

Operator Assisted Drive Test (OADT)
Report for

MARCH 2026

Puri-Konark SSA
and Nearby Areas

23-03-2026 to 26-03-2026

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1. Overview

The Operator Assisted Drive Test carried out in Puri-Konark City from 23-03-2026 to 26-03-2026 & 9:00 AM to 9:00 PM. The drive test covered drive route of around 362 Kms in 4 days and 9 hotspot locations.

1.1 Telecom Service Providers (TSPs), Technologies and frequency bands captured during Drive Test are as below:

S. No.	Name of TSP	Technology	Frequency Bands (In MHz)
1	Bharti Airtel Ltd.	2G	900
2	Bharti Airtel Ltd.	4G	Band 3 (1800), Band 40 (2300), Band 8 (900)
3	Bharti Airtel Ltd.	5G	Band n78 (3500)
4	BSNL	2G	900
5	BSNL	3G	3G is closed due to on air of 4G
6	BSNL	4G	700/2100/2500
7	Reliance JIO Infocomm Ltd.	4G	2300,1800&850Mhz
8	Reliance JIO Infocomm Ltd.	5G	3500&700Mhz
9	Vodafone Idea Ltd.	2G	900,1800MHz
10	Vodafone Idea Ltd.	3G	VIL 3G Not available
11	Vodafone Idea Ltd.	4G	1800,2100,2500MHz

1.2 Quality of Service parameters measured:

(1) Voice Service:

Dynamic	Static (Hotspot Location)
Call setup time	Call setup time
Call setup success rate (CSSR)	Call setup success rate (CSSR)
Dropped Call rate	Dropped Call rate
Call Silence Rate	
Handover Success Rate (HOSR)	
Packet Drop Rate (Uplink & Downlink)	
Mean Opinion Score (MOS)	
Signal Strength	

(2)

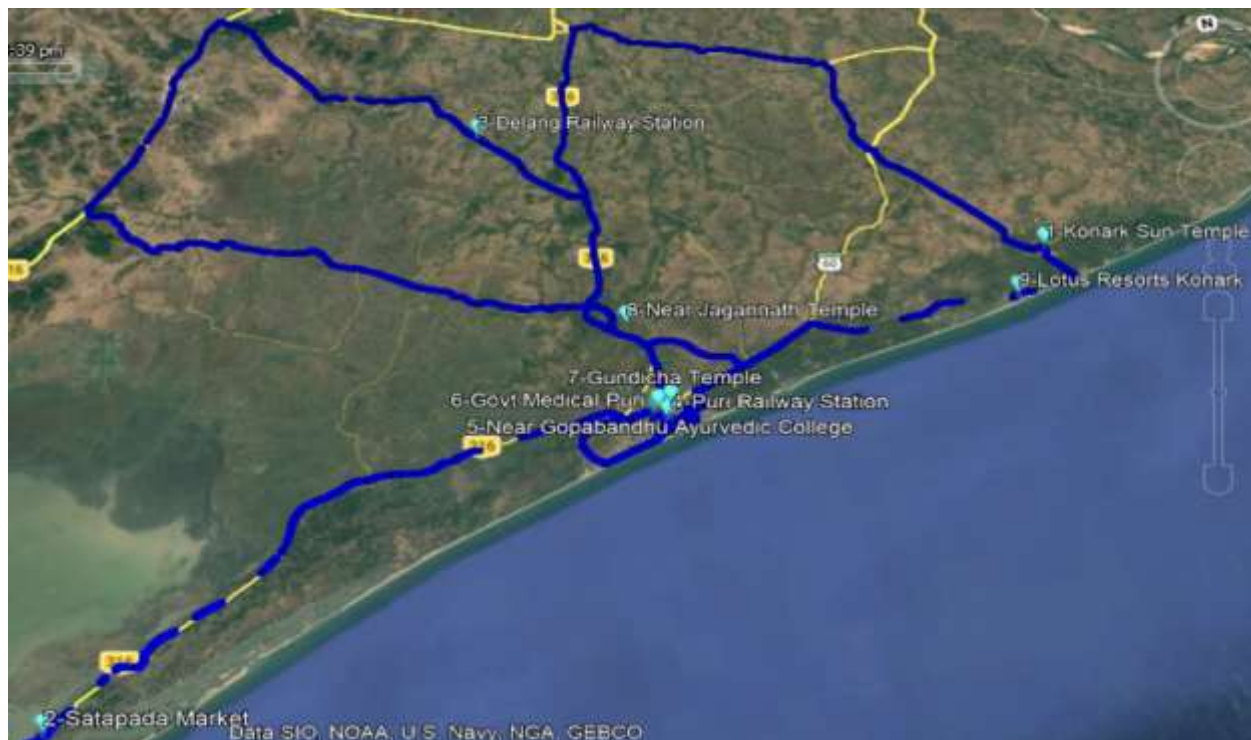
Dynamic	Static (Hotspot Location)
Data speed (DL / UL both)	Data speed (DL/UL both)
Latency	Latency
Jitter	Jitter
	Session Setup Success Rate (DL/UL)
	Packet Drop rate
	Web browsing delay
	Video Streaming performance

Drive Test Methodology adopted during the Drive test is attached as Annexure-I.

2. Executive Summary

This report covers the findings of the OADT undertaken in Odisha License Service Area (LSA) during the month of MARCH-2026 under the supervision of TRAI Regional Office (RO), Hyderabad. Details of route/area covered during the OADT is as given below:

2.1. Route Map of Drive test & Hotspot locations:



2.2. Drive Test Area detail:

Date	Duration ... AM to ... PM	Drive test route	Distance covered (in Kms)
23-03-2026	09 AM to 09 PM	Puri-Pipilli via Konark&Pipilli to Puri return via NH	131
24-03-2026	09 AM to 09 PM	Puri-Satapada	75
25-03-2026	09 AM to 09 PM	Puri-Khurda via Delanga to Rameswar	130
26-03-2026	09 AM to 09 PM	Puri town	26

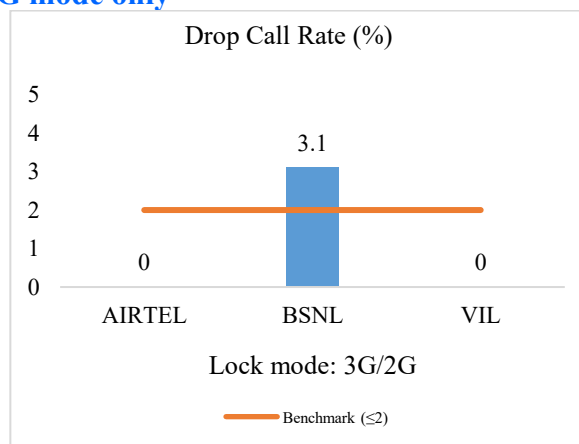
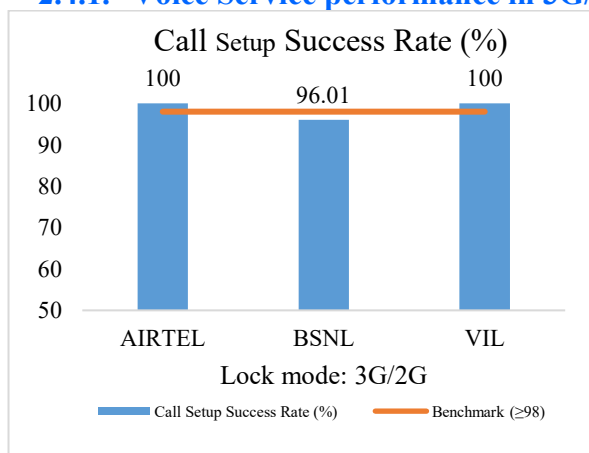
Date	Time	Hotspot Location	Latitude / Longitude
23-03-26	11:13AM	Konark Sun Temple	19.890068,86.099974
24-03-26	12:19PM	Satapada Market	19.669901,85.447329
25-03-26	10:33AM	Delanga Railway Station	20.038192,85.766628
26-03-26	10:18AM	Puri Railway Station	19.808082,85.836244
26-03-26	10:56AM	Near Gopabandhu Ayurvedic College	19.807672,85.833217
26-03-26	11:55AM	Govt Medical Puri	19.814748,85.830048
26-03-26	01:21PM	Gundicha Temple	19.816581,85.838331
26-03-26	02:29PM	Near Jagannath Temple	19.81062,85.826008
26-03-26	04:18 PM	Lotus resort Konark	19.857245,86.070962

