (1208) (9.73%)
- [-110, -90) (6953) (56.01%)
- [-90, -80) (2941) (23.69%)
- [-80, Max] (1311) (10.56%)

VoLTE			
Overall RSRP	# Samples	% PDF	Legends
[Max, >=-80]	1311	10.56	
[-80, >=-90)	2941	23.69	
[-90, >=-110)	6953	56.01	
[-110, >=Min)	1208	9.73	
Total	12413	99.99	

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For measuring voice quality, as per the QoS norms, RxQual <=5 for GSM TSPs, EcNo >= -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 ≥ 95%.

TSP	Rx Quality %
Airtel 2G	93.21
BSNI 2G	85.55
VIL 2G	84.36
BSNL 3G	85.16
VIL 3G	NA
Airtel VoLTE	80.03
Jio VoLTE	81.84
VIL VoLTE	80.99
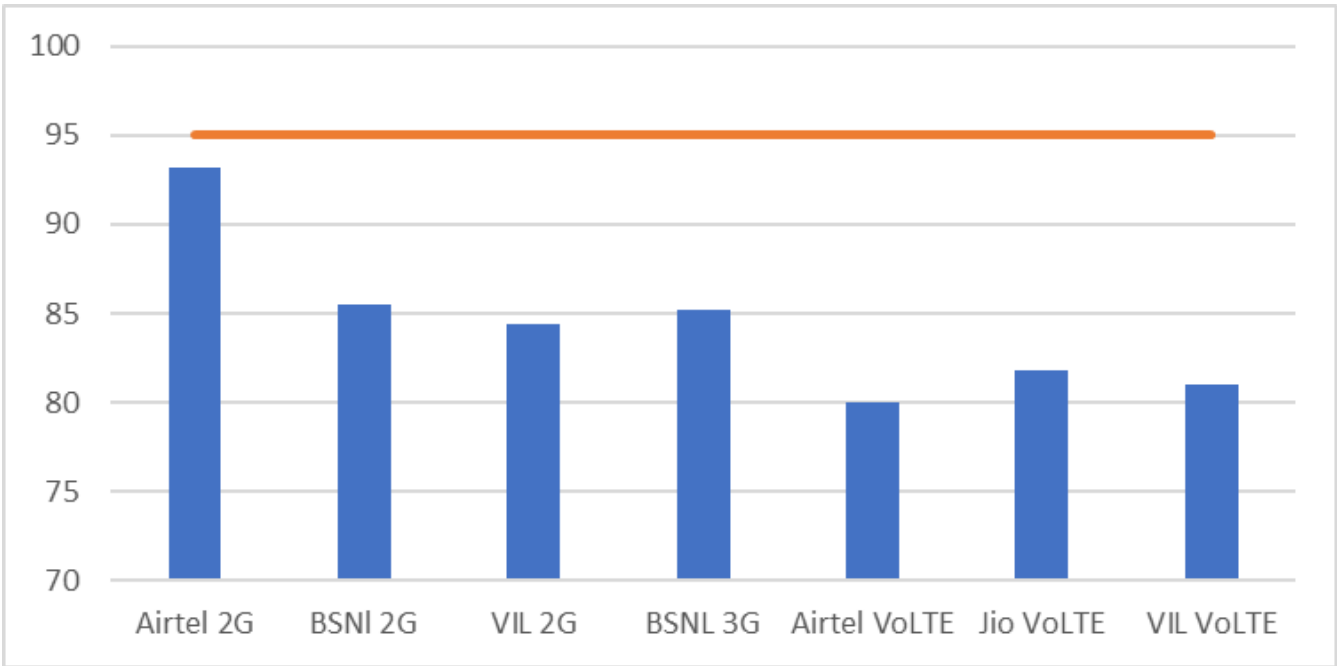
For measuring voice quality, as per the QoS norms, RxQual <=5 for GSM TSPs, EcNo >= -14 dBm for 3G TSP sand SINR >0 in case of VoLTE is considered to be good, where as quality beyond this benchmark is considered to be bad. The benchmark should usually be ≥ 95%.

TSP- Airtel

Technology	Rx Quality %
2G	93.21
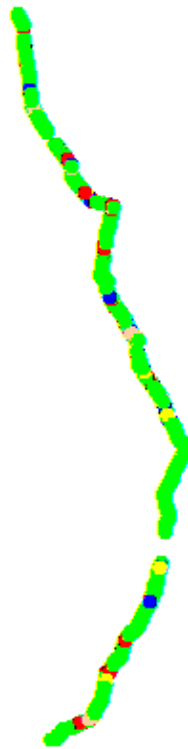
Overall Rx Quality	# Samples	% PDF	Legends
(Min, <=2)	2322471	82.36	🟩
(2, <=3)	72254	2.56	🟨
(3 , <=4)	83010	2.94	🟦
(4 , <=5)	150775	5.35	🟧
(5 , <=Max)	191381	6.79	🟥
Total	2819891	100	

For measuring voice quality, as per the QoS norms, RxQual <=5 for GSM TSPs, EcNo >= -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 ≥ 95%.

TSP- BSNL

Technology	Rx Quality %
2G	85.55 %

Legend

BPL-ND 2G RXQUAL_

- –1 to 2 (2059948)
- 2 to 3 (80234)
- 3 to 4 (93113)
- 4 to 5 (108107)
- 5 to 7 (395179)

Overall Rx Quality	# Samples	% PDF	Legends
(Min, <=2)	2059948	75.27%	
(2, <=3)	80234	2.93%	
(3 , <=4)	93113	3.40%	
(4 , <=5)	108107	3.95%	
(5 , <=Max)	395179	14.44%	
Total	2736581	100%	

For measuring voice quality, as per the QoS norms, RxQual <=5 for GSM TSPs, EcNo >= -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 ≥ 95%.

