

Operator Assisted Drive Test Report

South Andaman District, Swaraj Dweep & Shaheed Dweep Islands

Andaman & Nicobar Islands

January, 2025

(RO, Kolkata)

Key Performance Indicators (KPIs):

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

AIRTEL- Rx Quality in 4G (SINR) network.

BSNL- Rx Quality in 2G & 4G (SINR) network.

RJIO- Rx Quality in 4G (SINR) network.

VIL- Drop Call Rate in 4G Network, Rx Quality in 2G & 4G (SINR) network.

VIL did not have any 3G/4G coverage in Swaraj Dweep & Shaheed Dweep Islands only 2G coverage was available in Swaraj Dweep Island.

RJIO did not have any 4G/5G coverage in Shaheed Dweep Island.

The Operator Assisted Drive Test has been carried out by Regional Office, Kolkata with the help of Service Providers in Swaraj Dweep & Shaheed Dweep Islands, and South Andaman District including National Highway 4. Coastal drives from Port Blair Jetty to Swaraj Dweep Jetty, Swaraj Dweep Jetty to Shaheed Dweep Jetty and Shaheed Dweep Jetty to Port Blair Jetty from 16th January 2025 to 20th January 2025, 08.30 AM to 06.00 PM. The road drive test covered drive route of 170 KMs (approx.) and costal drive test covered drive route of 94 KMs (approx.) over a period of five days. Approximately 260+ calls were made for each of the 7 networks: three 2G networks and four 4G networks covering four TSPs.

[Overview](#)[Voice Summary](#)[Data Summary](#)

Overview

South Andaman district is one of the 3 districts of the Indian Union Territory of Andaman and Nicobar Islands located in the Bay of Bengal. Sri Vijaya Puram, the capital of the Union Territory is the district headquarters.

Havelock Island, officially known as **Swaraj Dweep** is one of the largest islands within the Andaman Islands. It belongs to the South Andaman administrative district, part of the Indian union territory of Andaman and Nicobar Islands. The island is 41 km northeast of the capital city, Port Blair.

Neil Island, officially known as **Shaheed Dweep**, is an island of the Andaman Islands. It belongs to the South Andaman administrative district, part of the Indian union territory of Andaman and Nicobar Islands. The island is located 36 km northeast from Port Blair.

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 Upload Throughputs.

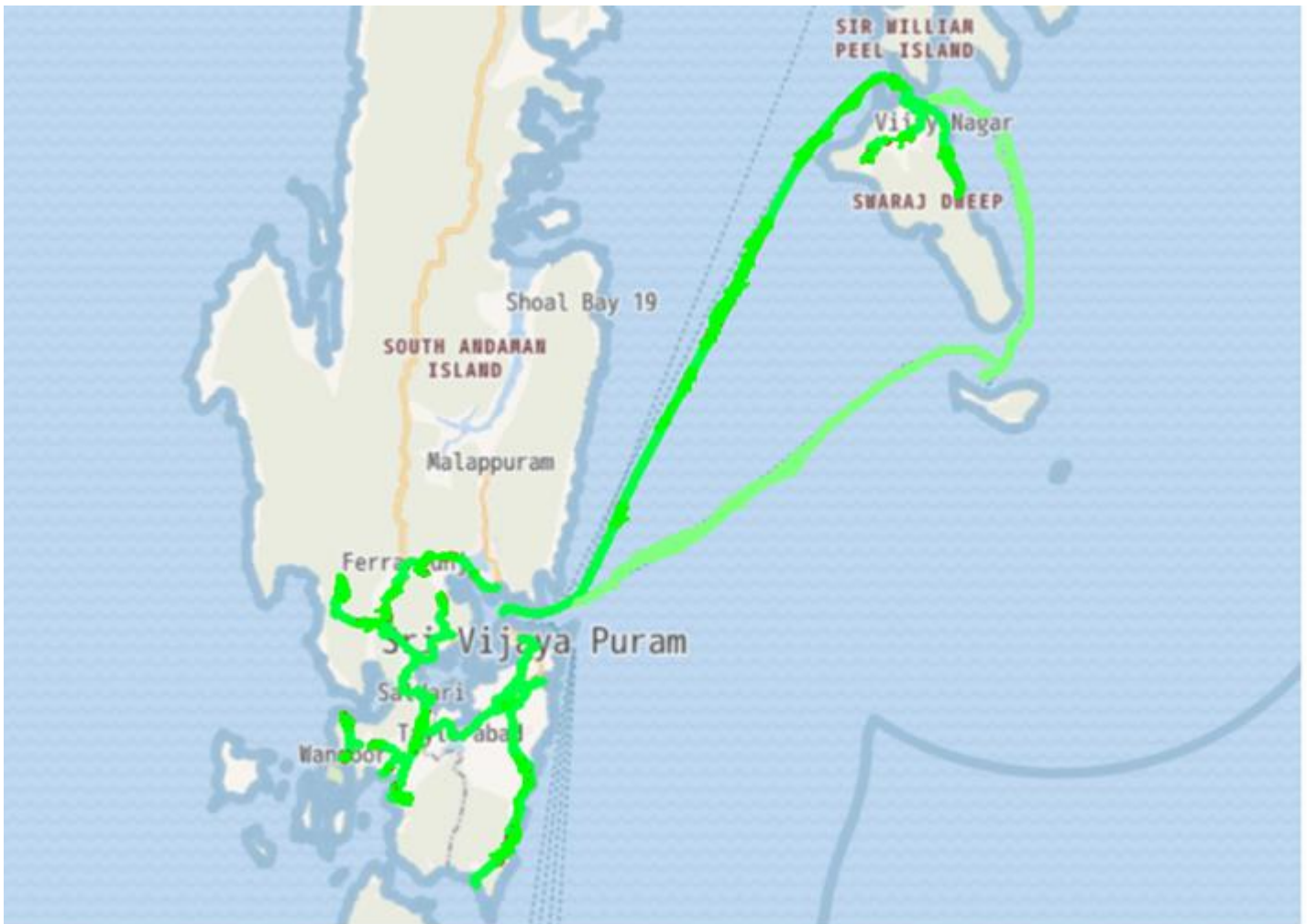
Voice Tests: Calls were made for 120 secs duration with wait time of 15 secs between call in 2G/ 3G on auto mode and 4G/ 5G on auto mode. Three 2G networks, one 3G network, Three 4G networks covering 4 unique TSPs were tested.

Data Tests: Dynamic Data Service Testing was performed along same route in 3G/4G/ 5G on auto mode. 250 MB file were downloaded and 125 MB file were uploaded from FTTP server in TSP's own server. Static Data Service Testing was also performed in 3G/ 4G / 5G on auto mode covering 4 unique TSPs were tested.

Service	Static Data Service Testing- Specifications
Download	250 MB in 3G/ 4G / 5G on auto mode
Upload	125 MB in 3G/ 4G / 5G on auto mode
Web Browsing	3 links of e/m commerce website www.amazon.in, www.flipkart.com and PayTm
Video Steaming	100 Sec Video & 125 sec Timeout
Latency	512 Bytes packet-- 1000 count on TSP own server using Ping.

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

Voice & Dynamic Data Test Drive Route



Drive Routes: Swaraj Dweep & Shaheed Dweep Islands and South Andaman District

DAY-1 Coastal Route on Ship/Vessel Port Blair – Havelock Jetty; Drive Test: Police Station, Havelock –Kala Pathar Beach –Kalapathar Public School – Satya Resort, Havelock Island; PWD Guest House – The Capture Crew, Govinda Nagar - Krishna Nagar and Shyam Nagar Post Office – Radha Nagar Beach.

DAY-2 Radhanagar Beach – Kala Pathar Beach – Elephanta Beach – Govinda Nagar Beach – Havelock Jetty – Government Hospital, Havelock – Kalapathar Chowk Market.

DAY-3 Coastal Route on Ship/Vessel from Havelock Island Jetty – Shaheed Dweep Island Jetty; Drive Test: Shaheed Dweep Island Jetty – Lakshmanpur – Island Scuba endless fun – Dream Garden Resort – Sunrise View Point, Sitapur Beach.