2.3. Details of Drive Test Tools used

S. No	Name of TSP	Tool Name																	
1.	Airtel	TEMS INVESTIGATION 27.1																	
		<table><tr><td></td><td colspan="2">Drive Scenario</td></tr><tr><td rowspan="4">Laptop</td><td>Handset 1</td><td>Auto Mode- Download/Upload/Ping</td></tr><tr><td>Handset 2</td><td rowspan="2">Mobile to mobile MOS Call</td></tr><tr><td>Handset 3</td></tr><tr><td>Handset 4</td><td>2G/3G Mode- 2G Voice</td></tr><tr><td>Pocket Tems</td><td>Handset 5</td><td>Mobile to IVR Call</td></tr></table>		Drive Scenario		Laptop	Handset 1	Auto Mode- Download/Upload/Ping	Handset 2	Mobile to mobile MOS Call	Handset 3	Handset 4	2G/3G Mode- 2G Voice	Pocket Tems	Handset 5	Mobile to IVR Call			
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Pocket Tems	Handset 5	Mobile to IVR Call																	
2.	BSNL	AZQ For 4G and Nemo for 2G																	
		<table><tr><td colspan="3">SCENARIO</td></tr><tr><td>Handset 1</td><td>AUTO MODE (4G/3G/2G)</td><td>DATA DOWNLOAD</td></tr><tr><td>Handset 2</td><td>AUTO MODE (4G/3G/2G)</td><td>VOLTE call to switch number</td></tr><tr><td>Handset 3</td><td rowspan="2">4G MOS Call</td><td>VOLTE MO (MOS)</td></tr><tr><td>Handset 4</td><td>VOLTE-MT (MOS)</td></tr><tr><td>Handset 5</td><td>2G Lock MODE</td><td>VOICE CALL to switch</td></tr></table>	SCENARIO			Handset 1	AUTO MODE (4G/3G/2G)	DATA DOWNLOAD	Handset 2	AUTO MODE (4G/3G/2G)	VOLTE call to switch number	Handset 3	4G MOS Call	VOLTE MO (MOS)	Handset 4	VOLTE-MT (MOS)	Handset 5	2G Lock MODE	VOICE CALL to switch
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		Handset 4		VOLTE-MT (MOS)															
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3.	RJIL	XCAL Mobile D5.24.67.01																	
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Handset 6	Dynamic Ping																		
4.	VIL	TEMS Investigation 22.3.4																	

2.4. Key findings (Voice & Data)

2.4.1. Voice Service performance in 3G/2G mode only

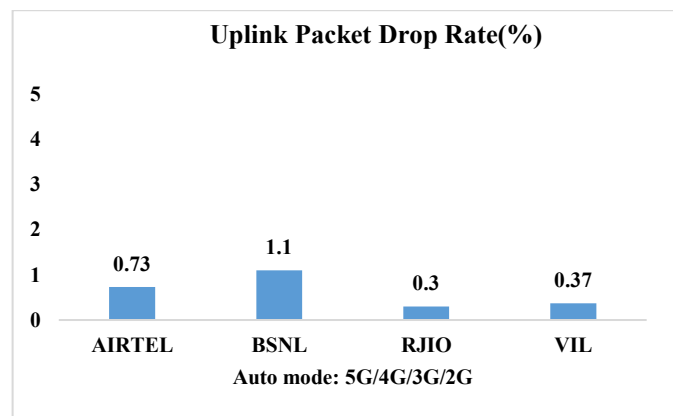
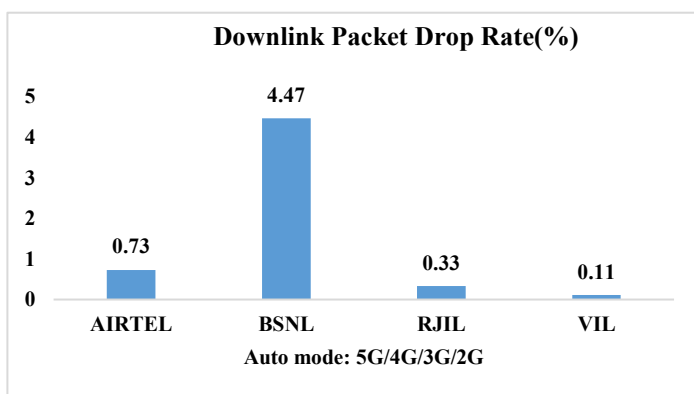
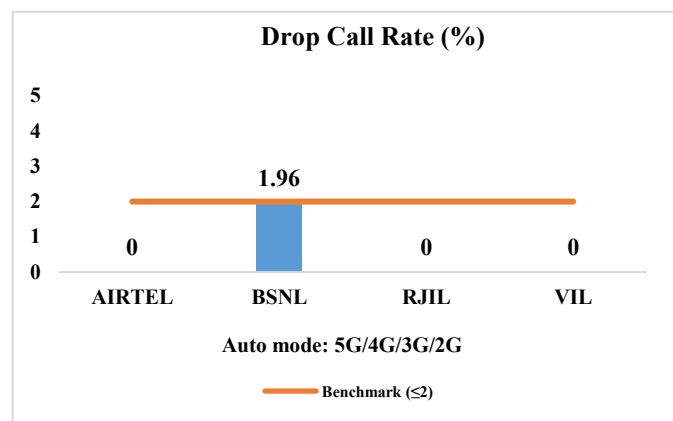
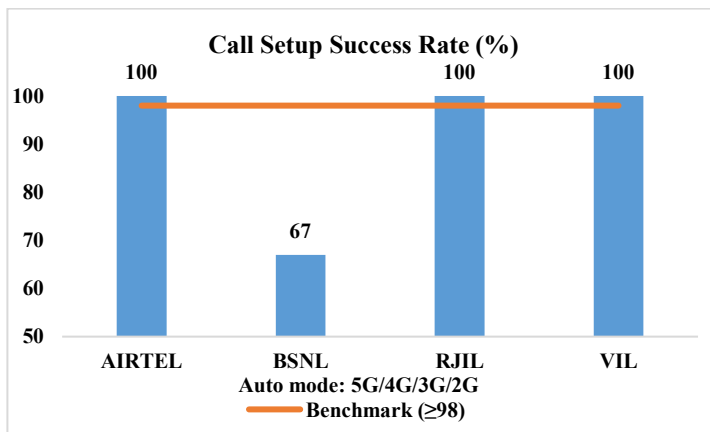


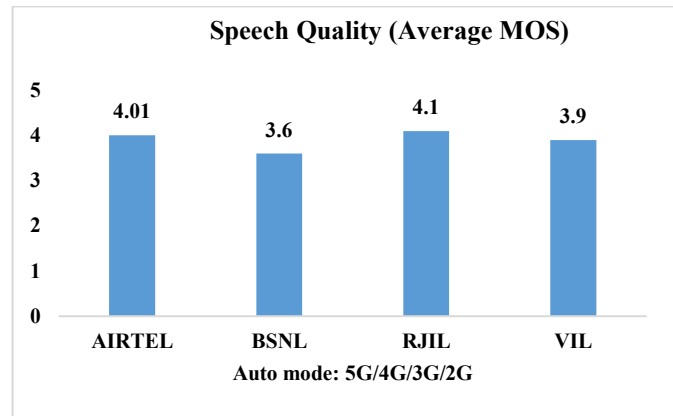
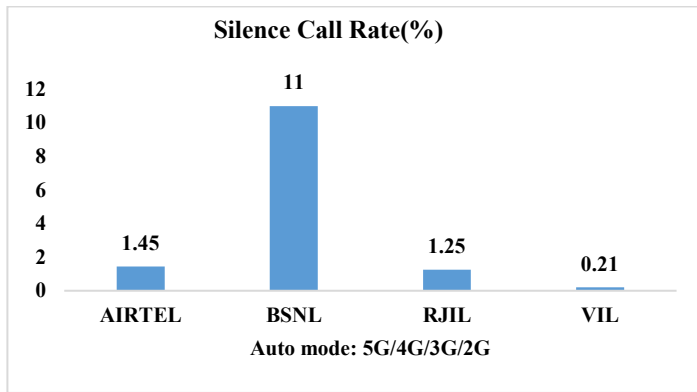
Parameter	Benchmark	AIRTEL	BSNL/MTNL	VIL
Call Attempts		202	201	189
Call Setup Success Rate (in %)	95	100.00	96.01	100
Drop Call Rate (in %)	≤ 2	0.00	3.1	0.0
Call Setup Time-Average (in Seconds)		3.56	1.9	2.30
Handover Success Rate (in %)	95	98.00	93.01	99.67