TSP- Vi

Technology	Rx Quality %
2G	84.36
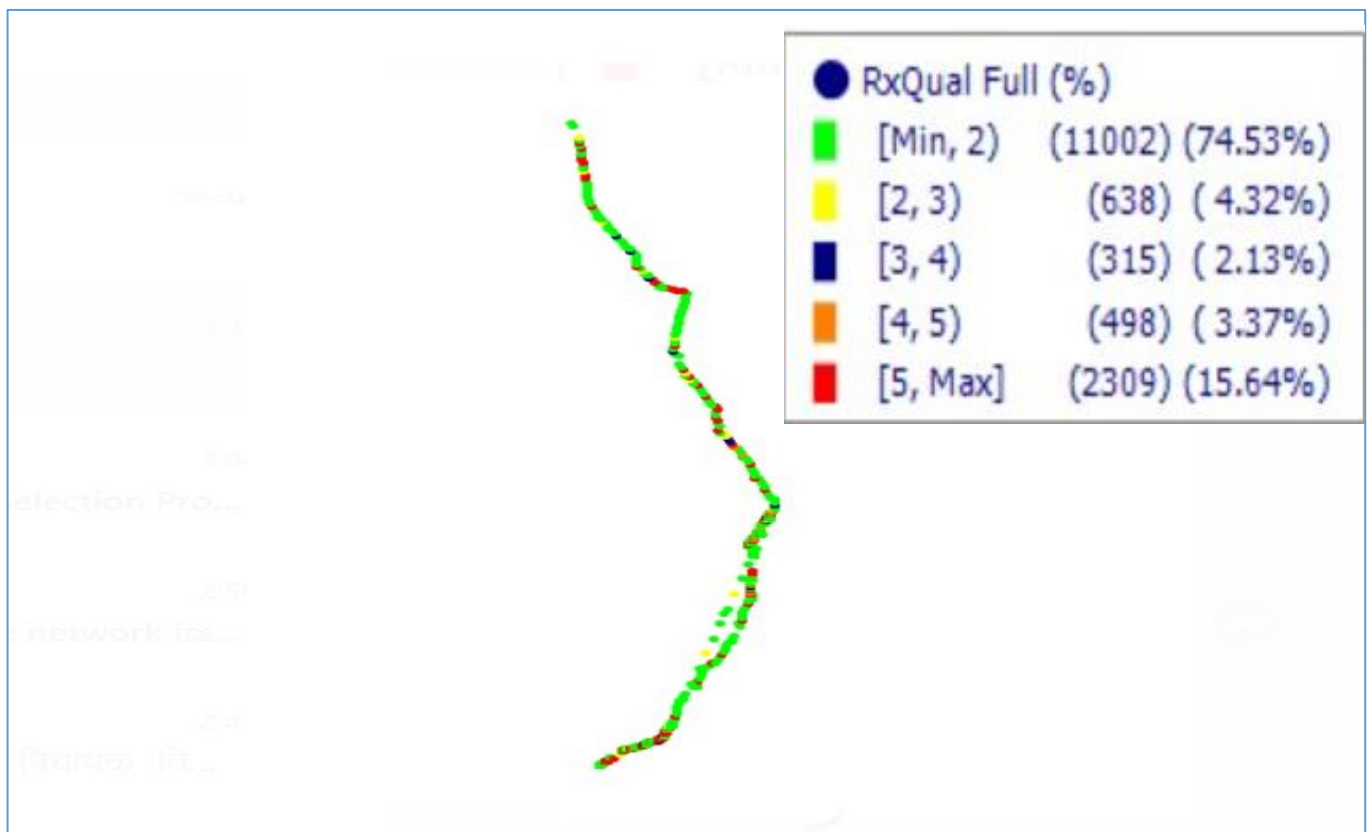
Overall Rx Quality	# Samples	% PDF	Legends
(Min, <=2)	11002	74.53	
(2, <=3)	638	4.32	
(3 , <=4)	315	2.13	
(4 , <=5)	498	3.37	
(5 , <=Max)	2309	15.64	
Total	14762	99.99	

For measuring voice quality, as per the QoS norms, RxQual <=5 for GSM TSPs, EcNo >= -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 ≥ 95%.

TSP- BSNL

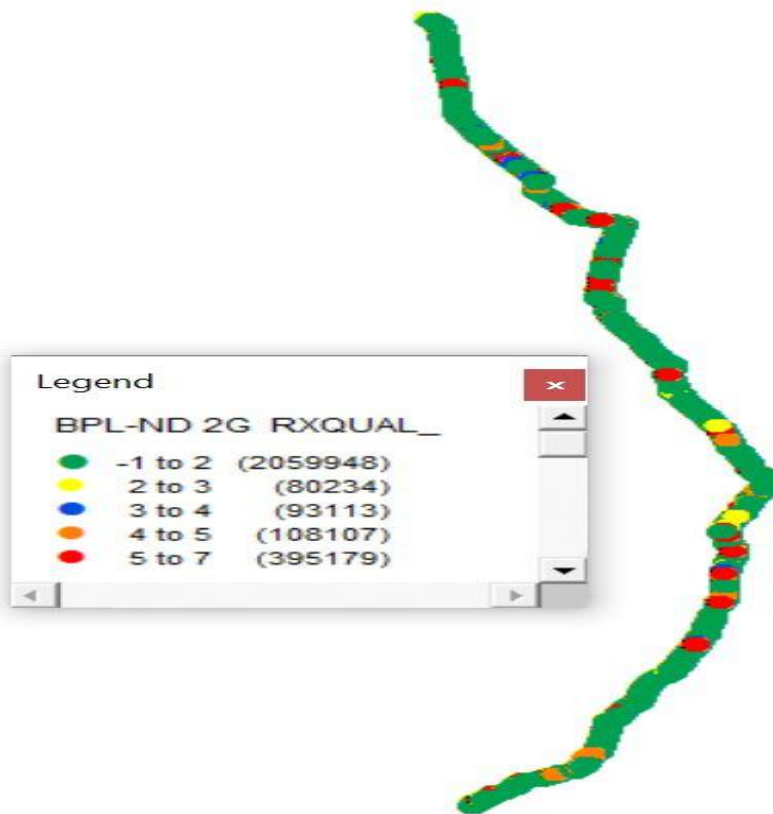| Technology	Rx Quality %
3G	85.16 %

Legend

BPL-ND 3G EcNo

- ● -6 to 0 (125331)
- ● -9 to -6 (160065)
- ● -11 to -9 (170538)
- ● -14 to -11 (121779)
- ● -25 to -14 (100638)

Overall Ec/No	# Samples	% PDF	Legends
(Max, <=-6)	125331	18.48%	(green)
(-6, <=-9)	160065	23.60%	(yellow)
(-9, <=-11)	170538	25.14%	(blue)
(-11, <=-14)	121779	17.95%	(orange)
(-14, <= Min)	100638	14.84%	(red)
Total	678351	**100%**	

For measuring voice quality, as per the QoS norms, RxQual <=5 for GSM TSPs, EcNo >= -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 ≥ 95%.

TSP- Airtel

Technology	Rx Quality %
VoLTE	**80.03**

Overall SINR	# Samples	% PDF	Legends
(Min, <=0)	1256645	19.97	
(0, <=5)	1619708	25.74	
(5, <=10)	2397360	38.10	
(10, <=15)	730213	11.60	
(15, <=Max)	289026	4.59	
Total	6292952	**100**	

For measuring voice quality, as per the QoS norms, RxQual <=5 for GSM TSPs, EcNo >= -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 ≥ 95%.