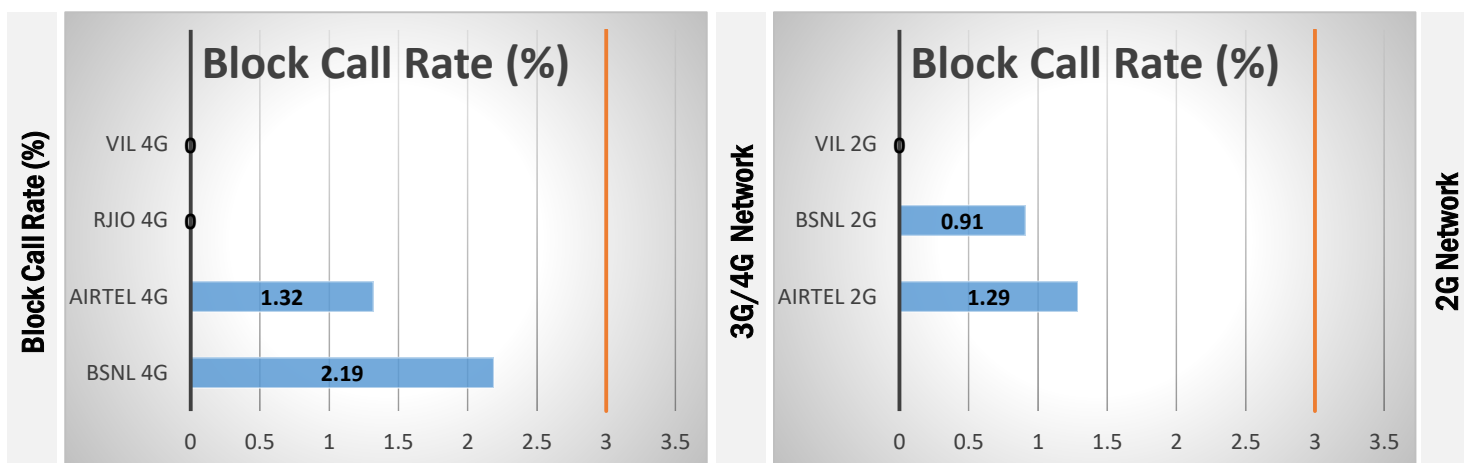
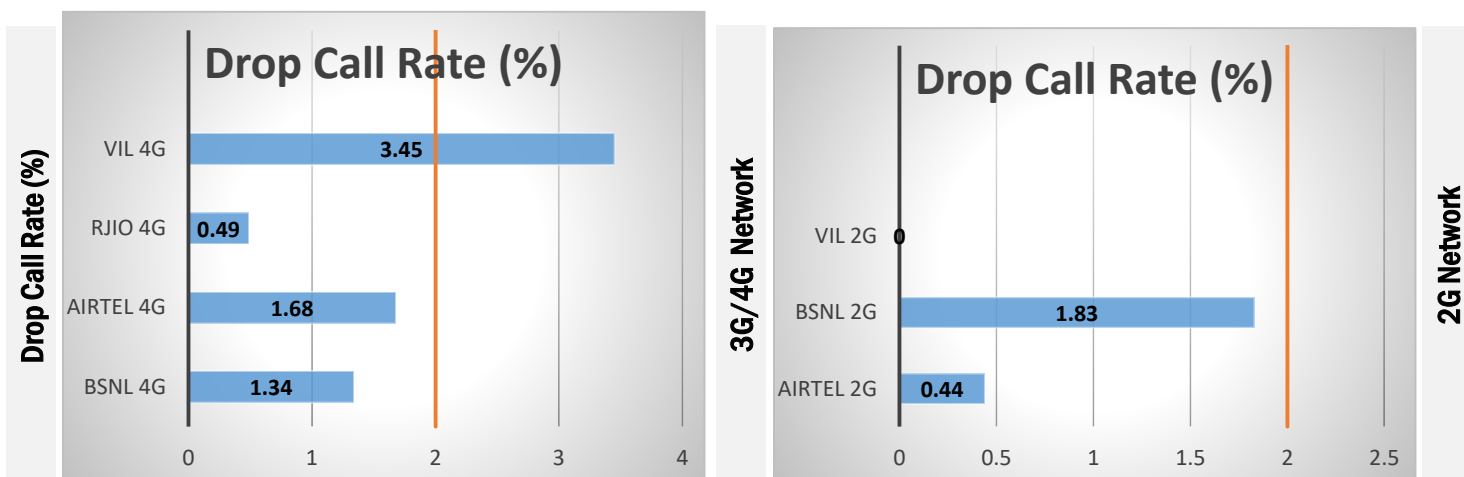
DAY-4 Coastal Route on Ship/Vessel Shaheed Dweep Island Jetty – Port Blair Jetty; Drive Test: Island Cliff Hotel - Port Blair-Veer Sarvarkar International Airport, Entry Point-Veer Savarkar International Airport, Exit Point-INS Utrkosh Gate-Bhatubasthi Bus Stand-Sangram Dwar-Forest Check Post-Carbyns Sunrise View Point-Rose Valley Sea View Point-Pradhan Office, Barmanalla-Kodiyaghat Beach-Chidiya Tapu Beach.

DAY-5 Guptapara Panchayat Office-Govt. Middle School, Mangulutan-Government PHC Mangulutan-Government Primary School, Indira Nagar-Mahatma Gandhi Marine National Park-Wandoor Jetty-Wandoor Beach-Government Primary School, West Wandoor-Humfrygunj Panchayat Office-Chouldari Panchayat Office-Lambakhadi Bus Stand-Collinpur Gram Panchayat Office-Government Senior Secondary School ,Tusnabad –Fire Station, Ferrargunj – Bambooflat Jetty –Government Secondary School, Namunaghar – CARI – Veer Savarkar Kayaling Club.

Data Service Test- Static Locations

Static Locations in Swaraj Dweep Islands
Radhanagar Beach
Kalapathar Beach
Swaraj Dweep Jetty
Govinda Nagar Beach
Elephanta Beach
Government Hospital
Kalapathar Chowk Market
Hotel Taj Exotica

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



KPIs	2G			4G	4G-VoLTE		
	AIRTEL	BSNL	VIL	BSNL	AIRTEL	RJIO	VIL
Drop Call Rate %	0.44	1.83	0.00	1.34	1.68	0.49	3.45
Block Call Rate %	1.29	0.91	0.00	2.19	1.32	0.00	0.00

- All TSPs have met the 2% QoS benchmark of Drop Call Rate (DCR%) except VIL (4G) network.
- All TSPs have met the 3% QoS benchmark of Block Call Rate (BCR%).

Coverage

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

TSPs	2G		
	AIRTEL	BSNL	VIL
Coverage %	61.21	50.85	75.17

b) Percentage of coverage samples for 3G \geq -90 dBm & 4G \geq -110 dBm.

TSPs	4G	4G		
	BSNL	AIRTEL	RJIO	VIL
Coverage	88.73	81.68	90.03	91.05

Summary

City Level Summary- Voice

Voice Call	2G		
	AIRTEL	BSNL	VIL
Call Attempt	232.00	331.00	172.00
Blocked Call Rate (%)	1.29	0.91	0.00
CSSR% (Accessibility)	98.71	99.09	100.00
Drop Call Rate (%)	0.44	1.83	0.00
Mobility HOSR (%)	96.68	97.40	99.22
Rx Quality (%)	97.05	92.46	90.45

Voice Call	4G			
	BSNL 4G	AIRTEL 4G	RJIO 4G	VIL 4G
Call Attempt	228.00	302.00	205.00	29.00
Blocked Call Rate (%)	2.19	1.32	0.00	0.00
CSSR% (Accessibility)	97.80	98.68	99.50	100.00
Drop Call Rate (%)	1.34	1.68	0.49	3.45
Mobility HOSR (%)	98.28	99.90	99.16	100.00
Rx Quality (%)	89.12	90.03	90.00	82.40

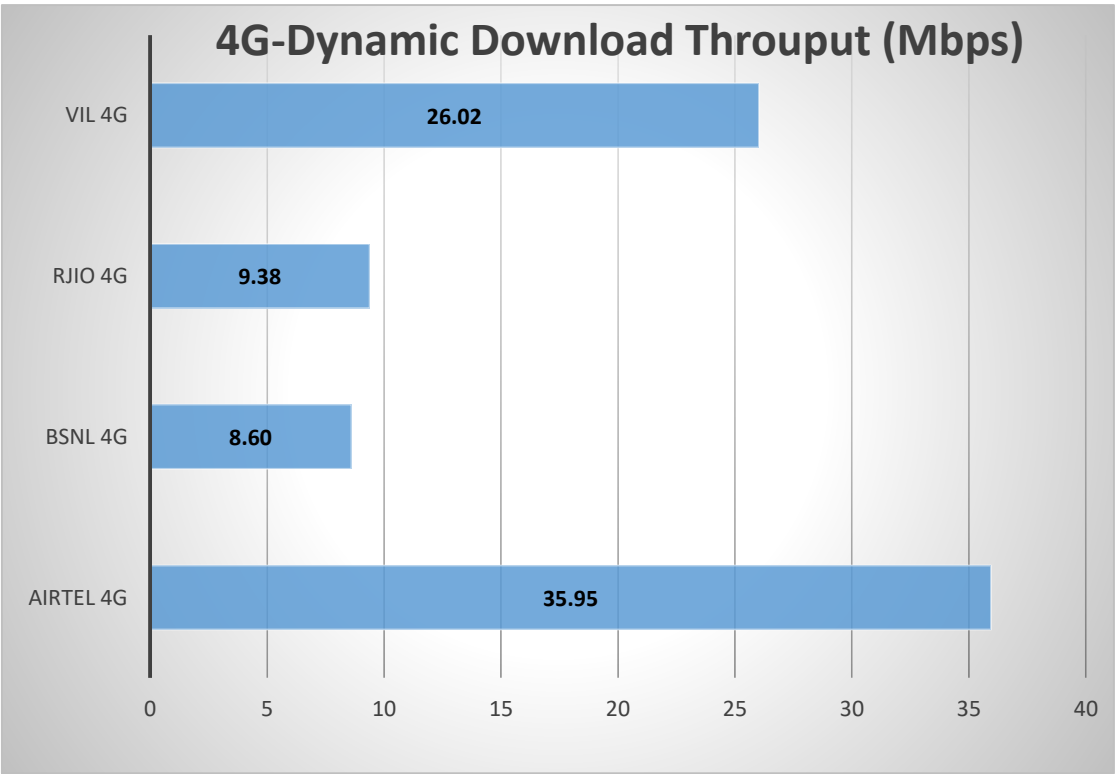
Summary-Data Services Dynamic

Key Observations

Dynamic Data was tested for 170 Kms (road) and 94Kms (coastal). Download Throughput was tested.

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

4G Network:



Summary-Data Services Static

City Level Summary-

Average Data Services Static	4G			
	BSNL 4G	AIRTEL 4G	RJIO 4G	VIL 4G
Download throughput in Mbps	17.06	11.01	45.58	**
Upload Throughput in Mbps	8.25	4.14	18.07	**
Video streaming delay (secs)	5.49	2.15	1.59	**
Web Browsing Delay (secs)	5.19	4.36	1.44	**
Latency (msec)	58.37	53.64	31.60	**

**** VIL has no 3G/4G coverage in Swaraj Dweep Islands**

Summary-Data Services Static

Location Level Summary-

Location:-Radhanagar Beach	4G			
	BSNL 4G	AIRTEL 4G	RJIO 4G	VIL 4G
Download throughput in Mbps	13.20	10.87	***	**
Upload Throughput in Mbps	12.21	5.02	***	**
Video streaming delay (secs)	1.40	1.34	***	**
Web Browsing Delay (secs)	5.10	4.38	***	**
Latency (msec)	61	68	***	**

Location:- Kalapathar Beach	4G			
	BSNL 4G	AIRTEL 4G	RJIO 4G	VIL 4G
Download throughput in (mbps)	23.02	3.23	37.37	**
Upload Throughput in (mbps)	11.21	1.77	9.47	**
Video streaming delay (secs)	3.50	6.61	1.56	**
Web Browsing Delay (secs)	6.10	6.47	1.76	**
Latency (msec)	53	92	41.66	**

Location:-Swaraj Dweep Jetty	4G			
	BSNL 4G	AIRTEL 4G	RJIO 4G	VIL 4G
Download throughput in Mbps	15.46	5.09	35.37	**
Upload Throughput in Mbps	6.84	1.59	10.47	**
Video streaming delay (secs)	2.3	2.39	1.60	**
Web Browsing Delay (secs)	5.5	5.14	1.30	**
Latency (msec)	55	69	27.33	**