2.4.2. Number of Cell ids latched during drive test (3G/2G mode)

Technology	AIRTEL	BSNL	VIL
3G	NA		
2G	372	200	189

2.4.3. Voice Service performance in 5G/4G/3G/2G (Auto mode)



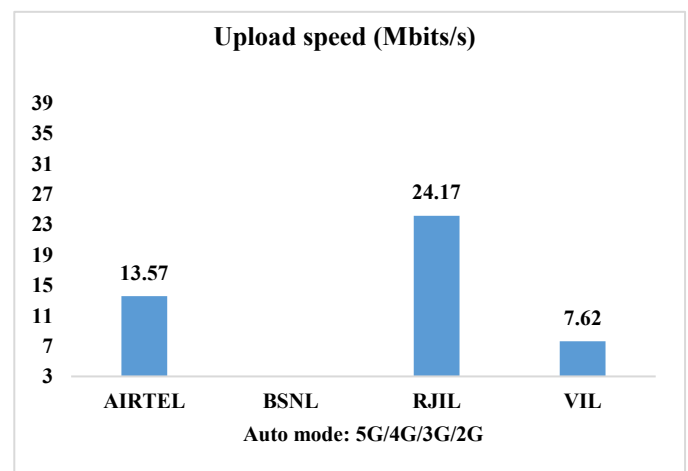
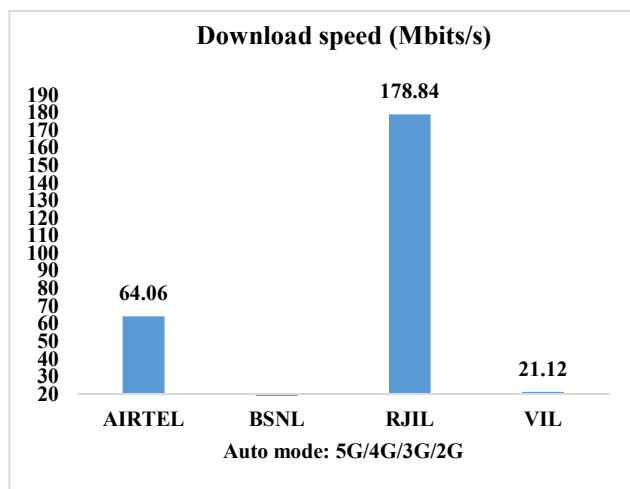


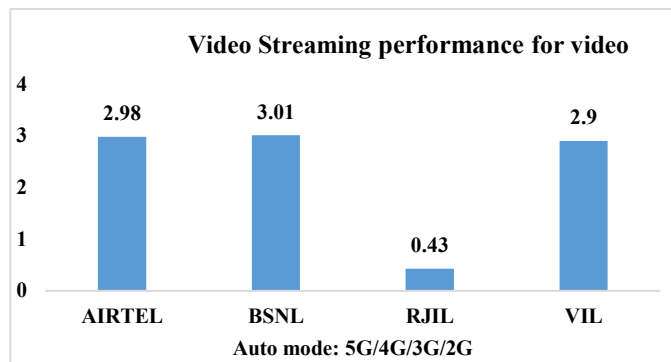
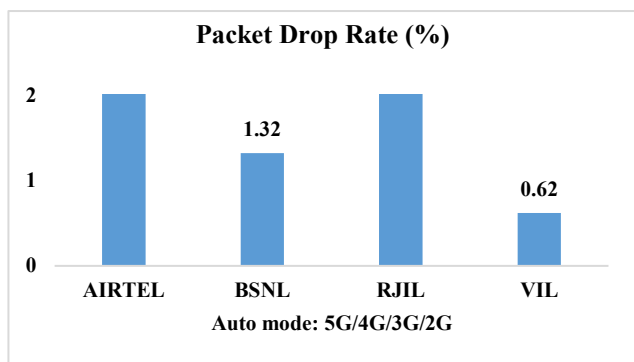
Parameter	AIRTEL	BSNL	RJIL	VIL
Call Attempts	297	210	329	162
Call Setup Success Rate %	100%	67%	100%	100%
Drop Call Rate%	0	1.96	0	0.0%
Call Setup Time-Average (Second)	0.38	4.67	1.1	0.8
Handover Success Rate %	99.78	98.67	99.58	100
Downlink Packet drop rate %	0.73	4.47	0.33	0.11
Uplink Packet drop rate %	0.73	1.10	0.3	0.37
Silence Call Rate %	1.45	11	1.25	0.21
Speech Quality (Average MOS)	4.01	3.6	4.1	3.9

2.4.4. Number of Cell ids latched during drive test (Auto mode)

Technology	AIRTEL	BSNL	RJIL	VIL
5G	341	--	563	--
4G	718	323	939	162
3G	--	--	--	--
2G	0	--	--	189

2.4.5. Data performance in 5G/4G/3G/2G (Auto mode)





QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	16.47	0.312	12.34	8.42
	Average	64.06	12	178.84	21.12
	80 th Percentile	98.86	57	325.57	31.60
Download Session Setup Success Rate %		98.53%	0.12%	100%	100%
Upload speed (Mbits/s)	Typical	4.92	NA	3.48	2.7
	Average	13.57	NA	24.17	7.62
	80 th Percentile	21.28	NA	41.39	13.19
Upload Session Setup Success Rate %		99.10%	89.11%	100%	100%
Latency (in ms)	50 th Percentile	14.50	234.0352	21	43
Jitter (in ms)	Average	23.30	7.43	23.15	0.51
Packet Drop Rate %		3.85%	1.32%	2.5%	0.62%
Web browsing delay (in sec)		7.52	4	0.95	4.56
Video Streaming performance for video		2.98	3.01	0.43	2.90

2.4.6. TSP-wise Key Findings:

- AIRTEL has 96.8% of samples falling in the excellent signal strength category for 2G/3G And 95.45% of samples falling in the excellent signal strength category for 5G/4G/3G/2G auto mode.
- BSNL has 79% of samples falling in the excellent signal strength category for 2G/3G And 93.29% of samples falling in the excellent signal strength category for 5G/4G/3G/2G auto mode.
- RJIO has 96.76% of samples falling in the excellent signal strength category for auto-selection mode (5G/4G/3G/2G).
- VIL has 95.8 % of samples falling in the excellent signal strength category for 2G/3G And 95.65% of samples falling in the excellent signal strength category for 5G/4G/3G/2G auto mode.

- Voice-3G/2G Mode**

- Airtel has 100% call setup success rate and 0% drop call rate have been observed in 3G/2G

network mode

- BSNL has **96.01%** call setup success rate and **3.1%** drop call rate have been observed in 3G/2G network mode
- VIL has 100% call setup success rate and 0% drop call rate have been observed in 2G network mode

5G/4G/3G/2G (Auto mode)

- Airtel has 100% call setup success rate and 0% drop call rate have been observed for auto-selection mode (5G/4G/3G/2G)
- BSNL has **67%** call setup success rate and 1.96% drop call rate have been observed for auto-selection mode (5G/4G/3G/2G)
- RJIO has 100% call setup success rate and 0% drop call rate have been observed for auto-selection mode (5G/4G/3G/2G)
- VIL has 100% call setup success rate and 0% drop call rate have been observed for auto-selection mode (5G/4G/3G/2G)

Hotspot Locations

- Airtel has 100% call setup success rate and 0% drop call rate have been observed in auto-selection mode (5G/4G/3G/2G) for all hotspot locations
- BSNL has 95% call setup success rate and 0% drop call rate have been observed in auto-selection mode (5G/4G/3G/2G) for all hotspot locations
- RJIO has 100% call setup success rate and 0% drop call rate have been observed in auto-selection mode (5G/4G/3G/2G) for all hotspot locations
- VIL has 100% call setup success rate and 0% drop call rate have been observed in auto-selection mode (5G/4G/3G/2G) for all hotspot locations

Data-

- AIRTEL has 64.06 Mbps average download speed & 13.57 Mbps average upload speed across measured routes
- BSNL has 57 Mbps highest download speed and 12 Mbps average download speed across measured routes
- RJIO has 180 Mbps average download speed & 21.51 Mbps average upload speed across measured routes
- VIL has 21.12 Mbps average download speed & 7.62 Mbps average upload speed across measured routes

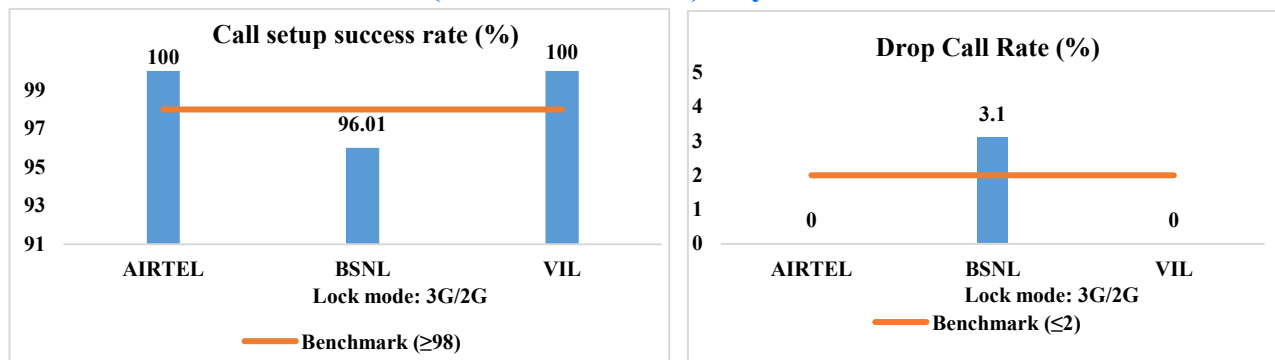
Hotspot Locations

- Airtel has 48.98 Mbps average download & 16.96 Mbps average upload speed Overall Hotspot Location
- BSNL has 12 Mbps average download speed & 2 Mbps average upload speed overall Hotspot location
- RJIO has 156 Mbps average download speed & 31 Mbps average upload speed overall Hotspot location
- VIL has 20.03 Mbps average download speed & 7.04 Mbps average upload speed overall Hotspot location