TSP- JIO

| Technology	Rx Quality %
VoLTE	81.84%
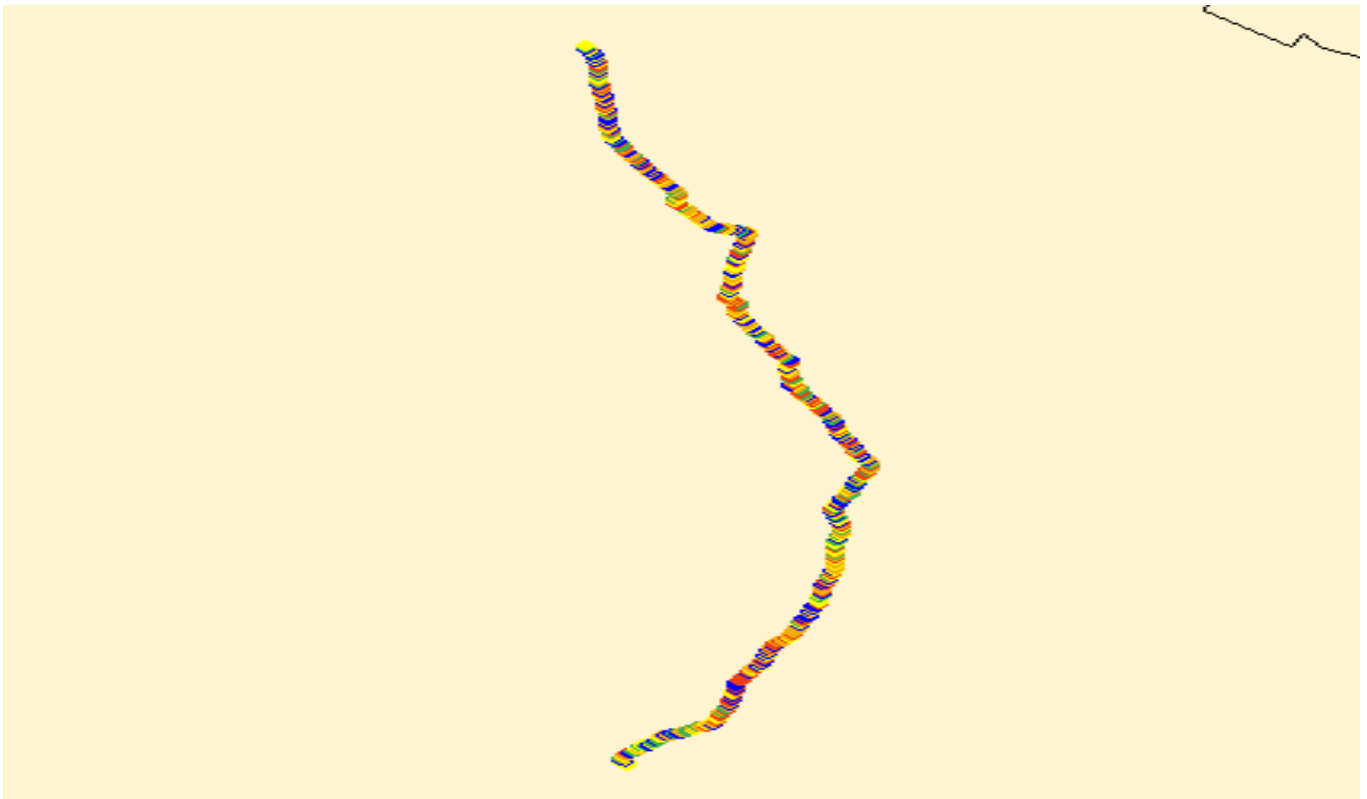
Overall SINR	# Samples	% PDF	Legends
(Min, <=0)	4812	18.16	
(0, <=5)	6941	26.19	
(5, <=10)	6594	24.88	
(10, <=15)	4631	17.47	
(15, <=Max)	3523	13.29	
Total	26501	100	

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For measuring voice quality, as per the QoS norms, RxQual <=5 for GSM TSPs, EcNo >= -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 ≥ 95%.

TSP- Vi

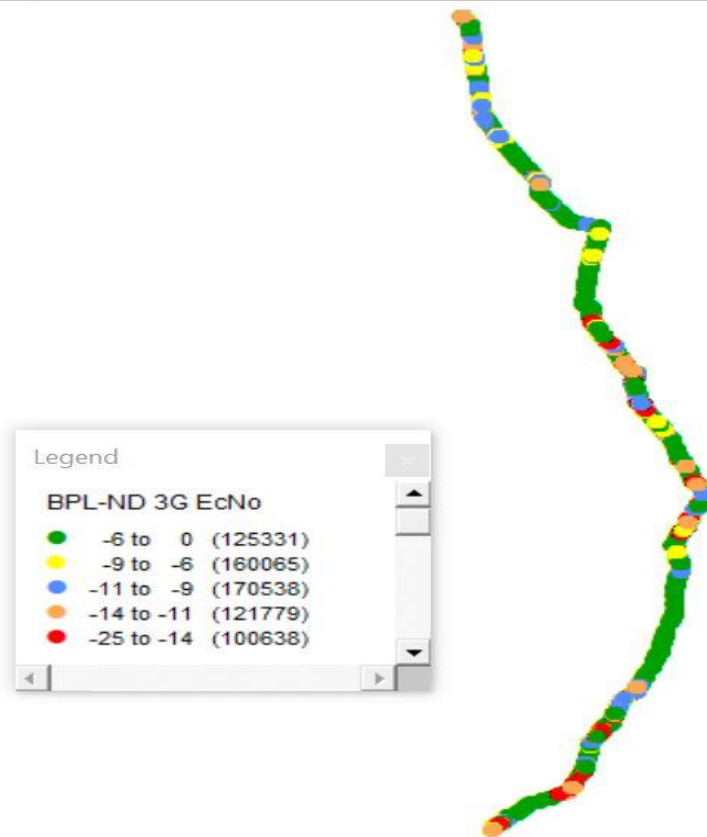| Technology	Rx Quality %
VoLTE	80.99
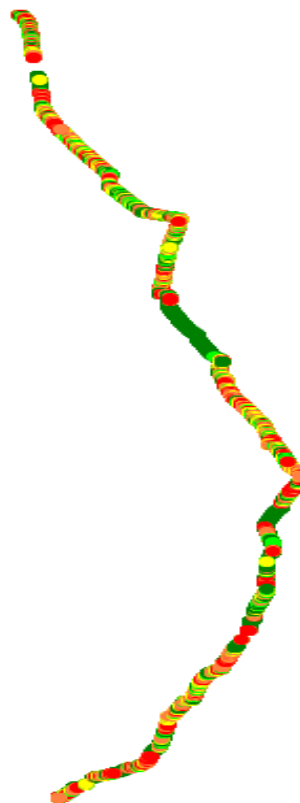
RS SINR Carrier 1 (dB)
- [Min, 0) (2360) (19.01%)
- [0, 5) (3163) (25.48%)
- [5, 10) (2825) (22.76%)
- [10, 15) (2126) (17.13%)
- [15, Max] (1940) (15.63%)

Overall SINR	# Samples	% PDF	Legends
(Min, <=0)	2360	19.01	
(0, <=5)	3163	25.48	
(5, <=10)	2825	22.76	
(10, <=15)	2126	17.13	
(15, <=Max)	1940	15.63	
Total	12414	100	

TSP	% of Time Spent on 3G/VoLTE
BSNL 3G	90.41
VIL 3G	NA
Airtel VoLTE	100
BSNL VoLTE	NA
Jio VoLTE	100
VIL VoLTE	77.22