*** RJIO has no 4G/5G coverage at the location.

** VIL has no 3G/4G coverage at the location.

Summary-Data Services Static

Location:-Govinda Nagar Beach	4G			
	BSNL 4G	AIRTEL 4G	RJIO 4G	VIL 4G
Download throughput in Mbps	27.28	11.50	50.72	**
Upload Throughput in Mbps	5.06	5.19	15.25	**
Video streaming delay (secs)	2.10	1.25	1.73	**
Web Browsing Delay (secs)	5.70	2.95	1.48	**
Latency (msec)	61	53	30	**

Location:-Elephanta Beach	4G			
	BSNL 4G	AIRTEL 4G	RJIO 4G	VIL 4G
Download throughput in Mbps	7.13	7.24	51.83	**
Upload Throughput in Mbps	1.45	0.91	27.98	**
Video streaming delay (secs)	4.20	1.27	1.56	**
Web Browsing Delay (secs)	6.50	4.88	1.24	**
Latency (msec)	68	0.06	28.66	**

Location:-Government Hospital, Swaraj Dweep	4G			
	BSNL 4G	AIRTEL 4G	RJIO 4G	VIL 4G
Download throughput in Mbps	18.58	14.73	52.60	**
Upload Throughput in Mbps	7.83	5.27	27.18	**
Video streaming delay (secs)	2.40	1.14	1.49	**
Web Browsing Delay (secs)	4.50	3.37	1.40	**
Latency (msec)	57.00	0.05	30.33	**

**** VIL has no 3G/4G coverage at the location.**

Summary-Data Services Static

Location:-Kalapahar Chowk Market	4G			
	BSNL 4G	AIRTEL 4G	RJIO 4G	VIL 4G
Download throughput in Mbps	20.22	25.54	***	**
Upload Throughput in Mbps	12.16	8.49	***	**
Video streaming delay (secs)	2.8	1.67	***	**
Web Browsing Delay (secs)	4.9	4.01	***	**
Latency (msec)	56	80	***	**

Location:-Taj Exotica	4G			
	BSNL 4G	AIRTEL 4G	RJIO 4G	VIL 4G
Download throughput in Mbps	11.65	9.95	***	**
Upload Throughput in Mbps	9.24	4.91	***	**
Video streaming delay (secs)	1.22	1.56	***	**
Web Browsing Delay (secs)	3.24	3.73	***	**
Latency (msec)	56	67	***	**

***** RJIO has no 4G/5G coverage at the location.**

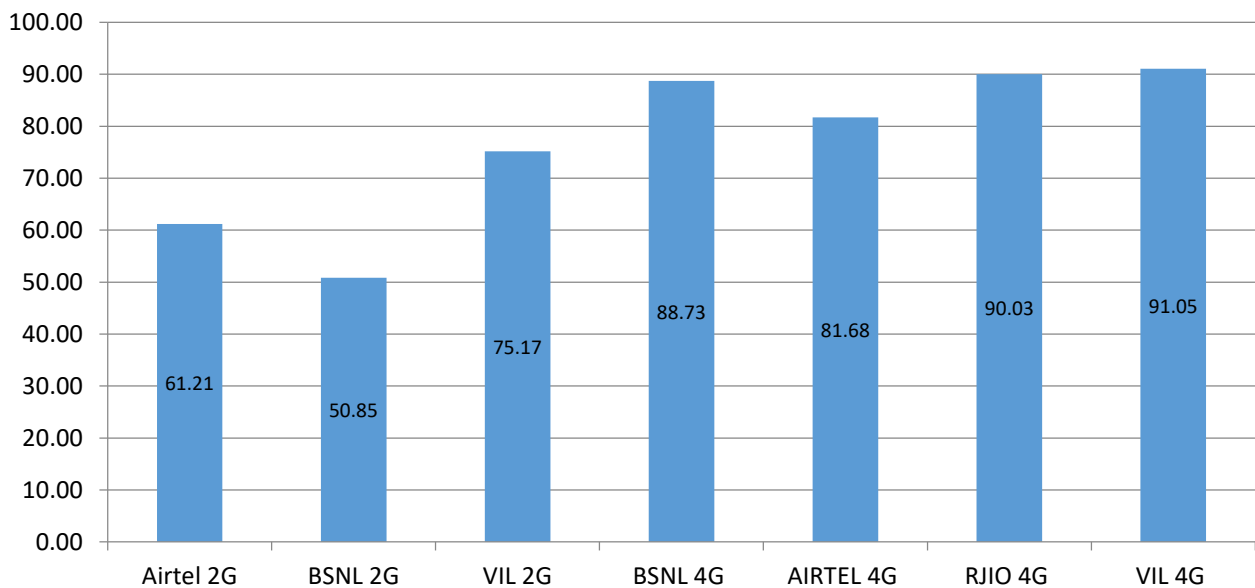
**** VIL has no 3G/4G coverage at the location.**

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 -110dBm. The details are as follows.

TSP	Coverage Rate %
AIRTEL 2G	61.21
BSNL 2G	50.85
VIL 2G	75.17
BSNL 4G	88.73
AIRTEL 4G	81.68
RJIO 4G	90.03
VIL 4G	91.05

Coverage Rate %



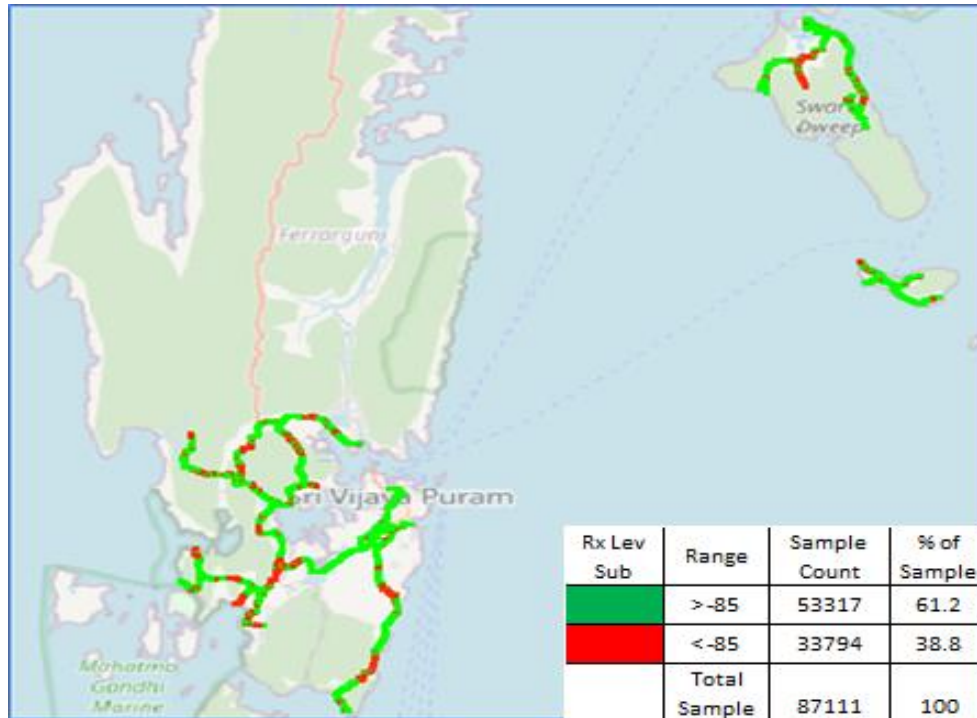
Note- Coverage is the percentage of samples having signal strength more than the threshold value (2G \geq -85 dbm, 3G \geq -90 dbm and 4G \geq -110 dbm). However, these samples are only for the portion of the OADT routes where TSPs have coverage i.e 'no coverage' routes have been excluded.

I. Coverage Details

AIRTEL

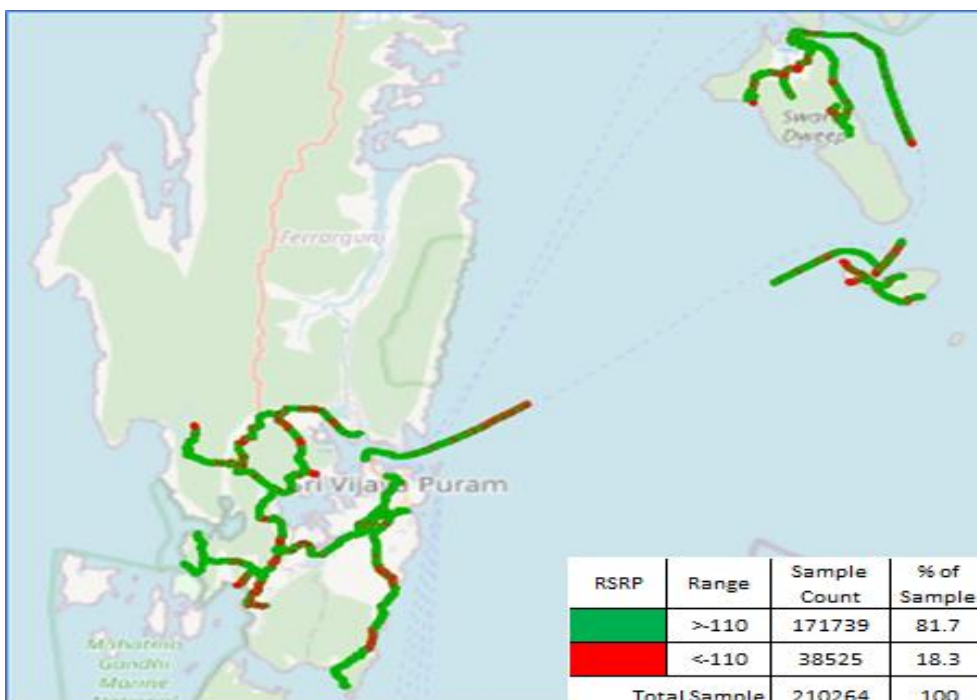
Technology	Coverage Rate %
2G	61.21
4G	81.68

2G



Overall Rx Level	Sample %
[Max >=-75]	38.77
[-75 >=-85)	22.43
[-85 >=-95)	23.51
[-95 >=Min)	15.29
Total	100