Detailed QoS Performance Analysis

3. QoS Performance Analysis – Dynamic

3.1. Voice Service Performance (3G/2G Lock mode) - Dynamic



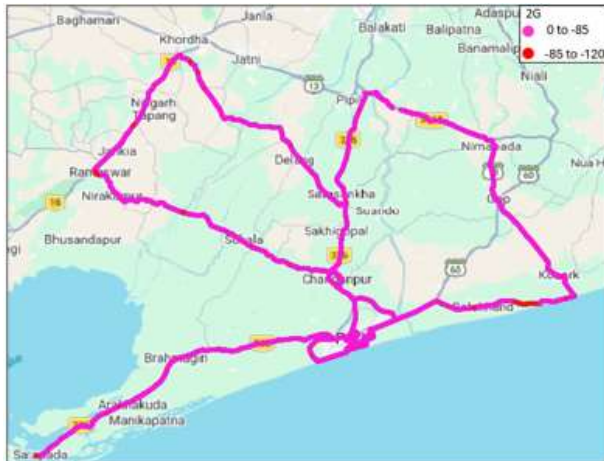
Parameters	Airtel	BSNL	VIL
Total Distance covered (in Kms)	362	362	362
No. of Call Attempts	202	201	189
No. of Call Established	202	193	189
Call setup success rate (CSSR) %	100%	96.01%	100%
No. of Drop Call	0	6	0
Drop Call Rate %	0%	3.1%	0.0%
Call Setup Time Average (Sec.)	3.56	1.9	2.30
No. of Handover Attempts	549	401	304
No. of Handover success	538	373	303
HOSR %	98.00%	93.01%	99.67
Total no of RLT Occurrence	68921		0
No of RLT > 48	0	0	0

3.1.1. Number of Cell ids latched during drive test (3G/2G - Lock mode)

Number of unique Cell ids covered in Voice test				
Technology	AIRTEL	BSNL	RJIL	VIL
3G	NA		NA	NA
2G	372	200	NA	218

3.1.2. Signal Strength Map: (3G/2G - Lock mode)

Signal Strength Map (for each TSP)	Map Legend:	
	2G- Pink (Rx Level ≥ -85 dBm), 3G- Sky blue (RSCP Level ≥ -90 dBm) < -90 dBm)	Red (Rx Level < -85 dBm) Dark Blue (RSCP Level < -90 dBm)



Airtel-2G/3G



BSNL-3G/2G



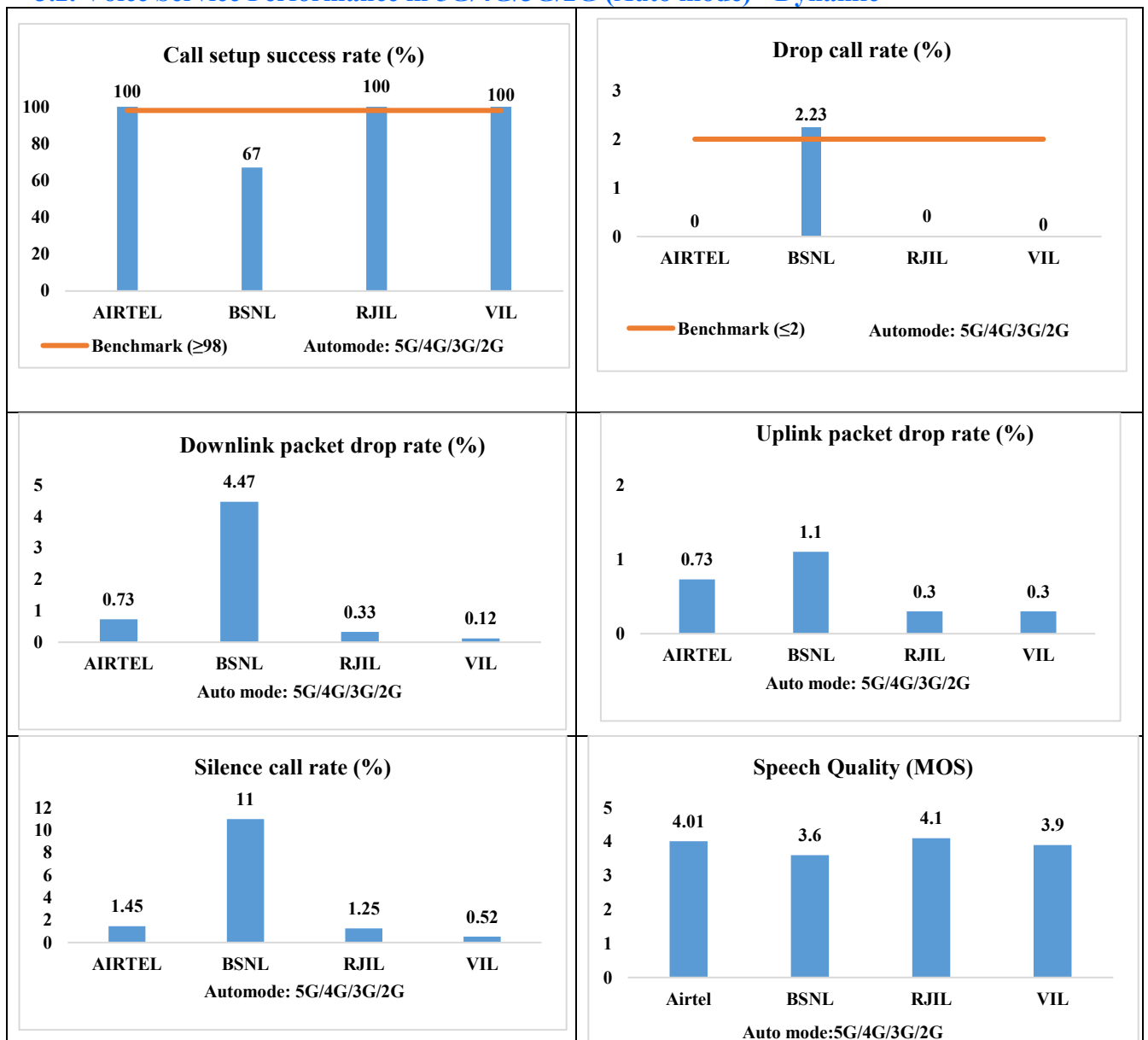
VIL-2G

3.1.3. Signal Strength distribution: (3G/2G - Lock mode)

Rx Level - 2G								
Overall Rx Level	No of Sample				Sample %			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max, ≥ -65]	3979	20154	NA	605891	21.9%	28.641%	NA	18.1%
$[-65, \geq -75]$	5406	14783	NA	642095	29.8%	21.008%	NA	19.2%
$[-75, \geq -85]$	8207	20639	NA	1959315	45.2%	29.331%	NA	58.5%
$[-85, \geq \text{Min}]$	579	14791	NA	139709	3.2%	21.0198%	NA	4.2%
Total	17171	70367	NA	3347010	100%	100%	NA	100%

Rx Level - 3G								
Overall RSCP	No of Sample				Sample %			
	Airtel	BSNL	RJIL	VIL	Airtel	NA	RJIL	VIL
[Max, $\geq$ -70]	NA	NA	NA	NA	NA	NA		NA
[-70, $\geq$ -80)	NA	NA	NA	NA	NA	NA		NA
[-80, $\geq$ -90)	NA	NA	NA	NA	NA	NA	NA	NA
[-90, $\geq$ Min)	NA	NA	NA	NA	NA	NA	NA	NA
Total	NA	NA	NA	NA	NA	NA	NA	NA

3.2. Voice Service Performance in 5G/4G/3G/2G (Auto mode) - Dynamic



Parameters	Airtel	BSNL	RJIL	VIL
Total Distance covered (in Kms)	362	360	362	362
No. of Call Attempts	207	210	239	162
No. of Call Established	207	142	239	162
Call setup success rate (CSSR) %	100%	67%	100%	100%
No. of Drop Call	0	9	0	0
Drop Call Rate %	0%	2.23%	0%	0.0%
Call Setup Time Average (Sec.)	0.38	4.67	1.2	0.8
No. of Handover Attempts	1842	530	2762	249
No. of Handover success	1838	523	2751	249
HOSR %	99.78%	98.67%	99.6%	100%
Packet Drop Rate (Downlink)	0.73	4.47	0.33	0.12
Packet Drop Rate (Uplink)	0.73	1.10	0.3	0.30
Number of silence call for > 2 sec.	03	30	5	1
Silence Call Rate %	1.45%	11%	1.25%	0.52%
Number of MOS samples	2535	1516	3220	413
Average MOS score	4.01	3.6	4.1	3.9