% of Time Spent on 3G/VoLTE

24
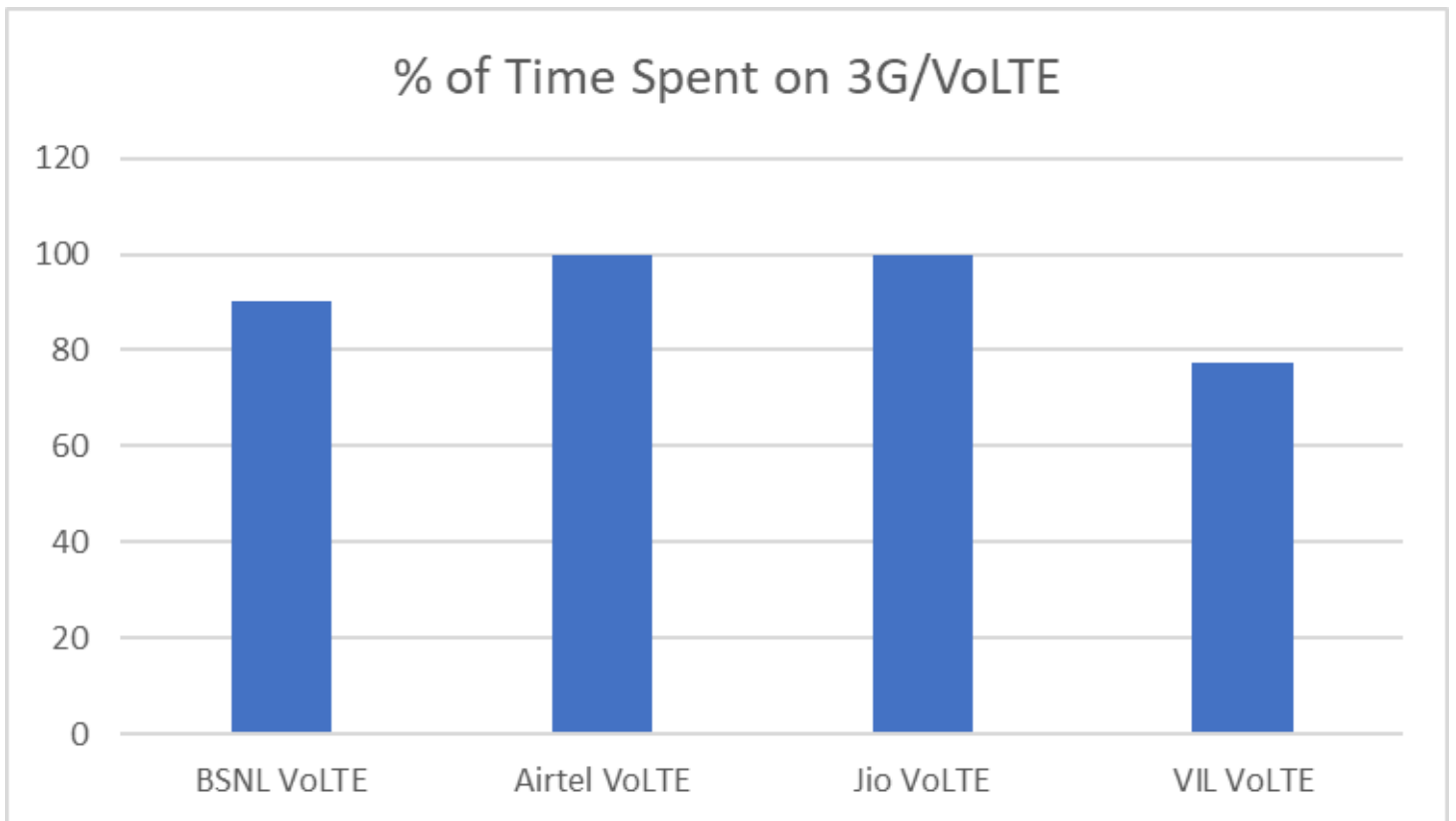
TSP- Airtel

Technology	% of Time Spent on
3G	
VoLTE	100

TSP-BSNL

Technology	% of Time Spent on
3G	90.41%
VoLTE	NA

Legend

BPL New Delhi Tech Split 3G -2G

● -95 to 0 (1907595)
● -120 to -95 (202435)
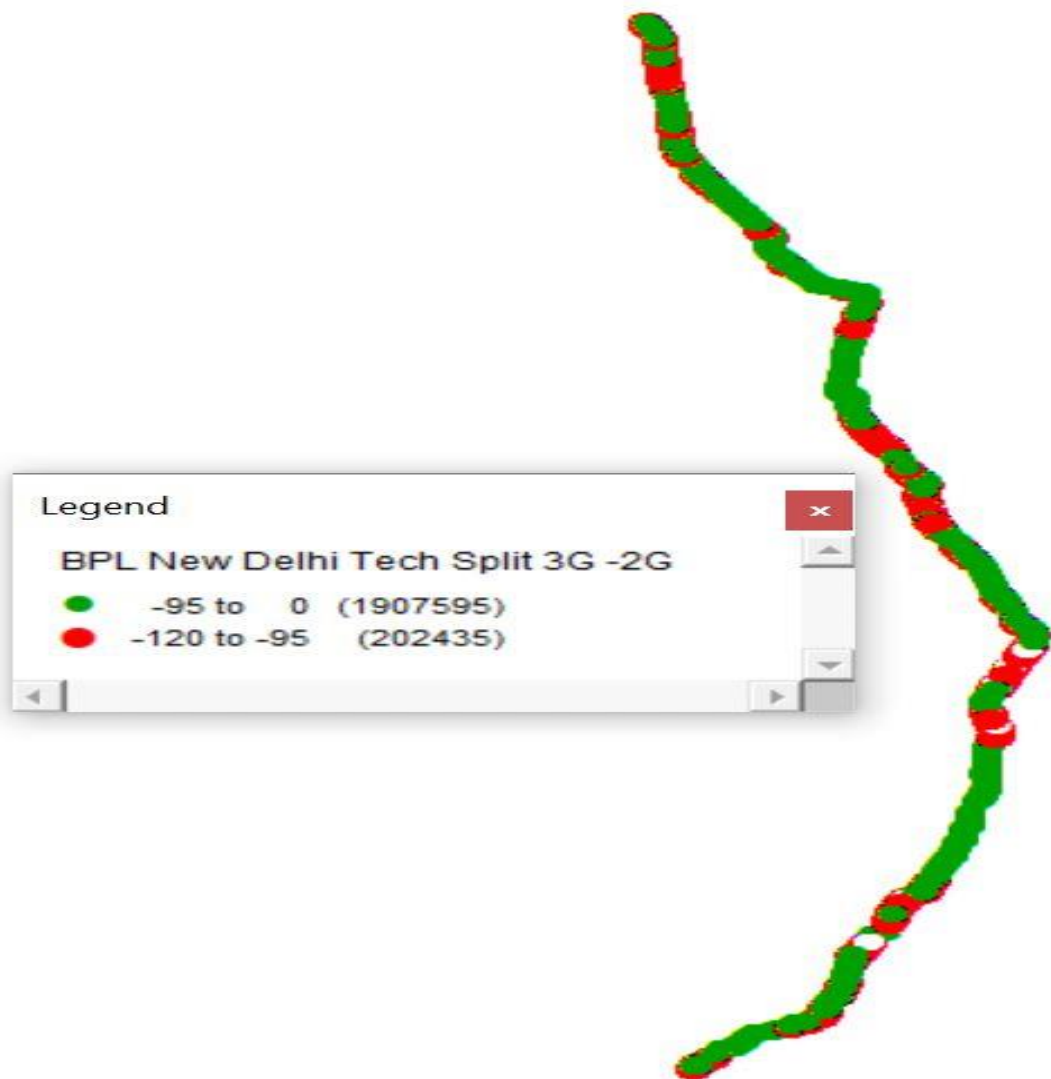
TSP- Jio