4G



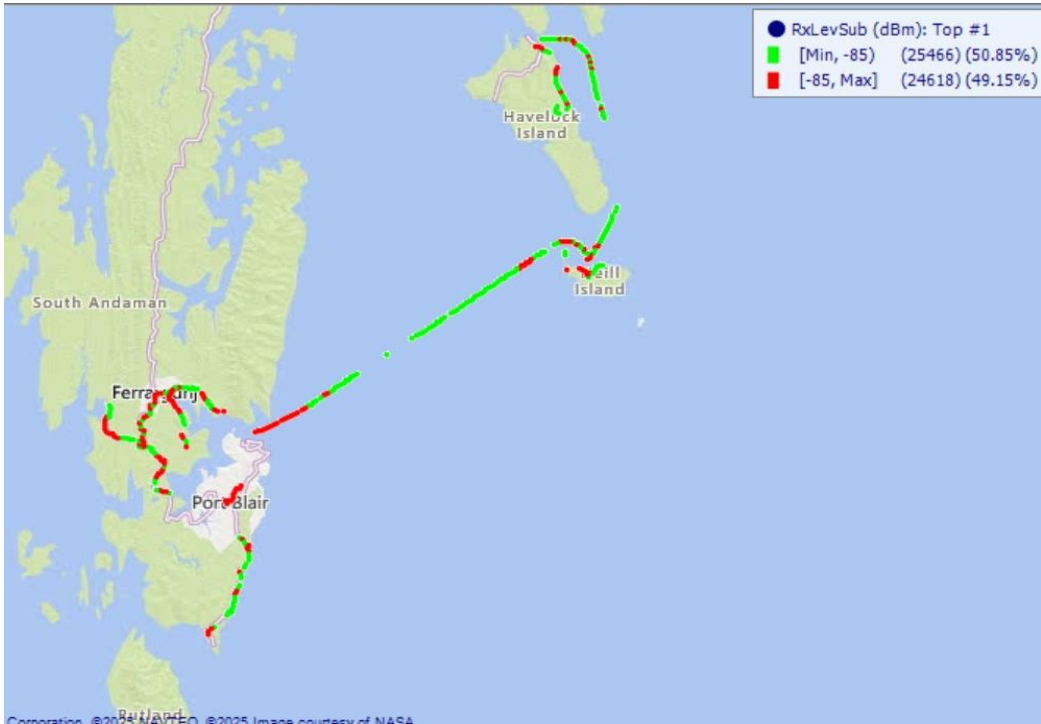
Overall RSRP	Sample %
[Max >=-80]	8.52
[-80 >=-90)	16.43
[-90 >=-110)	56.72
[-110 >=Min)	18.33
Total	100

I. Coverage Details

BSNL

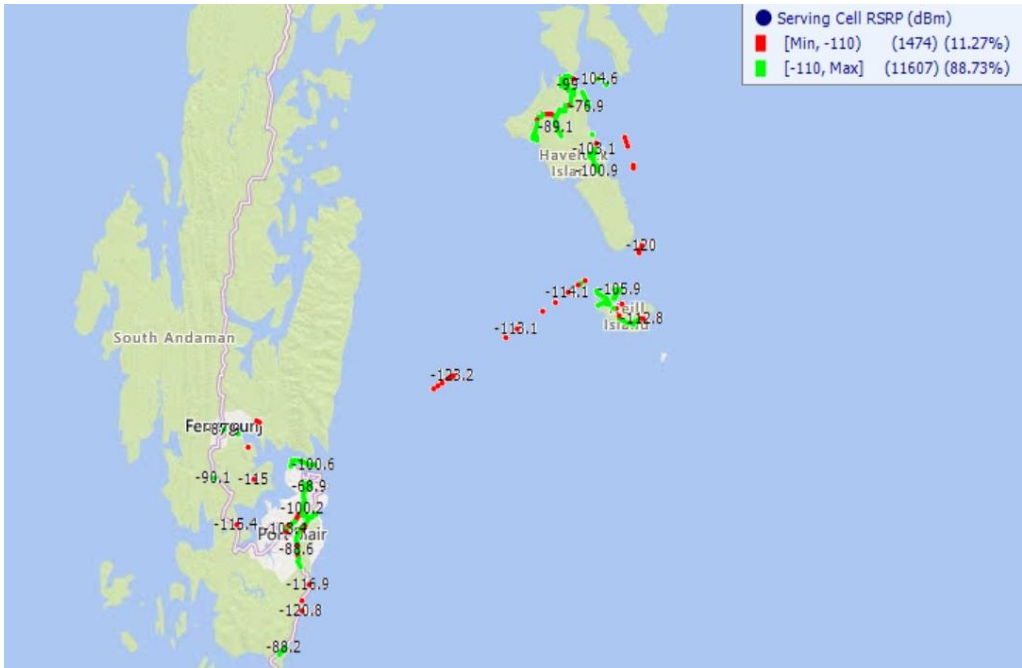
Technology	Coverage Rate %
2G	50.85
4G	88.73

2G



Overall Rx Level	Sample %
[Max >=-75]	29.02
[-75 >=-85)	21.82
[-85 >=-95)	37.69
[-95 >=Min)	11.47
Total	100%

4G



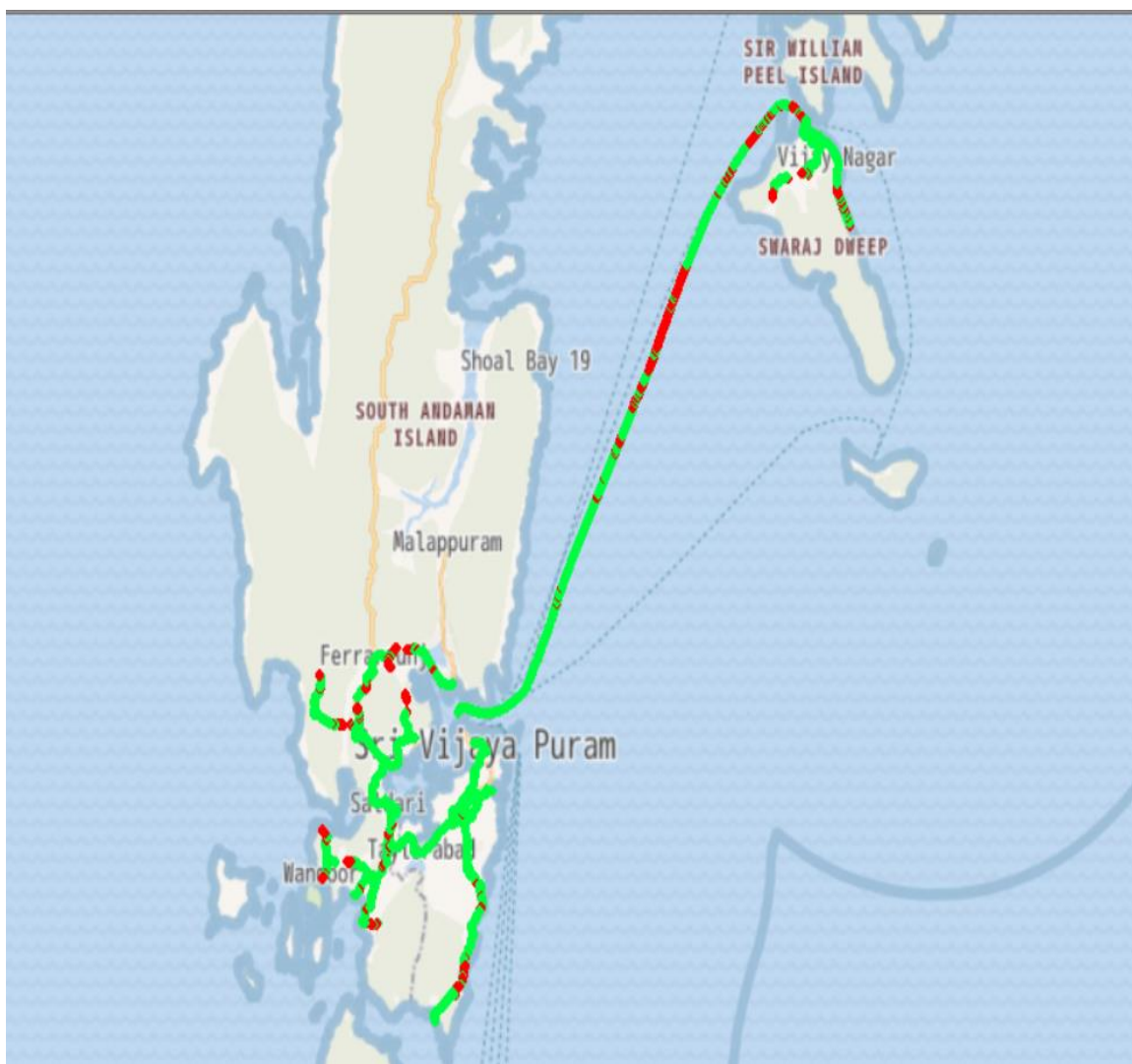
Overall RSRP	Sample %
[Max, >=-80]	24.20
[-80, >=-90)	28.74
[-90, >=-110)	35.80
[-110, >=Min)	11.26
Total	100