3.2.1. Number of Cell ids latched during drive test 5G/4G/3G/2G - Auto mode)

Number of unique cell ids covered in Voice test				
Technology	Service Provider			
	AIRTEL	BSNL	RJIL	VIL
3G	--	--	--	--
2G	0	--	--	189
4G	718	226	718	162
5G	341	--	286	--

3.2.2. Signal Strength Map: (5G/4G/3G/2G - Auto mode)

Signal Strength Map	Map Legend- 2G- Pink (Rx Level $\geq$ -85 dBm), 3G- Sky blue (RSCP Level $\geq$ -90 dBm)	Red (Rx Level $<$ -85 dBm) Dark Blue (RSCP Level $<$ -90 dBm)
	Map Legend- 4G- Light Green (RSRP Level $\geq$ -110 dBm), 5G- Light Yellow (RSRP Level $\geq$ -110 dBm),	Dark Green (RSRP Level $<$ -110 dBm) Dark Yellow (RSRP Level $<$ -110 dBm)

Technology	Parameter	Range	Colour
2G	Rx Level	$\geq$ -85 dBm	Pink
		$<$ -85 dBm	Red
3G	RSCP	$\geq$ -90 dBm	Sky blue
		$<$ -90 dBm	Dark Blue
4G	RSRP	$\geq$ -110 dBm	Light Green
		$<$ -110 dBm	Dark Green
5G	RSRP	$\geq$ -110 dBm	Light Yellow
		$<$ -110 dBm	Dark Yellow



Airtel



BSNL



JIO



VIL

3.2.3. Signal Strength distribution: (5G/4G/3G/2G - Auto mode)

Rx Level - 2G								
Overall Rx Level	No of Sample				Sample %			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max, ≥-65]	0	NA	NA	605891	0.00	NA	NA	18.1%
[-65, ≥-75)	0	NA	NA	642095	0.00	NA	NA	19.2%
[-75, ≥-85)	0	NA	NA	1959315	0.00	NA	NA	58.5%
[-85, ≥Min)	0	NA	NA	139709	0.00	NA	NA	4.2%
Total	0	NA	NA	3347010	0.00	NA	NA	100 %
Rx Level -3G								
Overall RSCP	No of Sample				Sample %			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max, ≥-70]	NA	NA	NA	NA	NA	NA	NA	NA
[-70, ≥-80)	NA	NA	NA	NA	NA	NA	NA	NA
[-80, ≥-90)	NA	NA	NA	NA	NA	NA	NA	NA
[-90, ≥Min)	NA	NA	NA	NA	NA	NA	NA	NA
Total	NA	NA	NA	NA	NA	NA	NA	NA
Rx Level -4G								
Overall RSRP	No of Sample				Sample %			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max, ≥-80]	1279	23981	3403	4873173	10.00%	14.54%	19.43%	42.4%
[-80, ≥-95]	5366	71752	6128	3093783	42.10%	43.51%	34.98%	26.9%
[-95, ≥-110]	5366	58111	7025	3008077	42.20%	35.24%	40.13%	26.2%
[-110, ≥Min]	723	11068	958	505101	5.70%	6.71%	5.46%	4.4%
Total	12746	164912	17514	11480134	100%	100.00%	100%	100%
Rx Level -5G								
Overall RSRP	No of Sample				Sample %			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max, ≥-80]	2684	NA	6847	NA	23.10%	NA	37.74%	NA
[-80, ≥-95]	4339	NA	8651	NA	37.30%	NA	47.69%	NA
[-95, ≥-110]	4235	NA	2444	NA	36.40%	NA	13.49%	NA
[-110, ≥Min]	385	NA	196	NA	3.30%	NA	1.08%	NA
Total	11643	NA	18138	NA	100%	NA	100%	NA

3.3. Data Service performance in 5G/4G/3G/2G (Auto mode) - Dynamic

QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Average	16.47	12	178.89	14.6
	80th Percentile	64.06	57	328.46	16.29
	20th Percentile	98.86	10	10.10	6.8
Upload speed (Mbits/s)	Average	4.92	NA	21.51	5.6
	80th Percentile	13.57	NA	37.44	4.41

	20th Percentile	21.28	NA	2.14	2.1
Latency (ms)	Average		1.5	28.36	21
	50th Percentile	14.50	24	20.5	10.5
Jitter (ms)	Average	23.30	5.01	29.72	0.38

3.4. Time Spent (Technology-wise)

Time Spent Map (for each TSP)	Map Legend: 2G – Red 3G – Yellow 4G – Green 5G - Blue
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Airtel



BSNL



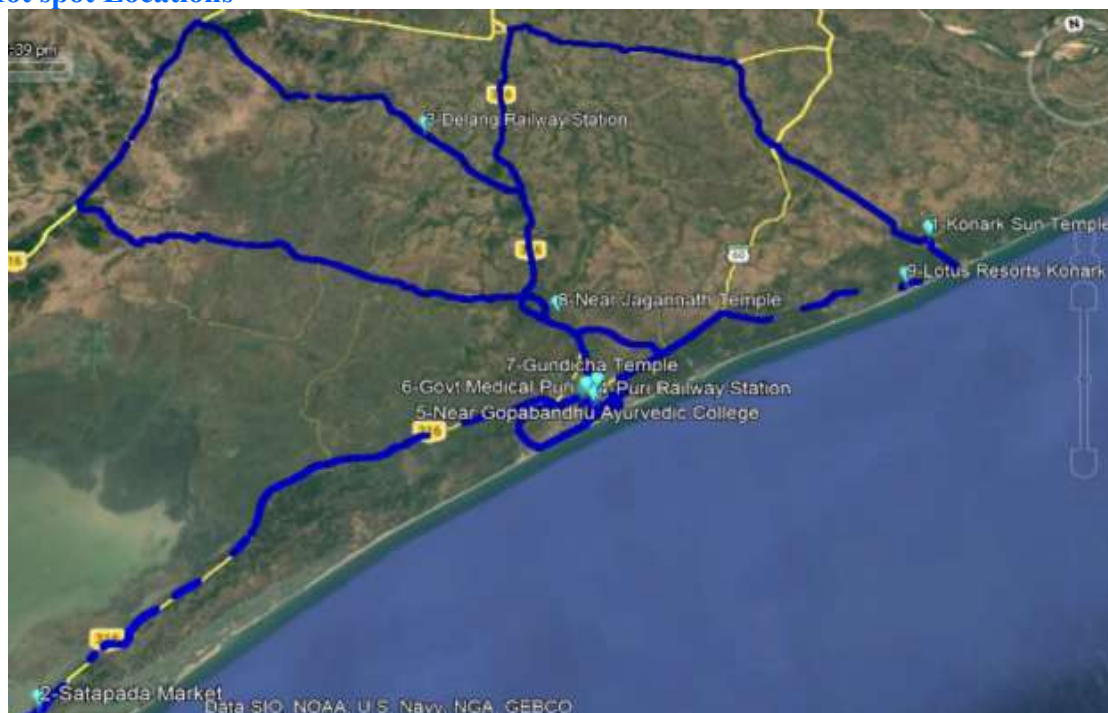
RJIL



VIL

4. QoS Performance Analysis – Static

4.1. Hot spot Locations



Hotspot Name	Latitude & Longitude	Date of Measurement	Time of Measurement
Konark Sun Temple	19.8908/86.0996	2026-03-23	11:00 AM
Satapada	19.6698/85.4473	2026-03-24	12:22 PM
Delang Railway Station	20.0376/85.7673	2026-03-25	10:32 AM
Puri railway Station	19.8073/85.8334	2026-03-26	10:16 AM
Gopabandhu Ayurvedic College	19.8073/85.8334	2026-03-26	10:54 AM
Govt Hospital	19.8143/85.829	2026-03-26	11:45 AM
Gundicha Temple	19.8166/85.8382	2026-03-26	01:28 PM
Jagannath Temple	19.8106/85.826	2026-03-26	02:30 PM
Lotus resort Konark	19.8572/86.071	2026-03-26	04:18 PM

4.2. Voice Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) – Over all

Parameters	Airtel	BSNL	RJIL	VIL
No. of Call Attempts	90	180	90	80
No. of Call Established	90	171	90	80
Call setup success rate (CSSR) %	100%	95%	100%	100%
No. of Drop Call	0	0	0	0
Drop Call Rate %	0	0	0	0.00
Call Setup Time Average (Sec.)	0.64	3.16	1.1	0.6