Technology	% of Time Spent on
3G	NA
VoLTE	100%

Band 3 (45.55%, 12072)
Band 40 (7.31%, 1937)
Band 5 (47.14%, 12492)
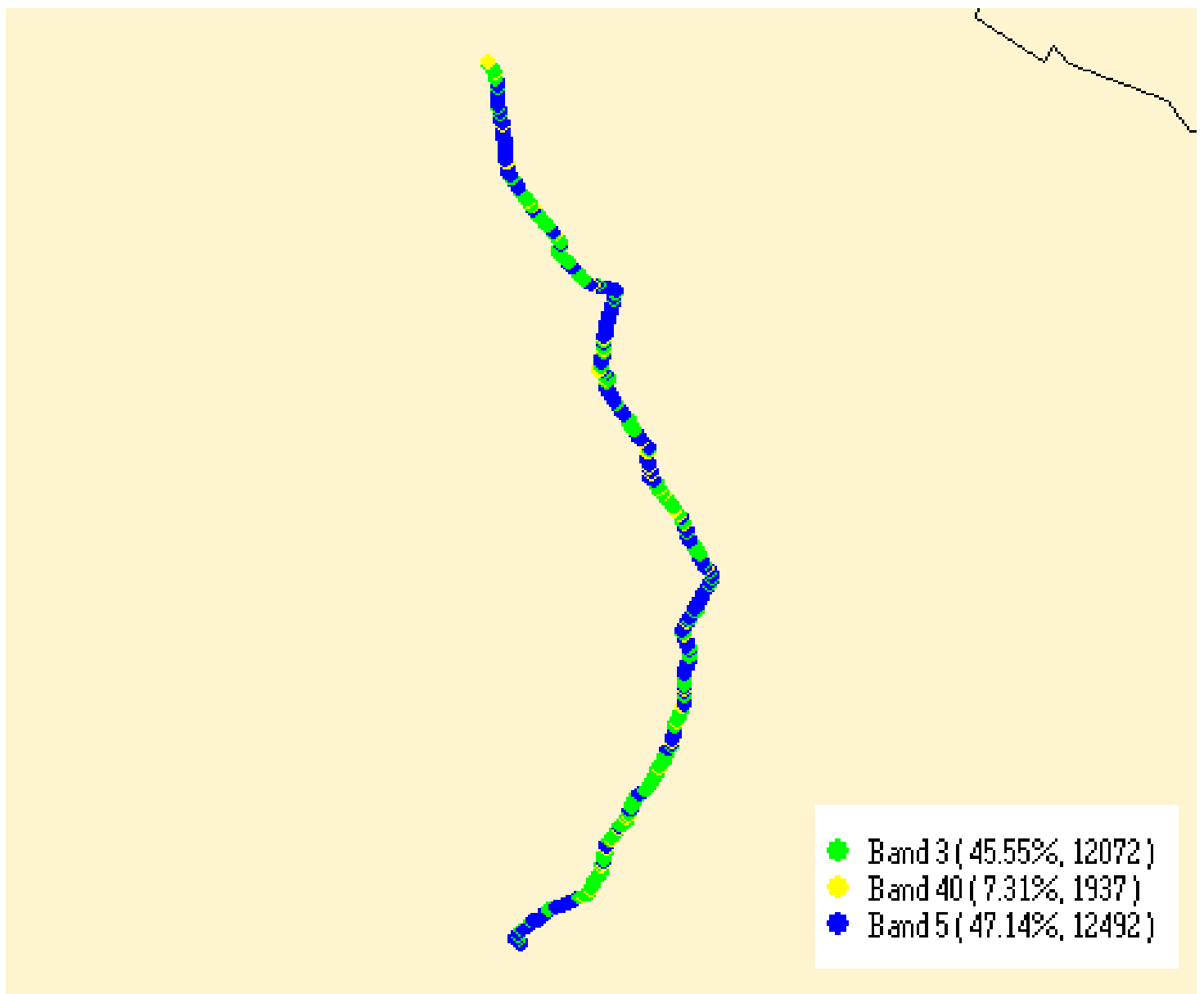
TSP- Vi

Technology	% of Time Spent on
3G	NA
VoLTE	77.22

TIME SPEND
GSM 22.78
LTE   77.22
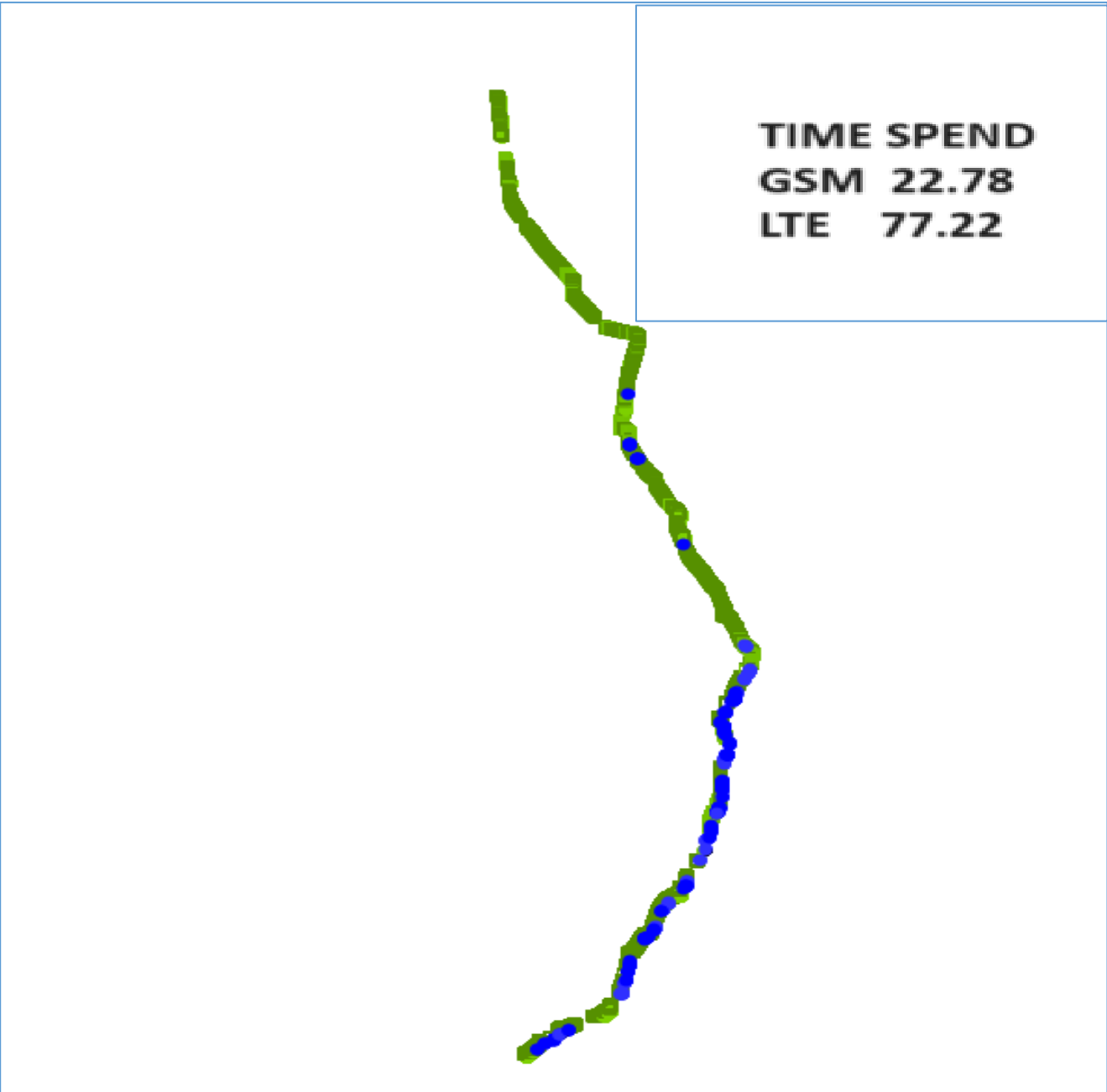
TSP- BSNL