I. Coverage Details

RJIO

Technology	Coverage Rate %
4G	90.03

4G



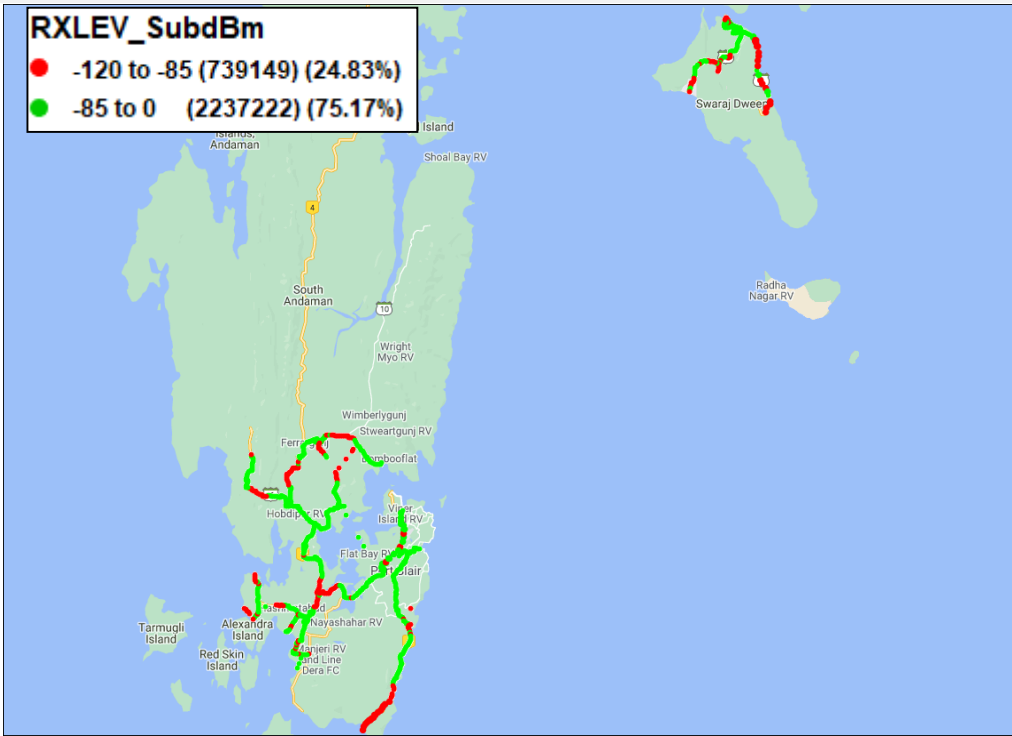
Overall RSRP	Sample %
[Max >= -80]	14.0
[-80 >= -90)	19.0
[-90 >= -110)	57.0
[-110 >= Min)	10.0
Total	100

I. Coverage Details

VIL

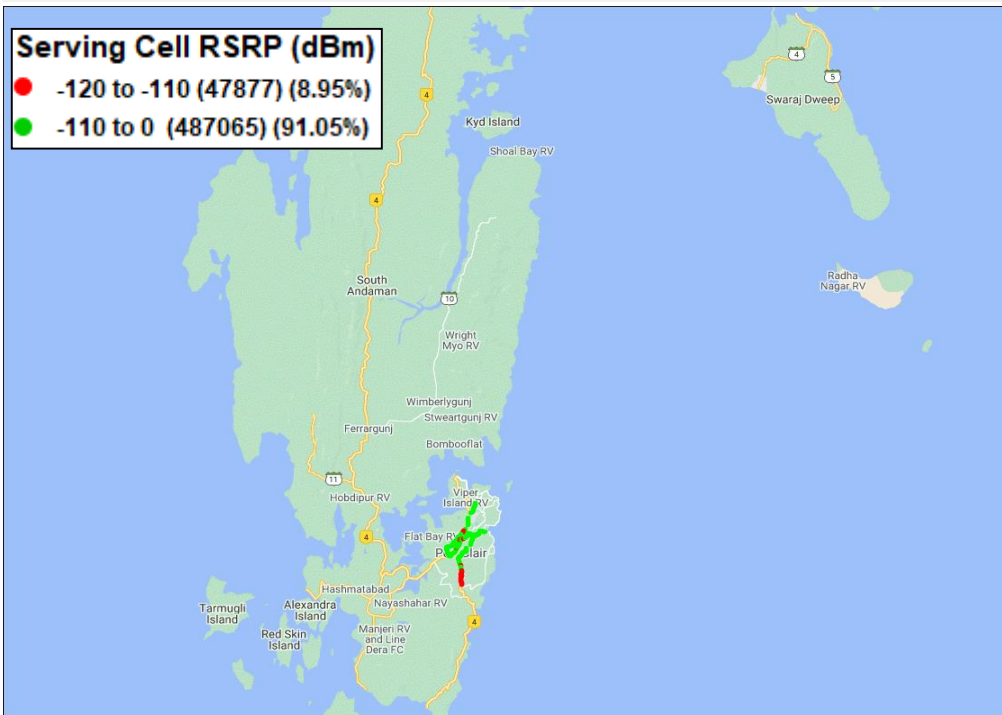
Technology	Coverage Rate %
2G	75.17
4G	91.05

2G



Overall RxLevel	Sample %
[Max >=-75]	29.53
[-75 >=-85)	45.64
[-85 >=-95)	13.74
[-95 =Min)	11.09
Total	100

4G

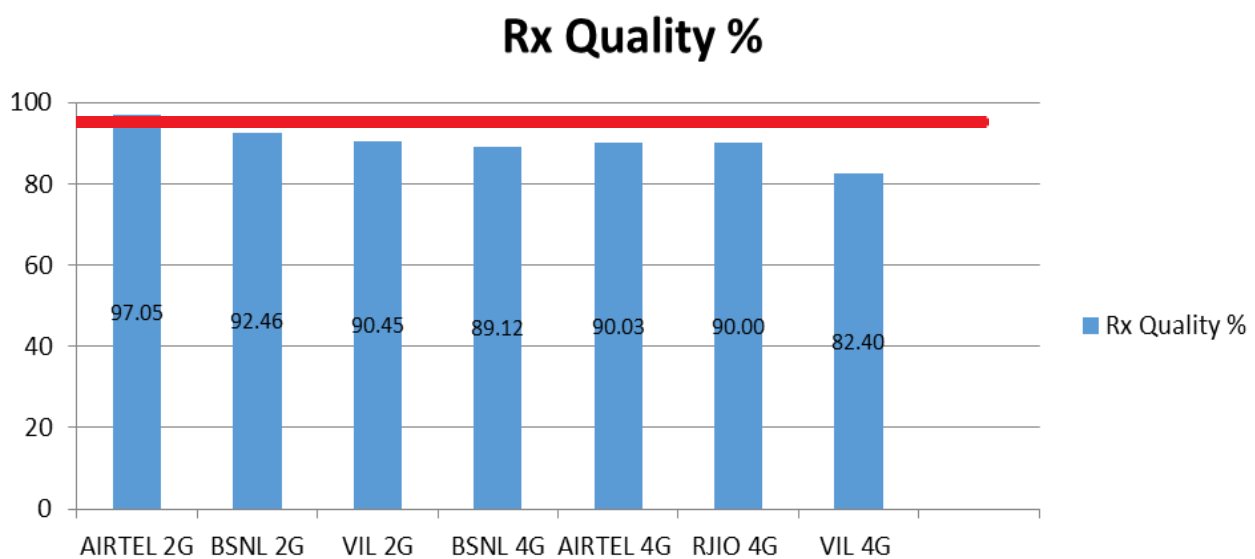


Overall RSRP	Sample %
[Max >=-80]	0.54
[-80 >=-90)	11.85
[-90>=-110)	78.66
[-110 >=Min)	8.95
Total	100

II. Quality Details

For measuring voice quality, as per the QoS norms, Rx Quality ≤ 5 for GSM, $E_c/N_o \geq -14$ dBm for 3G 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	97.05
BSNL 2G	92.46
VIL 2G	90.45
BSNL 4G	89.12
AIRTEL 4G	90.03
RJIO 4G	90.00
VIL 4G	82.40

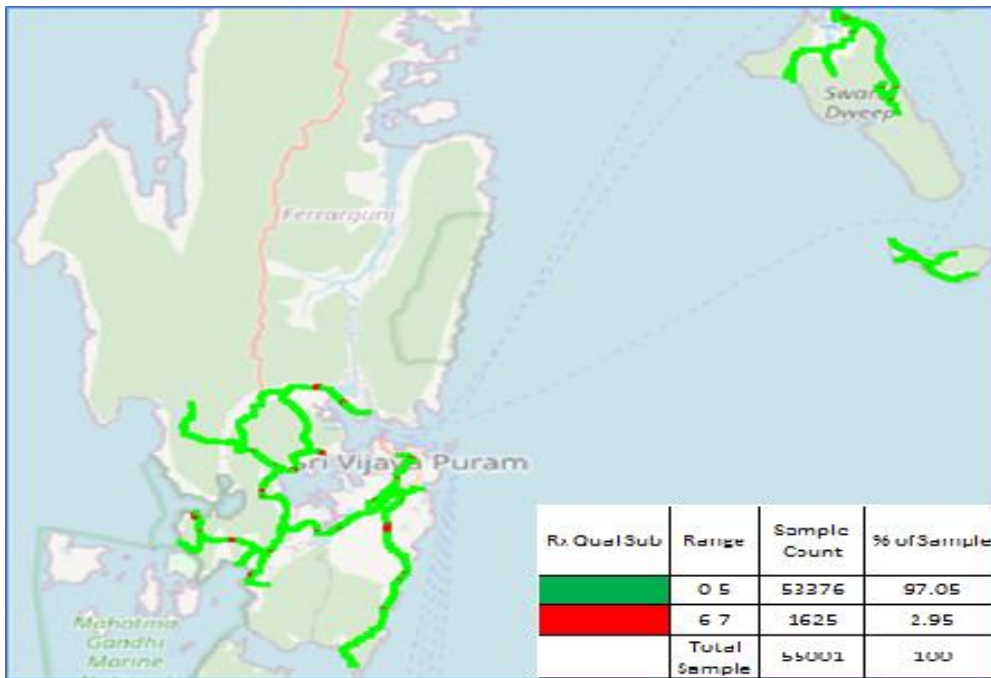


II. Quality Details

AIRTEL

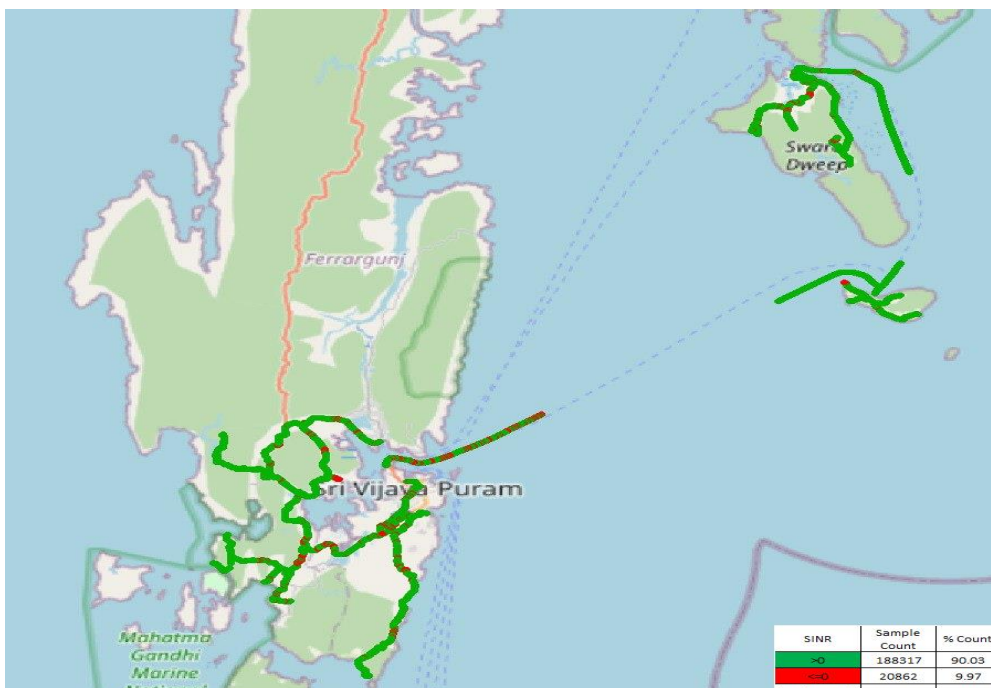
Technology	Rx Quality %
2G	97.05
4G	90.03