4.3. Data Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) – Over all

QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	13.17	10	40.67	8.4
	Average	48.98	12	155.92	20.03

	80th Percentile	74.88	57	244.31	24.32
Download Session Setup Success Rate %		93.88%	9.62%	100%	100%
Upload speed (Mbits/s)	Typical	8.27	0.13	11.78	2.9
	Average	16.96	2	31.81	4.91
	80th Percentile	27.17	13	48.6	6.94
Upload Session Setup Success Rate %		93.48%	89.11%	100%	100%
Latency (in ms)	50th Percentile	11.00	0.65	21	23
Jitter (in ms)	Average	6.33	2.3	11.86	0.42
Packet Drop Rate %		0.18	1.38	2.51	0.24
Web browsing delay (in sec)		7.52	6.48	0.95	4.21
Video Streaming performance for video		2.98	5	0.43	2.56

4.4. Voice Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) at each Hotspot location

Name of Hotspot Location	Konark Sun Temple			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	20	10	10
No of Call Established	10	19	10	10
Call setup success rate (CSSR) %	100%	95%	100%	100%
No. of Drop Call	0	0	0	0
Drop Call Rate %	0.00	0	0	0
Call Setup Time Average (Sec.)	0.73	2.86	1.1	0.56
Total no of RLT Occurrence	0.00	NA	NA	24
No of RLT > 48	0.00	NA	NA	0

4.5. Data Service Performance (5G/4G/3G/2G - auto mode) at each Hotspot location:

Name of Hotspot Location		Konark Sun Temple			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	19.53	0.4	40.19	9.23
	Average	39.81	5	399.8	11.03
	80th Percentile	62.97	23	205.4	16.37
Download Session Setup Success Rate %		100%	100%	100%	100%
Upload speed (Mbits/s)	Typical	11.05	2	10.67	3.02
	Average	22.15	3	26.36	2.32
	80th Percentile	28.72	12	35.13	10.26

Upload Session Setup Success Rate %		100%	100%	100%	100%
Latency (in ms)	50th Percentile	9.50	75.015	21.5	24
Jitter (in ms)	Average	2.85	1.20	19.79	0.13
Packet Drop Rate %		0.00	5	5.19	0.07%
Web browsing delay (in sec)		10.44	6.286	0.91	4.59
Video Streaming performance for video		2.83	6	0.33	1.37

4.6. Voice Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) at each Hotspot location

Name of Hotspot Location	Satapada			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	20	10	10
No of Call Established	10	18	10	10
Call setup success rate (CSSR) %	100%	90%	100%	100%
No. of Drop Call	0	0	0	0
Drop Call Rate %	0.00	0	0	0
Call Setup Time Average (Sec.)	0.97	3.36	1.1	0.52
Total no of RLT Occurrence	0.00	NA	NA	21
No of RLT > 48	0.00	NA	NA	0

4.7. Data Service Performance (5G/4G/3G/2G - auto mode) at each Hotspot location:

Name of Hotspot Location		Satapada			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	23.36	0.4	93.49	8.12
	Average	100.07	2	552.37	10.21
	80th Percentile	138.27	4	368.61	13.46
Download Session Setup Success Rate %		100%	100%	100%	100%
Upload speed (Mbits/s)	Typical	19.81	0.4	12.05	3.59
	Average	25.30	1	27.15	9.27
	80th Percentile	33.18	7	40.64	8.39
Upload Session Setup Success Rate %		100%	100%	100%	100%
Latency (in ms)	50th Percentile	9.50	94.165	21	22
Jitter (in ms)	Average	9.76	1.2	5.8	0.13
Packet Drop Rate %		0.00	4.6	0.1	0
Web browsing delay (in sec)		7.10	6.161	0.83	4.39
Video Streaming performance for video		3.76	6	0.43	3.84

4.8. Voice Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) at each Hotspot location

Name of Hotspot Location	Delang Railway Station			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	20	10	10
No of Call Established	10	18	10	10
Call setup success rate (CSSR) %	100%	90%	100%	100%
No. of Drop Call	0	0	0	0
Drop Call Rate %	0.00	0	0	0
Call Setup Time Average (Sec.)	0.68	2.86	1.2	0.49
Total no of RLT Occurrence	0.00	NA	NA	22
No of RLT > 48	0.00	NA	NA	0

4.9. Data Service Performance (5G/4G/3G/2G - auto mode) at each Hotspot location

Name of Hotspot Location		Delang Railway Station			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	10.42	0.4	107.85	7.94
	Average	23.26	2	461.37	6.4
	80th Percentile	30.51	4	371.63	11.92
Download Session Setup Success Rate %		100%	100%	100%	100%
Upload speed (Mbits/s)	Typical	7.29	0.1	11.76	2.96
	Average	15.39	0.3	38.11	1.79
	80th Percentile	22.23	1	48.16	6.91
Upload Session Setup Success Rate %		100%	100%	100%	100%
Latency (in ms)	50th Percentile	14.00	94.165	21	24
Jitter (in ms)	Average	17.67	1.3	7.9	0.14
Packet Drop Rate %		0.00	3.6	0.3	0.04
Web browsing delay (in sec)		5.93	6.069	0.86	3.52
Video Streaming performance for video		1.55	4	0.36	1.43

4.10. Voice Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) at each Hotspot location

Name of Hotspot Location	Puri railway Station			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	20	10	10
No of Call Established	10	19	10	10
Call setup success rate (CSSR) %	100%	95%	100%	100%
No. of Drop Call	0	0	0	0
Drop Call Rate %	0.00	0	0	0
Call Setup Time Average (Sec.)	0.74	2.86	1.2	0.51

Total no of RLT Occurrence	0.00	NA	NA	24
No of RLT > 48	0.00	NA	NA	0

4.11. Data Service Performance (5G/4G/3G/2G - auto mode) at each Hotspot location

Name of Hotspot Location		Puri railway Station			
Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	40.05	0.4	39.27	7.82
	Average	48.88	3	113.71	10.54
	80th Percentile	69.34	11	156.02	14.32
Download Session Setup Success Rate %		100%	100%	100%	100%
Upload speed (Mbits/s)	Typical	8.10	0.1	11.77	5.65
	Average	17.48	1	48.47	7.94
	80th Percentile	28.44	10	48.52	8.99
Upload Session Setup Success Rate %		100%	100%	100%	100%
Latency (in ms)	50th Percentile	9.50	139.72	21	22
Jitter (in ms)	Average	3.60	1.2	20.3	0.09
Packet Drop Rate %		0.00	3.1	3.78	0.02
Web browsing delay (in sec)		6.61	6.554	1.01	4.58
Video Streaming performance for video		1.03	5	0.38	3.52

4.12. Voice Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) at each Hotspot location

Name of Hotspot Location	Gopabandhu Ayurvedic College			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	20	10	10
No of Call Established	10	19	10	10
Call setup success rate (CSSR) %	100%	95%	100%	100%
No. of Drop Call	0	0	0	0
Drop Call Rate %	0.00	0	0	0
Call Setup Time Average (Sec.)	0.92	3.34	1.3	0.64
Total no of RLT Occurrence	0.00	NA	NA	26
No of RLT > 48	0.00	NA	NA	0

4.13. Data Service Performance (5G/4G/3G/2G - auto mode) at each Hotspot location

Name of Hotspot Location		Gopabandhu Ayurvedic College			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	8.71	0.4	40.61	8.11
	Average	35.27	1	473.35	10.23
	80th Percentile	43.01	4	229.89	13.15
Download Session Setup Success Rate %		100%	100%	100%	100%

Upload speed (Mbits/s)	Typical	7.63	0.4	30.29	6.24
	Average	14.51	2	80.5	12.47
	80th Percentile	21.05	13	66.9	8.23
Upload Session Setup Success Rate %		100%	100%	100%	100%
Latency (in ms)	50th Percentile	9.50	92.13	21	21
Jitter (in ms)	Average	4.88	1.2	6.7	0.13
Packet Drop Rate %		0.00	3.6	0.7	0.02
Web browsing delay (in sec)		5.33	3.076	0.83	4.69
Video Streaming performance for video		0.84	5	0.37	3.91

4.14. Voice Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) at each Hotspot location

Name of Hotspot Location	Govt Hospital			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	20	10	10
No of Call Established	10	20	10	10
Call setup success rate (CSSR) %	100%	100%	100%	100%
No. of Drop Call	0	0	0	0
Drop Call Rate %	0.00	0	0	0
Call Setup Time Average (Sec.)	0.95	2.34	1.1	0.53
Total no of RLT Occurrence	0.00	NA	NA	24
No of RLT > 48	0.00	NA	NA	0