Data Statistics - Dynamic data testing

Data KPIs - Overall	3G
Download Throughput (Mbps)	2.4 Mbps

Legend

BPL__New_Delhil ThroughputTotalkbits
- 1 to 1,000 (622217)
- 1,000 to 5,000 (712751)
- 5,000 to 10,000 (45354)
- 10,000 to 50,000 (1678)
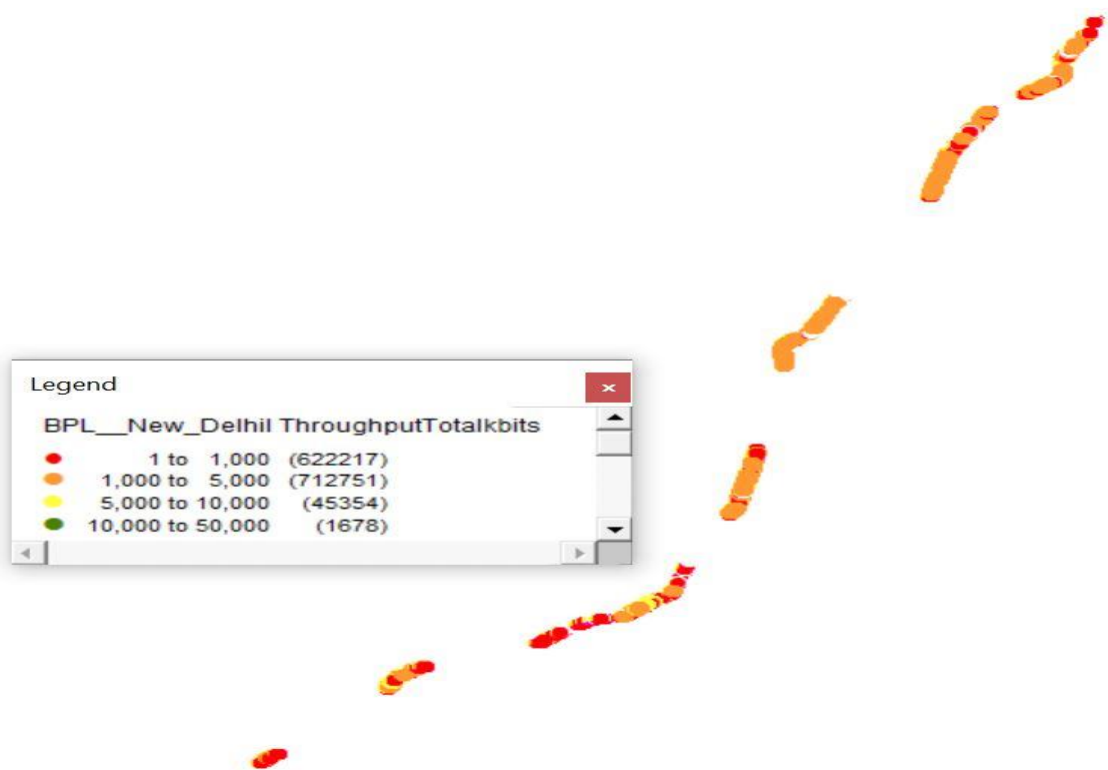
DL throughput	No of Sample	%	Legends
< 1 Mbps	622217	45.02%	
1-5 Mbps	712751	51.57%	
5-10 Mbps	45354	3.28%	
>10Mbps	1678	0.12%	

Dynamic Data Test Details

Dynamic Data Test

TSP- Airtel

Data Statistics - Dynamic data testing

Data KPIs - Overall	LTE
Download Throughput (Mbps)	**3.22**

DL throughput	No of Sample	%	Legends
< 2Mbps	2204541	35.22	
2-5 Mbps	2959690	47.28	
5-10 Mbps	711578	11.37	
>10Mbps	383722	6.13	

Dynamic Data Test Details

TSP-Jio

Data Statistics - Dynamic data testing

Data KPIs - Overall	LTE
Download Throughput (Mbps)	6.08
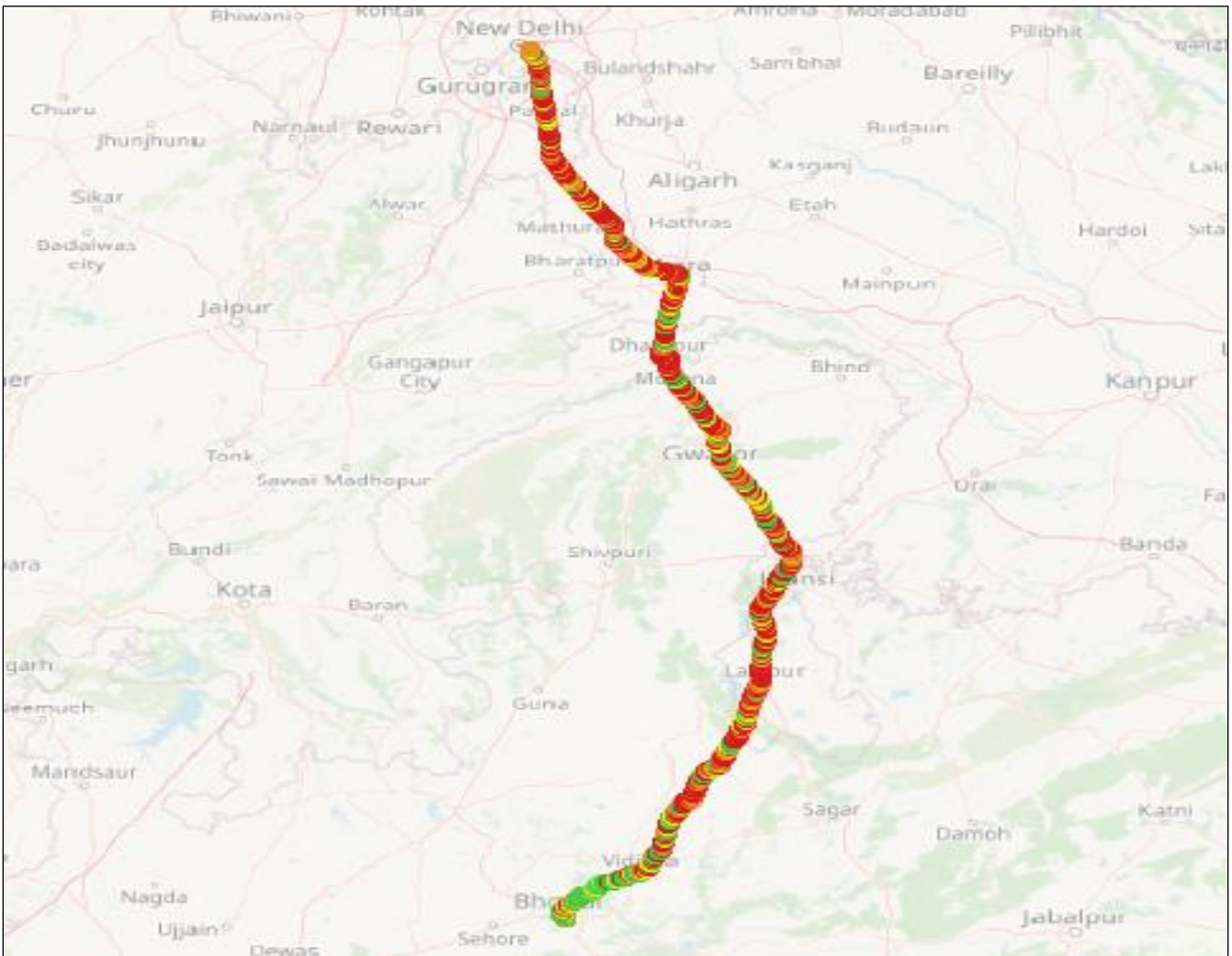
DL throughput	No of Sample	%	Legends
< 2Mbps	11762	50.02	
2-5 Mbps	4844	20.60	
5-10 Mbps	3380	14.38	
>10Mbps	3527	15.00	

Dynamic Data Test Details

Dynamic Data Test

TSP- Vi

Data Statistics - Dynamic data testing

Data KPIs - Overall	LTE
Download Throughput (Mbps)	**8.13**

PDSCH Phy Throughput Carrier 1 (kbps)