2G



Overall Rx Quality	Sample %
(Min <=2)	93.77
(2 <=3)	1.36
(3 <=4)	1.09
(4 <=5)	0.83
(5 <=Max)	2.95
Total	100

4G



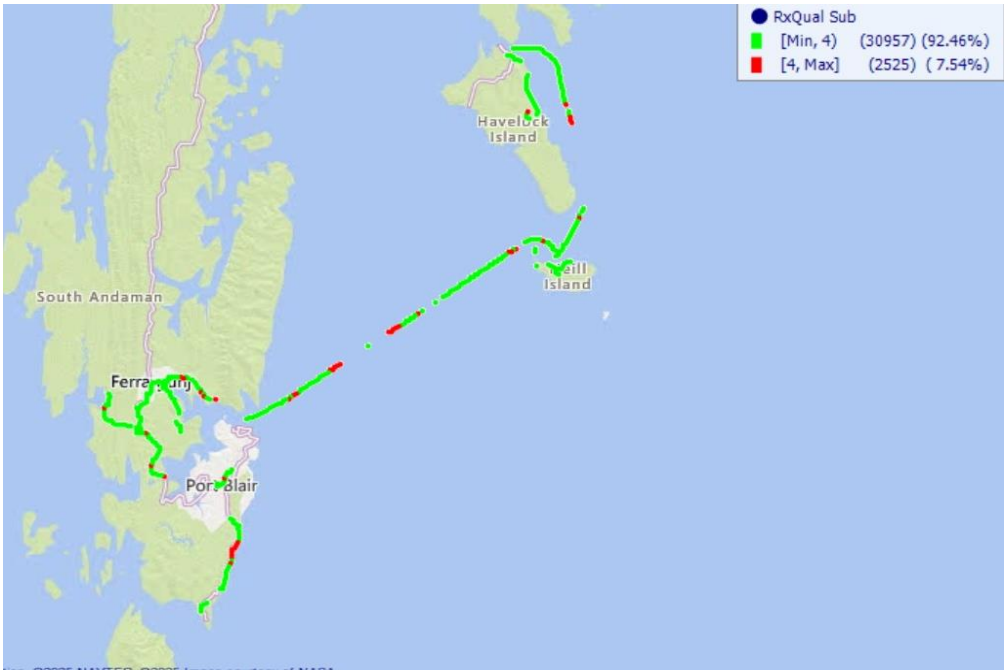
Overall SINR	Sample %
(Min <=0)	9.97
(0 <=5)	17.87
(5 <=10)	22.60
(10 <=15)	21.06
(15 <=Max)	28.50
Total	100

II. Quality Details

BSNL

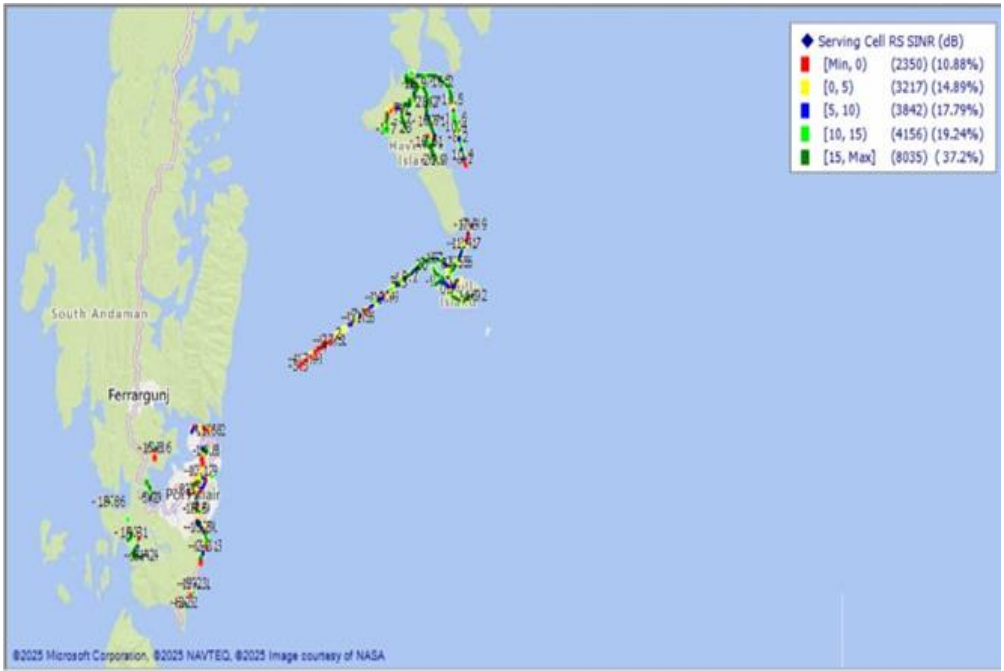
Technology	Rx Quality %
2G	92.46
3G	89.12

2G



Overall Rx Quality	Sample %
(Min <=2)	60.51
(2 <=3)	18.65
(3 <=4)	13.30
(4 <=5)	4.51
(5 <=Max)	3.03
Total	100%

4G

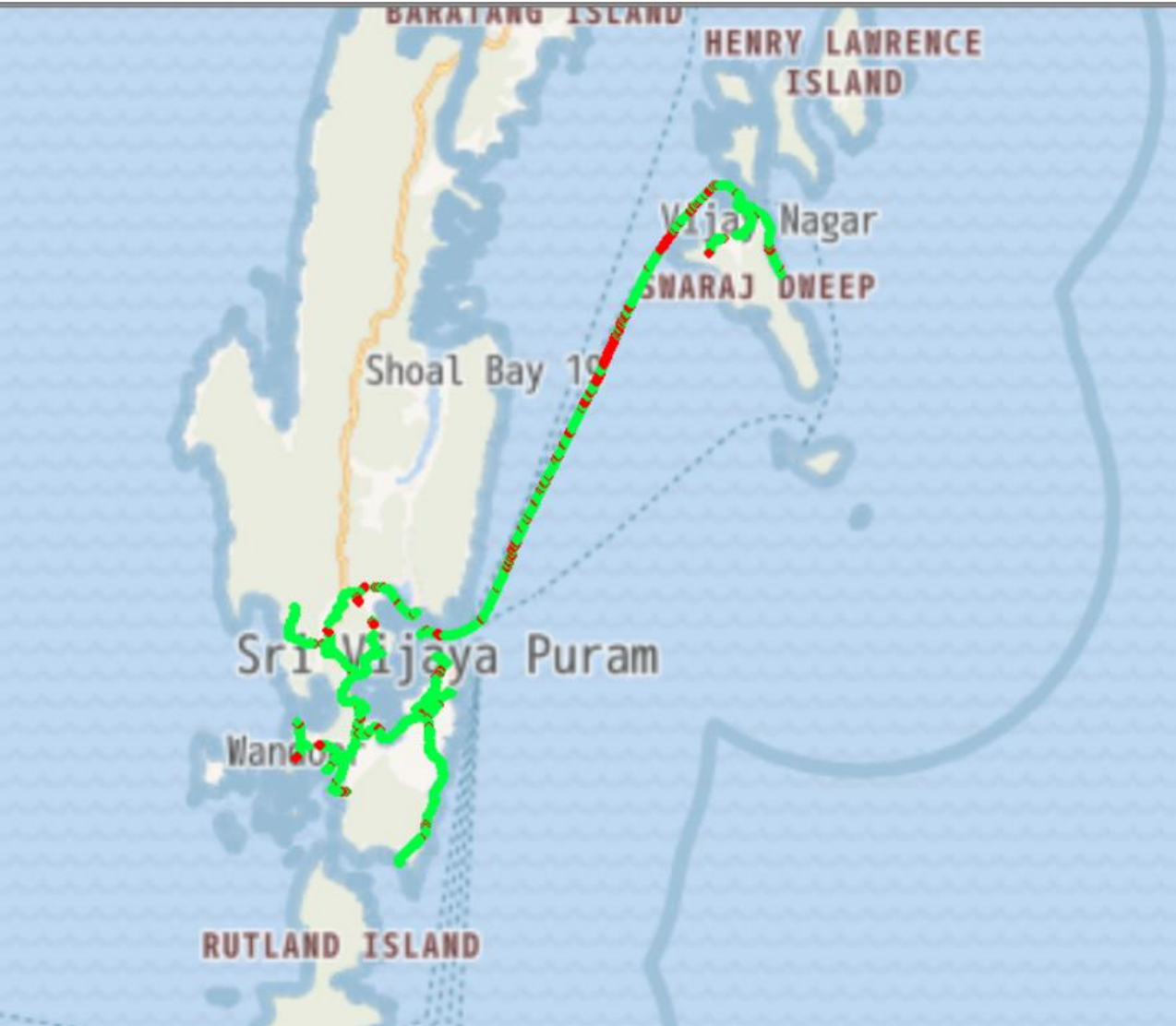


Overall SINR	Sample %
(Min <=0)	10.88
(0 <=5)	14.89
(5 <=10)	17.79
(10 <=15)	19.24
(15 <=Max)	37.20
Total	100