4.15. Data Service Performance (5G/4G/3G/2G - auto mode) at each Hotspot location

Name of Hotspot Location		Govt Hospital			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	7.15	0.3	80.83	6.94
	Average	32.50	2	195.87	8.23
	80th Percentile	59.60	4	216.29	10.94
Download Session Setup Success Rate %		100%	100%	100%	100%
Upload speed (Mbits/s)	Typical	9.91	0.4	11.34	4.23
	Average	14.33	1	28.31	6.27
	80th Percentile	16.84	6	42.32	8.91
Upload Session Setup Success Rate %		100%	100%	100%	100%
Latency (in ms)	50th Percentile	19.00	96.155	37	26
Jitter (in ms)	Average	20.11	1.3	3	0.07
Packet Drop Rate %		0.00	3.2	0	0

Web browsing delay (in sec)	9.58	5.204	2.70	4.59
Video Streaming performance for video	4.34	6	0.33	2.98

4.16. Voice Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) at each Hotspot location

Name of Hotspot Location	Gundicha Temple			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	20	10	10
No of Call Established	10	19	10	10
Call setup success rate (CSSR) %	100%	95%	100%	100%
No. of Drop Call	0	0	0	0
Drop Call Rate %	0.00	0	0	0
Call Setup Time Average (Sec.)	0.73	3.45	1.2	0.48
Total no of RLT Occurrence	0.00	NA	NA	20
No of RLT > 48	0.00	NA	NA	0

4.17. Data Service Performance (5G/4G/3G/2G - auto mode) at each Hotspot location

Name of Hotspot Location		Gundicha Temple			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	18.17	0.3	43.84	8.46
	Average	60.54	3	230.68	10.56
	80th Percentile	81.56	6	181.34	12.64
Download Session Setup Success Rate %		100%	100%	100%	100%
Upload speed (Mbits/s)	Typical	16.29	0.4	11.82	5.85
	Average	22.35	2	14.91	7.12
	80th Percentile	29.36	4	48.49	9.21
Upload Session Setup Success Rate %		100%	100%	100%	100%
Latency (in ms)	50th Percentile	11.00	99.99	21	23
Jitter (in ms)	Average	7.09	1.4	23.04	0.08
Packet Drop Rate %		0.00	3.4	4.02	0.11
Web browsing delay (in sec)		9.11	5.705	1.02	3.28
Video Streaming performance for video		8.05	5	0.39	3.58

4.18. Voice Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) at each Hotspot location

Name of Hotspot Location	Jagannath Temple			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	20	10	10
No of Call Established	10	19	10	10
Call setup success rate (CSSR) %	100%	95%	100%	100%

No. of Drop Call	0	0	0	0
Drop Call Rate %	0.00	0	0	0
Call Setup Time Average (Sec.)	0.98	4.24	1.3	0.49
Total no of RLT Occurrence	0.00	NA	NA	23
No of RLT > 48	0.00	NA	NA	0

4.19. Data Service Performance (5G/4G/3G/2G - auto mode) at each Hotspot location

Name of Hotspot Location		Jagannath Temple			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	55.72	0.4	39.55	8.92
	Average	96.55	1	100.96	11.23
	80th Percentile	149.42	2	163.16	16.25
Download Session Setup Success Rate %		100%	100%	100%	100%
Upload speed (Mbits/s)	Typical	16.88	0.1	15.15	7.02
	Average	21.32	1	69.34	9.21
	80th Percentile	25.78	10	51.85	10.34
Upload Session Setup Success Rate %		100%	100%	100%	100%
Latency (in ms)	50th Percentile	9.50	98.01	21.5	24
Jitter (in ms)	Average	4.61	1.4	8.25	0.14
Packet Drop Rate %		0.00	3.5	3.88	0
Web browsing delay (in sec)		5.40	7.255	0.86	3.03
Video Streaming performance for video		0.92	4	0.5	2.98

4.20. Voice Service Performance (5G/ 4G/ 3G/ 2G - Auto mode) at each Hotspot location

Name of Hotspot Location	Lotus resort Konark			
Parameters	Airtel	BSNL	RJIL	VIL
No of Call Attempts	10	20	10	0
No of Call Established	10	20	10	0
Call setup success rate (CSSR) %	100%	100%	100%	0
No. of Drop Call	0	0	0	0
Drop Call Rate %	0.00	0	0	0
Call Setup Time Average (Sec.)	0.99	3.14	1.2	0
Total no of RLT Occurrence	0.00	NA	NA	0
No of RLT > 48	0.00	NA	NA	0

4.21. Data Service Performance (5G/4G/3G/2G - auto mode) at each Hotspot location

Name of Hotspot Location		Lotus resort Konark			
QoS Parameters		AIRTEL	BSNL	RJIL	VIL
Download speed (Mbits/s)	Typical	8.84	0.4	35.95	0
	Average	34.14	1	40.7	0
	80th Percentile	55.75	3	46.48	0
Download Session Setup Success Rate %		100%	100%	100%	0
Upload speed (Mbits/s)	Typical	4.22	0.1	5.6	0
	Average	12.40	0.2	6.5	0
	80th Percentile	15.64	0.3	8.17	0
Upload Session Setup Success Rate %		100%	100%	100%	0
Latency (in ms)	50th Percentile	25.00	99.82	23.5	0
Jitter (in ms)	Average	14.93	1.4	9.03	0
Packet Drop Rate %		0.00	3.1	1.84	0
Web browsing delay (in sec)		4.35	10.228	1.2	0
Video Streaming performance for video		1.88	4	0.46	0

4.22. Signal Strength distribution at Static location – Over all

Rx Level -2G								
Overall Rx Level	No. of Sample				Sample %			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max, ≥-65]	0	NA	NA	999844	0.00%	NA	NA	29.095%
[-65, ≥-75)	0	NA	NA	1183069	0.00%	NA	NA	34.427%
[-75, ≥-85)	0	NA	NA	923018	0.00%	NA	NA	26.859%
[-85, ≥Min)	0	NA	NA	330558	0.00%	NA	NA	9.619%
Total	0	NA	NA	3436489	0.00%	NA	NA	100%
Rx Level -3G								
Overall RSCP	No. of Sample				Sample %			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max, ≥-70]	ND	NA	NA	NA	ND	NA	NA	NA
[-70, ≥-80)	ND	NA	NA	NA	ND	NA	NA	NA
[-80, ≥-90)	ND	NA	NA	NA	ND	NA	NA	NA
[-90, ≥Min)	ND	NA	NA	NA	ND	NA	NA	NA
Total	ND	NA	NA	NA	ND	NA	NA	NA
Rx Level -4G								
Overall RSRP	No. of Sample				Sample %			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max, ≥-80]	1087	2412	2151	958057	23.2%	33.13%	77.18%	10.139%
[-80, ≥-95]	3099	3530	447	4094843	66.1%	48.48%	16.04%	43.335%
[-95, ≥-110]	499	366	109	3718263	10.7%	5.03%	3.91%	39.350%

[-110, ≥Min]	0.00	973	80	678009	0.00%	13.36%	2.87%	7.175%
Total	4685	7281	2787	9449172	100.00%	100.00%	100%	100 %
Rx Level -5G								
Overall RSRP	No. of Sample				Sample %			
	Airtel	BSNL	RJIL	VIL	Airtel	BSNL	RJIL	VIL
[Max, ≥-80]	3121	NA	22983	NA	70.214%	NA	51.44%	NA
[-80, ≥-95]	1321	NA	17604	NA	29.719%	NA	39.40%	NA
[-95, ≥-110]	3	NA	3831	NA	0.067%	NA	8.57%	NA
[-110, ≥Min]	0	NA	261	NA	0.00%	NA	0.58%	NA
Total	4445	NA	44679	NA	100.00%	NA	100%	NA

5. Improvement plan for shortcoming observed during Drive Test

Sr. No	Name of TSP	Route / Location	Name of Area & LSA	Lat. & Long.	Observation (No coverage / Poor coverage / Poor Signal Quality/ Call drops / Call Setup failure, and Hand Over failure/ Block/ Down Link Packet Drop/ Up	Improvement Plan (Optimization /Radiatio n of New Site/up-gradation of existing site/upgradati on of backhaul etc.)	Time Line/ Remarks
1	Airtel	Puri-Pipill Via Konark & Pipill to Puri	Puri-Konark Marine Rd	19.850034 , 85.976542	Poor Coverage	Optimization done site id is ORGHT-01 and ORNWY-06	09-May-2026
2	Airtel	Puri-Pipill Via Konark & Pipill to Puri	Ramachandi	19.855983, 86.059902	Poor Coverage	Optimization done site id is ORULS-287,ORCNBG-01,ORKON-03 and ORNWY-06	09-May-2026
3	Airtel	Puri-Satapada	Gorula	19.809556 , 85.737383	Poor Coverage		11-May-2026
4	Airtel	Puri-Pipill Via Konark & Pipill to Puri	Talabania	19.817168 , 85.859346	Poor Coverage	Optimization done site id is ORULS-1457 AND ORPUR-112	10-May-2026
5	Airtel	Puri-Satapada	Acharya Harihara Square	19.797691 , 85.827378	Poor Coverage	Optimization done site id is ORPUR-10 and ORPUR-24	10-May-2026
6	BSNL	MAJOR ROUTE(KONAR K-PIPILI)	SANAKUNDURU	19.94174 & 86.05057	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
7	BSNL	MAJOR ROUTE(KONAR K-PIPILI)	BEGURIA	19.95831 & 86.0361	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	