🔴	[Min, 2000)	(5221)	(40.41%)
🟧	[2000, 5000)	(2736)	(21.18%)
🟨	[5000, 10000)	(2001)	(15.49%)
🟩	[10000, Max]	(2961)	(22.92%)
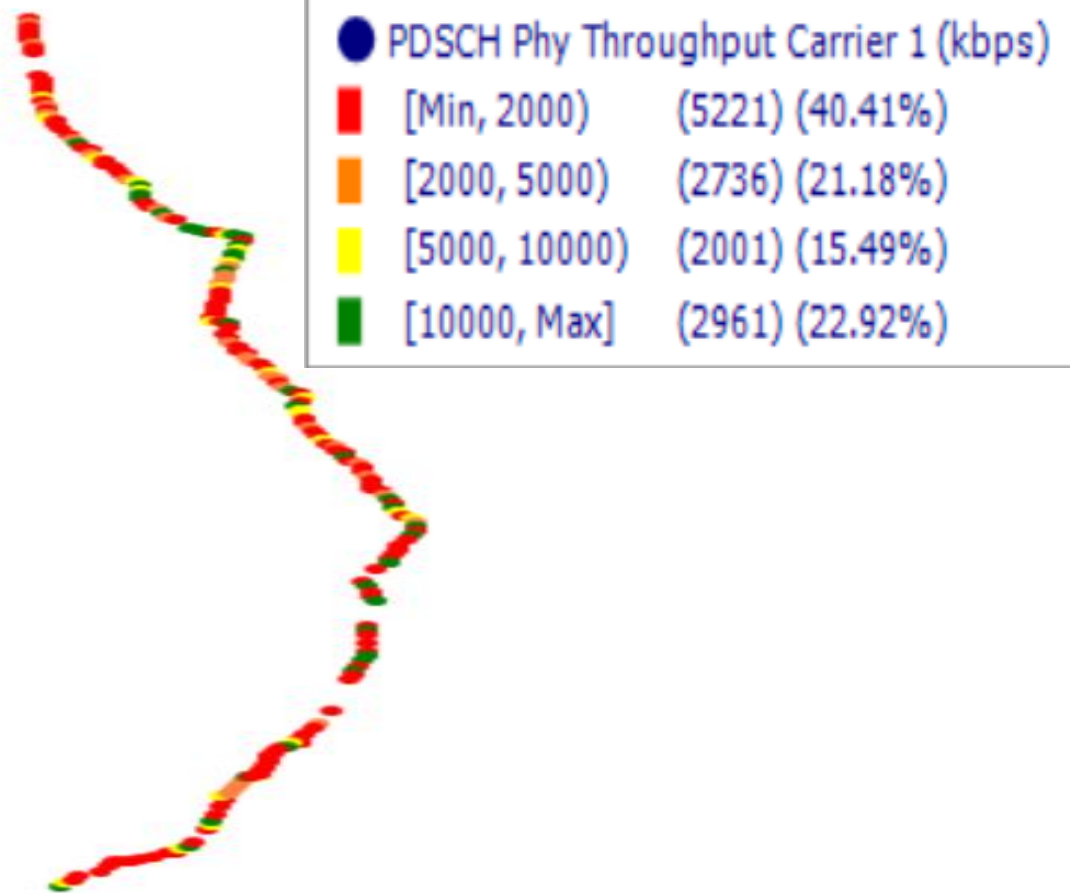
DL throughput	No of Sample	%	Legends
< 2Mbps	5221	40.41	🟥
2-5 Mbps	2736	21.18	🟧
5-10 Mbps	2001	15.49	🟨
>10Mbps	2961	22.92	🟩

Dynamic Data Test Details

TSP- Airtel

Non / poor coverage area – 41.5 Kms i.e. around 5.9 % of the route

Sn	Patch Name	Circle	Inter Site Distance in KM	Remark (No coverage / Poor coverage / other)
1	Sumerbarri	MP	3KM	Poor Caoverage
2	Chulheta	MP	3.8KM	Poor Caoverage
3	Kachnoda	MP	4.2KM	Poor Caoverage/Quality
4	Mohasa	MP	4.8KM	Poor Caoverage/Quality
5	Near Panihar Station	MP	1.7KM	Poor Caoverage/Quality
6	Jakhlaun	UPE	3.2KM	Poor Caoverage
7	Farah	UPW	4.1 KM	Poor Caoverage/Quality
8	Chata	UPW	4.3 KM	Poor Caoverage
9	Bhahi	UPW	3.8 Km	Poor Caoverage
10	Near Jhansi	UPE	3.6 Km	Poor Caoverage
11	Gher	RAJ	>5 Km	Poor Coverage/No coverage

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TSP-BSNL

Non / poor coverage area – 137 Kms i.e. around 19.57 % of the route

Sn	Patch Name	Circle	Inter Site Distance in KM	Remark (No coverage / Poor coverage / other)	Plan to improve coverage
1	Sukhisewaniya	MP		No Coverage	New Site may be Planned
2	Deewanganj		16	No Coverage	New Site may be Planned
3	AgricultureColgGjb	MP		No Coverage	New Site may be Planned
4	Bareth/Purwai		25	No Coverage	New Site may be Planned
5	Mandibamora	MP		No Coverage	New Site may be Planned
6	BinaRlyStnIP		18	No Coverage	New Site may be Planned
7	Basari	MP		No Coverage	New Site may be Planned
8	Dhura	UP East	27	No Coverage	New Site may be Planned
9	Dailwara	UP East		No Coverage	New Site may be Planned
10	Bijrotha		19	No Coverage	New Site may be Planned
11	Basai	UP East		No Coverage	New Site may be Planned
12	Babina		13	No Coverage	New Site may be Planned
13	Karari	UP East		No Coverage	New Site may be Planned
14	Chirula	MP	6	No Coverage	New Site may be Planned
15	Banchari	Haryana		No Coverage	New Site may be Planned
16	Rundhi		13	No Coverage	New Site may be Planned