RJIO

Technology	Rx Quality %
4G	90.00

4G



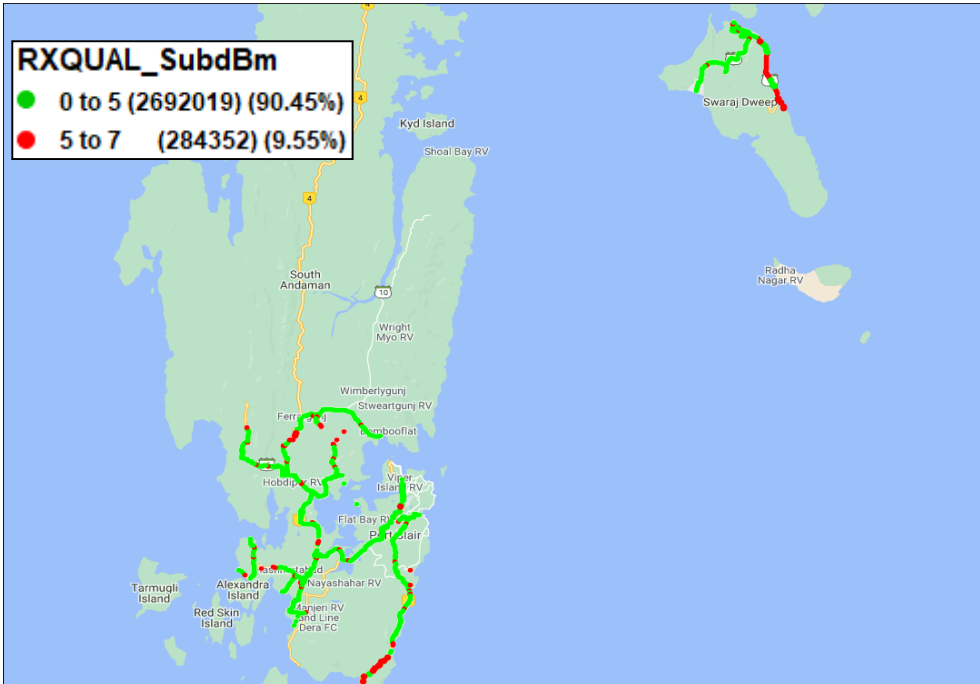
Overall SINR	Sample %
(Min, <-6)	1
(-6, <=0)	10
(0, <=5)	22
(5, <=10)	20
(10, <=15)	17
(15, <=Max)	30
Total	100

II. Quality Details

VIL

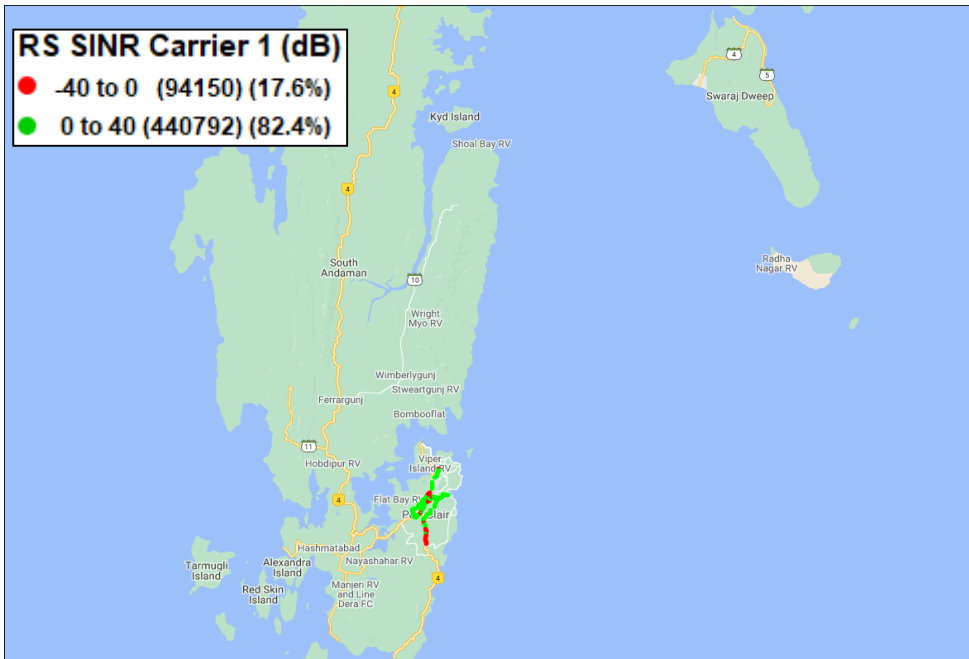
Technology	Rx Quality %
2G	90.45
4G	82.40

2G



Overall Rx Quality	Sample %
(Min <=2)	78.13
(2 <=3)	6.99
(3 <=4)	3.70
(4 <=5)	1.63
(5 <=Max)	9.55
Total	100

4G



Overall SINR	Sample %
(Min <=0)	17.6
(0 <=5)	27.19
(5 <=10)	20.65
(10 <=15)	20.11
(15 <=Max)	14.45
Total	100%

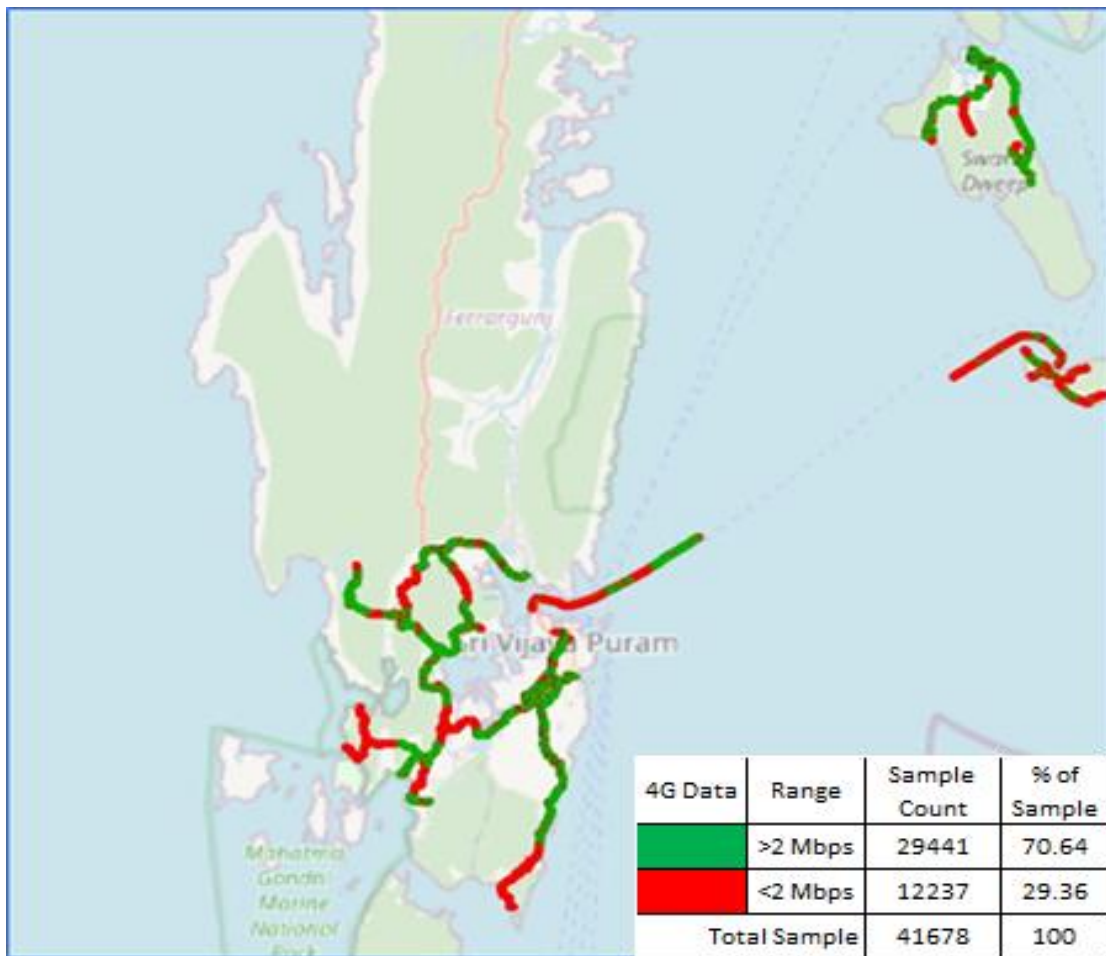
III. Dynamic Data Test- 4G DL Details

AIRTEL

Dynamic Data Testing Complete 170 Kms (road) and 94 Kms (coastal)

Data KPIs - Overall	4G
Average Download Throughput (Mbps)	35.95

4G



AVG. DOWNLOAD SPEED (Mbps)	35.95
% FILE TRANSFER COMPLETE	97.99
DL throughput	Sample %
0 to <2 Mbps	29.36
2 to <10 Mbps	15.49
10 to <=30 Mbps	19.53
>30 Mbps	35.62
Total	100