8	BSNL	MAJOR ROUTE(KONAR K-PIPILI)	DAHIJANG A	20.07398 & 85.9704	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
9	BSNL	MAJOR ROUTE(KONAR K-PIPILI)	DHANUA	20.08899 & 85.92541	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
10	BSNL	MAJOR ROUTE(KONAR K-PIPILI)	SALAJANG A	20.10325 & 85.88151	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
11	BSNL	NH-316(PURI- KONARK))	JAGANNA TH VIHAR	19.82858 & 85.86499	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
12	BSNL	NH-316(PURI- KONARK))	NAKHISA HI	19.8494 & 85.9194	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
13	BSNL	NH-316(PURI- KONARK))	BALUKHA ND	19.8502 & 85.9799	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
14	BSNL	NH-316(PURI- KONARK))	RURAI	19.8566 & 86.0422	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
15	BSNL	NH-316(PURI- KONARK))	SAHUKHA NATA	19.8617 & 86.09337	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
16	BSNL	NH-316(PIPILI- PURI)	POTAL	20.0259 & 85.8225	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
17	BSNL	NH-316(PIPILI- PURI)	KADAMPA DA	19.9711 & 85.8245	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
18	BSNL	PURI- SATAPADA	BELARI	19.808258 & 85.732628	Poor coverage / Poor Signal Quality speed	New Site	

					less than 2Mb locations		
19	BSNL	PURI-SATAPADA	KALIKAB ADI	19.790478 & 85.626590	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
20	BSNL	PURI-SATAPADA	GOPINATH PUR	19.739525 & 85.566603	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
21	BSNL	PURI-DELANG	POSHAL	20.021382 & 85.781543	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
22	BSNL	RAMESWAR-PURI	INIPINA	19.911262 & 85.744823	Poor coverage / Poor Signal Quality speed less than 2Mb locations	New Site	
23	RJIO	Gundicha Temple	Puri town	19.816581, 85.838331	UL Throughput	Optimization	01-May-2026 Done
24	RJIO	Gundicha Temple	Puri town	19.816581, 85.838331	High Jitter	Optimization	01-May-2026 Done
25	RJIO	Puri-Konark	Konark Sun Temple	19.890068, 86.099974	High Jitter	Optimization	28-Apr-2026 Done
26	RJIO	Govt Medical Puri	Puri town	19.814748 ,85.830048	High Packet drop	Optimization	29-Apr-2026 Done
27	RJIO	Puri-Konark Marine drive	Baidash nagar chhak	19.8357/8 5.8872	Poor coverage	Optimization	5-May-2026 Done
28	VIL-4G	NH 16 Near Kuradhamala	Near Kuradhamala	20.127790 / 85.583931	Poor Coverage	Post optimization done	02-April-2026
29	VIL-4G	NH 16 Near Khajuria	Near Khajuria	20.0493/85.5357	Poor Coverage	Post optimization done	02-April-2026
30	VIL-4G	Near Pattajoshi pur	Near Pattajoshi pur	19.986877/ 85.572168	Poor Coverage	Post optimization done	02-April-2026
31	VIL-2G	Near Naugaon	Near Naugaon	19.6892/85.4710	Poor Coverage	Post optimization done	02-April-2026
32	VIL-4G	Near Adarsingha	Near Adarsingha	19.945883/ 85.677011	Poor Coverage	Post optimization done	02-April-2026
33	VIL-4G	NH 316 Near Jagannath vihar road	Near Jagannath vihar road	19.828589/ 85.868833	Poor Coverage	Post optimization done	02-April-2026
34	VIL-2G	Puri-Konark road,near bhuan	Puri-Konark road,near bhuan	19.850647/ 85.959658	Poor Coverage	Post optimization done	02-April-2026

6. Compliance Report for shortcomings observed during Drive Test

Improvement in KPI Parameter	Airtel	BSNL	RJIL	VIL
Call Drop location/area wise action taken and improvement observed		OPTIMISATION IN NATIONAL HIGHWAYS NEEDED /OPTIMISATION IN NATIONAL HIGHWAYS NEEDED	No	Action taken and improved
Down Link Packet Drop (DLPD) for voice & Up Link Packet Drop (ULPD) for voice in 4G & 5G - location/area wise action taken and improvement observed			No	
Call Setup failure, and Hand Over failure -location/area wise action taken and improvement observed		CSSR in 4G is 67. The reason behind low CSSR is requirement of new sites due to no coverage maximum area.	No	Action taken and improved
Poor Rx Quality - location/area wise action taken and improvement observed	Action taken And Improved		No	
Poor Coverage - location/area wise action taken and improvement observed	Action taken And Improved	OPTIMISATION IN NATIONAL HIGHWAYS NEEDED	Optimization done, coverage improved	
Poor DL Speed (i.e. Speed < 2 Mbps) -location/area wise action taken and improvement observed			No	Nil locations
Others Poor KPIs (e.g. high latency, etc) - location/area wise action taken and improvement observed			No	Action taken and improved

Annexure-I

Drive Test Methodology adopted during the Drive test:

(1) Voice Tests:

Sl. No.	QoS Parameter	Measurement Criteria and methodology
1	Call setup time	Time taken from call initiate to call alerting/ringing.

2	Call setup success rate	CSSR = (Total Call Established/ Total Call Attempt) *100 Call Setup attempt time: 30 sec. Call duration (City/Highway): 90/180 sec. Wait/ Guard Time: 15sec.
3	Dropped Call rate (DCR)	Call Drop Rate = (Total Call Drop/Total Call Established) *100
4	Call Silence Rate (Muting)	Silence call rate = (count of silence / Total calls established) *100 Continuous RTP gap ≥ 2 sec
5	Handover Success Rate	Handover Success Rate = Count of successful handovers (All Technology Handover combined) / Total count of Handover Attempt (All Technology Handover combined) *100 Handover types which are considered- 2G Inter & Intra cell, 3G Soft & IRAT, 4G Inter & Intra frequency & SRVCC, 5G Inter & Intra frequency & 5G to 4G handovers.
6	Packet Drop Rate (DL & UL) for Packet Switched Network (4G & 5G)	Number of RTP (Real-time Transport Protocol) Packets lost divided by total RTP packet received (against each source SSRC and sequence number) at call originating handset. This KPI will be calculated from MOS call for packet call only (VoNR/VoLTE)
7	Mean Opinion Score (MOS) Performance (in 5G/4G/3G/2G: Auto mode)	Voice quality in mobile networks is measured with algorithms based on ITU-T P.863 (POLQA) Excellent: MOS ≥ 4 and < 5 , Good: MOS ≥ 3 and < 4 , Fair: MOS ≥ 2 and < 3 , Poor : MOS ≥ 1 and < 2

(2) Data Tests:

Sl. No.	QoS Parameter	Measurement Criteria and methodology
1	Data speed in Mbits/s (DL/UL both)	Download Speed = Total bytes transferred during download / Total time for transfer Upload Speed = Total bytes transferred during upload / Total time for transfer. Download: File Size: 500 MB for 120 sec, 30 Sec Timeout Upload: File size: 250 MB for 120 sec, 30 Sec Timeout (Multithread 3- TCP Connection at a time for both DL & UL)
2	Latency (in ms)	Latency is the time taken by a packet to reach the receiving end point after being transmitted from the sending point in broadband service. Test with Packet of size of 512 Bytes - 1000 count on TSP's Test server using UDP packets (TWAMP)
3	Jitter (in ms)	Test with Packet of size of 512/256 Bytes - 1000 count on TSP's own Test server using UDP (TWAMP) & RTP packets separately
4	Session Setup Success Rate (in %) (DL/UL)	(Total DL or UL session established (successfully connected to server)/ Total DL or UL session attempt) x100

5	Packet drop rate (in %)	No. of packets lost out of total packet transferred during the testing. • Packet loss rate = (Total packet lost / Total packet sent) x100 Packet delay (RTT) >90 ms considered as packet loss and included in Packet drop rate. • The measurement should include all major types of packets i.e., TCP, UDP and RTP in their representative ratio. The 90th percentile value of the packet drop measurements shall be considered the Packet drop rate.
6	Web browsing delay (in seconds)	Time taken to open the web page successfully is considered as web browsing delay / web page download time. LSA-wise 3 popular websites to be taken
7	Video Streaming performance (in seconds)	TRAI Prescribed Video of 20 Sec with 25 sec Timeout & without caching https://www.youtube.com/watch?v=rH2RjvI0DFs