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Dynamic Data Test Details

TSP-Jio

Non / poor coverage area – 121.5 Kms i.e. around 17.36 % of the route

Sn	Patch Name	Circle	Inter Site Distance in KM	Remark (No coverage / Poor coverage / other)
1	Near Sanchi	MP	2.5KM	Poor coverage
2	Gram- Barakheda,Sorai Road,Vidisha, Madhya Pradesh 464001	MP	3.6KM	Other (no drive)
3	Santapur, Madhya Pradesh 464220	MP	4.9KM	Poor coverage
4	Mahagaur, Madhya Pradesh 464221	MP	4.7KM	Poor coverage
5	Hathoda,Ganj Basoda, Madhya Pradesh 464221	MP	3.1KM	Poor coverage
6	Purwai, Madhya Pradesh 464240	MP	5.1KM	Poor coverage
7	Kulhar,Madhya Pradesh 464240	MP	4.6KM	Poor coverage
8	Gudawal, Madhya Pradesh 464240	MP	4.6KM	Poor coverage
9	Belai, Madhya Pradesh 470118	MP	4.3KM	Poor coverage
10	Barodiya,Bina, Madhya Pradesh 470113	MP	4.8KM	Poor coverage
11	Dhaurra Hill	UP-E	5.5KM	Poor coverage
12	Govind Sagar Dam	UP-E	5.4KM	Poor coverage
13	Vill Kodran	UP-E	3.8KM	Poor coverage
14	Talbehat Bypass Crossing	UP-E	5.2KM	Poor coverage
15	Bardhuwan,Madhya Pradesh 473995	MP	3.0KM	Poor coverage
16	Babina Railway Station	UP-E	3.4KM	Poor coverage
17	AC Loco Shed	UP-E	4.8KM	Poor coverage
18	Pulia No.9	UP-E	1.4KM	Poor coverage
19	Simardha	UP-E	4.6KM	Poor coverage
20	NEAR Bamrol, Madhya Pradesh 475685	MP	4.2KM	Poor coverage
21	Gwalior Route Railway Tunnel	MP	6.6KM	No coverage
22	Nagor Bypass Bridge Gwalior S Byp,Badori, Madhya Pradesh 475001	MP	2.2KM	Poor coverage
23	Piprai, Madhya Pradesh 476001	MP	3.5KM	Poor coverage
24	Gher, Dhaulpur	RJ	5.2KM	Poor coverage
25	Gher, Dhaulpur	RJ	5.2KM	Poor coverage
26	Doon Ka Pura, Dhaulpur	RJ	4.6KM	Poor coverage
27	Ladampur, Dhaulpur	RJ	3.8KM	Poor coverage
28	Baghcholi Khar, Dhaulpur	RJ	3.2KM	Poor coverage
29	Near Agra cant	UP-W	0.2KM	Poor coverage
30	Near Runakta	UP-W	1.1KM	Poor coverage
31	Near Vrindavan Road Station, Mathura 281001	UP-W	0.7KM	Poor coverage
32	Near Chhata Railway Station, Mathura 281401	UP-W	0.8KM	Poor coverage
33	Near Bhulwana Hodal(Haryana) 121106	Haryana	0.9KM	Poor coverage
34	Near Sholaka, Hodal(Haryana) 121106	Haryana	1.6KM	Poor coverage
35	Piyala(Haryana) 121004	Haryana	1.5KM	Poor coverage
36	Piyala(Haryana) 121004	Haryana	1.5KM	Poor coverage
37	ICL Palwal Hind Terminal Pvt Ltd(Haryana) 121102	Haryana	1.1KM	Poor coverage

Dynamic Data Test Details

TSP- Vi

Non / poor coverage area list- 125.9 Kms i.e. 17.98% of the route

Sn	Patch Name	Circle	Inter Site Distance in KM	Remark (No coverage / Poor coverage / other)
1	Sukhi Sewaniya	MPC	8	Hilly Terrain
2	Dob To Balampur	MPC	6	Hilly Terrain
3	Balampur to Deewanganj	MPC	4	Hilly Terrain
4	Salamatpur to Sanchi	MPC	7.5	Hilly Terrain
5	Sanchi To Vidisha	MPC	7	Open Area
6	Vidisha To Gulabganj	MPC	17	Open Area
7	Gulabganj to pawai	MPC	8	Open Area
8	Ganjbasoda to Bhagarru	MPC	7.5	Open Area
9	Bhagarru to Kulhar	MPC	8.8	Open Area
10	Kulhar to Gudawal	MPC	7.5	Open Area
11	Mandi Bamora to Padariya	MPC	10.7	Open Area
12	Bina to Bhangarh	MPC	15	Open Area
13	Chambal Bridge	MPC	5	Hilly Terrain
14	Choundha toll Plaza to Nurabad	MPC	9.5	Open Area
15	Banmore to Rayaru	MPC	4.4	Open Area

Dynamic Data Test Details

TSP- Airtel

Plan to improve the converge in this route

Sn	Patch Name	Circle	Inter Site Distance in KM	Remark (No coverage / Poor coverage / other)	Improvement Plan
1	Sumerbarri	MP	3KM	Poor Caoverage	Optimization
2	Chulheta	MP	3.8KM	Poor Caoverage	Optimization
3	Kachnoda	MP	4.2KM	Poor Caoverage/Quality	New Site Plan
4	Mohasa	MP	4.8KM	Poor Caoverage/Quality	New BTS Required
5	Near Panihar Station	MP	1.7KM	Poor Caoverage/Quality	Optimization
6	Jakhlaun	UPE	3.2KM	Poor Caoverage	Optimization
7	Farah	UPW	4.1 KM	Poor Caoverage/Quality	New Site Plan
8	Chata	UPW	4.3 KM	Poor Caoverage	New BTS Required
9	Bhahi	UPW	3.8 Km	Poor Caoverage	New BTS Required
10	Near Jhansi	UPE	3.6 Km	Poor Caoverage	New Site Plan
11	Gher	RAJ	>5 Km	Poor Caoverage/No coverage	ISD >5 KM high amsl variation and vegetation area BTS Required

Dynamic Data Test Details

TSP-Jio

Plan to improve the converge in this route

S No	Location name	Circle	ACTION
1	Near Sanchi	MP	New site require
2	Gram- Barakheda,Sorai Road,Vidisha, Madhya Pradesh 464001	MP	Handset Issue
3	Santapur, Madhya Pradesh 464220	MP	Optimization
4	Mahagaur, Madhya Pradesh 464221	MP	New site require
5	Hathoda,Ganj Basoda, Madhya Pradesh 464221	MP	Optimization
6	Purwai, Madhya Pradesh 464240	MP	Optimization
7	Kulhar,Madhya Pradesh 464240	MP	Optimization
8	Gudawal, Madhya Pradesh 464240	MP	Optimization
9	Belai, Madhya Pradesh 470118	MP	Optimization
10	Barodiya,Bina, Madhya Pradesh 470113	MP	New site require
11	Dhaurra Hill	UP-E	Optimization
12	Govind Sagar Dam	UP-E	Optimization
13	Vill Kodran	UP-E	Optimization
14	Talbehat Bypass Crossing	UP-E	Optimization
15	Bardhuwan,Madhya Pradesh 473995	MP	Optimization
16	Babina Railway Station	UP-E	New site require
17	AC Loco Shed	UP-E	New site require
18	Pulia No.9	UP-E	Optimization
19	Simardha	UP-E	New site require
20	NEAR Bamrol, Madhya Pradesh 475685	MP	Optimization
21	Gwalior Route Railway Tunnel	MP	New site require
22	Nagor Bypass Bridge Gwalior S Byp,Badori, Madhya Pradesh 475001	MP	Optimization
23	Piprai, Madhya Pradesh 476001	MP	New site require
24	Gher, Dhaulpur	RJ	Optimization
25	Gher, Dhaulpur	RJ	New site require
26	Doon Ka Pura, Dhaulpur	RJ	New site require
27	Ladampur, Dhaulpur	RJ	Optimization
28	Baghcholi Khar, Dhaulpur	RJ	Optimization
29	Near Agra cant	UP-W	Optimization
30	Near Runakta	UP-W	Optimization
31	Near Vrindavan Road Station, Mathura 281001	UP-W	Optimization
32	Near Chhata Railway Station, Mathura 281401	UP-W	Optimization
33	Near Bhulwana Hodal(Haryana) 121106	Haryana	Optimization
34	Near Sholaka, Hodal(Haryana) 121106	Haryana	Optimization
35	Piyala(Haryana) 121004	Haryana	Optimization
36	Piyala(Haryana) 121004	Haryana	Optimization
37	ICL Palwal Hind Terminal Pvt Ltd(Haryana) 121102	Haryana	Optimization

Dynamic Data Test Details

TSP- Vi

Plan to improve the converge in this route

Sn	Patch Name	Circle	Inter Site Distance in KM	Remark (No coverage / Poor coverage / other)
1	Sanchi To Vidisha	MPC	7	Optimization Planned
2	Chambal Bridge	MPC	5	Optimization Planned
3	Banmore to Rayaru	MPC	4.4	Optimization Planned

Dynamic Data Test Details