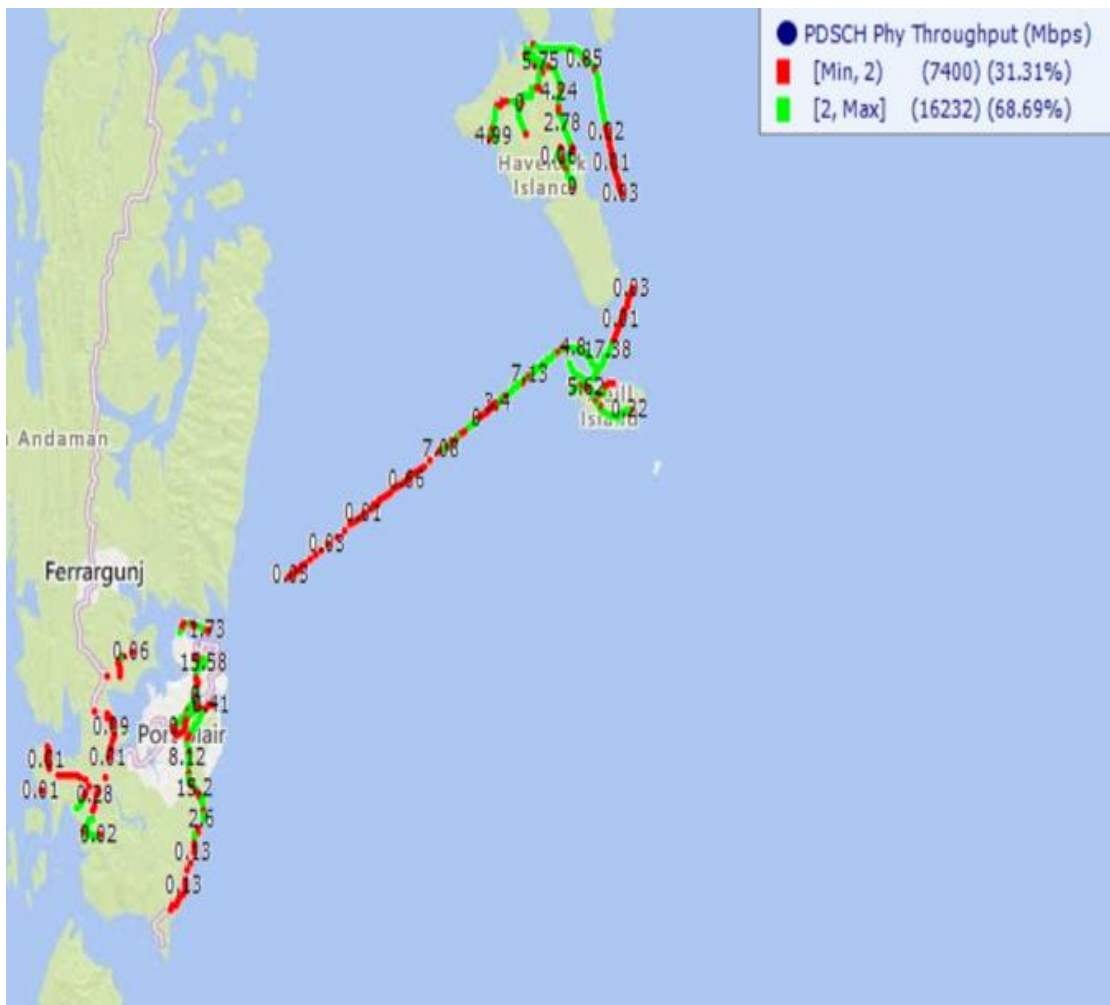
III. Dynamic Data Test- 4G DL Details

BSNL

Dynamic Data Testing Complete 170 Kms (road) and 94 Kms (coastal).

Data KPIs - Overall	4G
Average Download Throughput (Mbps)	8.60

4G



AVG. DOWNLOAD SPEED (Mbps)	8.60
% FILE TRANSFER COMPLETE	97.30
DL throughput	Sample %
0 to <2 Mbps	31.41
2 to <10 Mbps	48.44
10 to <=30 Mbps	20.15
>30 Mbps	0.00
Total	100

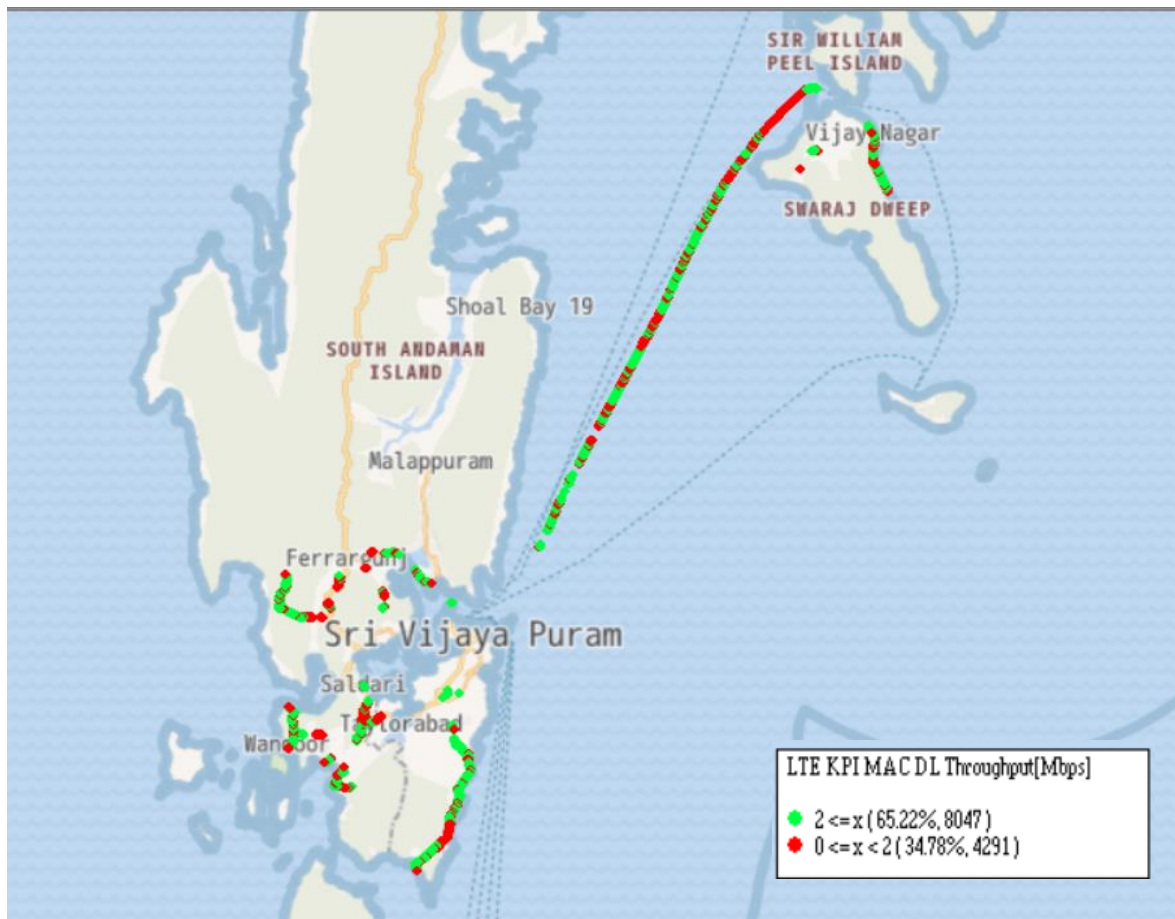
III. Dynamic Data Test- 4G DL Details

RJIO

Dynamic Data Testing Complete 170 Kms (road) and 94 Kms (coastal).

Data KPIs - Overall	4G
Average Download Throughput (Mbps)	9.38

4G



AVG. DOWNLOAD SPEED (Mbps)	9.38
% FILE TRANSFER COMPLETE	100
DL throughput	Sample %
0 to 1 Mbps	26
1 to 2 Mbps	9
2 to 5 Mbps	19
5 to 10 Mbps	13
>10 Mbps	33
Total	100

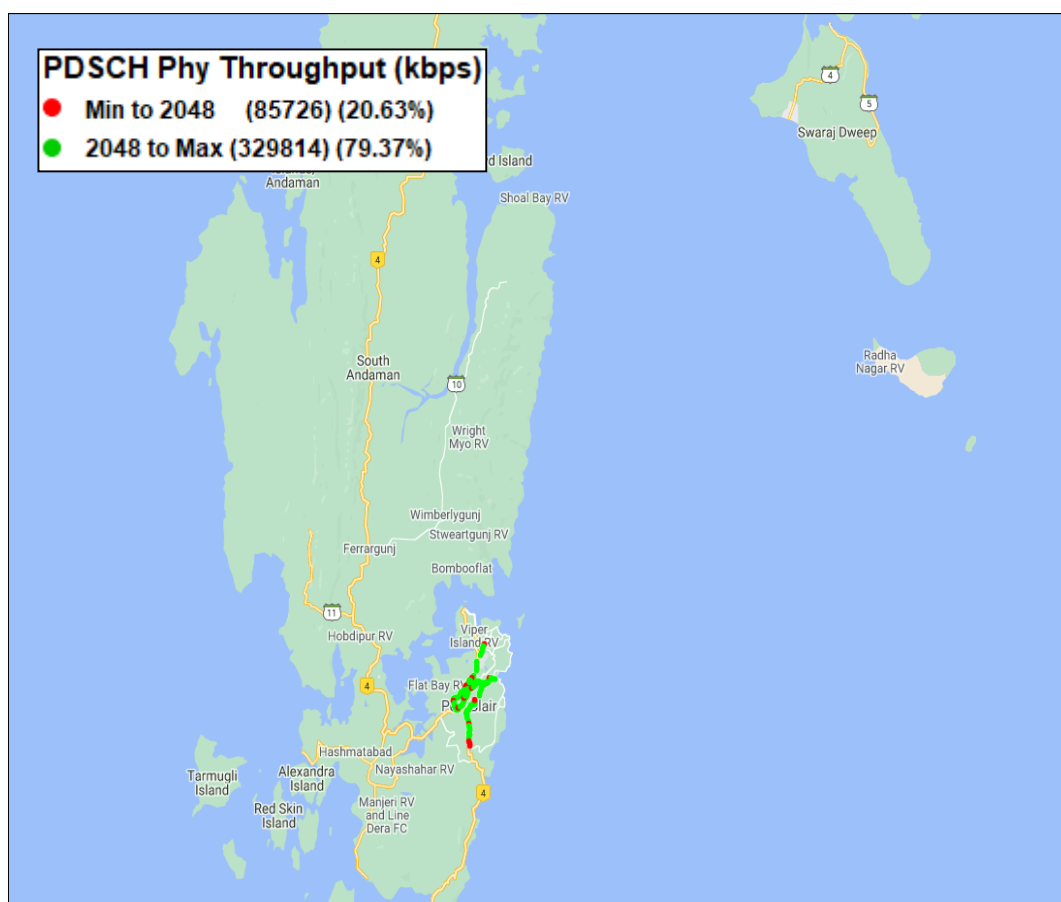
III. Dynamic Data Test-4G DL Details

VIL

Dynamic Data Testing Complete 170 Kms (road) and 94 Kms (coastal).

Data KPIs – Overall	4G
Average Download Throughput (Mbps)	26.02

4G



AVG. DOWNLOAD SPEED (Mbps)	26.02
% FILE TRANSFER COMPLETE	100
DL throughput	Sample %
0 to 1 Mbps	20.44
1 to 2 Mbps	0.19
2 to 5 Mbps	0.76
5 to 10 Mbps	2.78
>10 Mbps	75.82
Total	100