For Immediate Release

TRAI Assesses Network Quality Across Hazaribagh district and adjoining areas in the State of Jharkhand, along National Highways (NH- 19, 20 and 22) from Ranchi to Patna and along railway route from Patna to Ranchi, all under Bihar Licensed Service Area (LSA)

The Telecom Regulatory Authority of India (TRAI) released its Independent Drive Test (IDT) findings for the Bihar LSA, covering extensive city routes of Hazaribagh district and adjoining areas, highway route of Ranchi to Patna along NH- 19, 20 and 22 and railway route from Patna to Ranchi in the month of November 2025. The drive tests, conducted under the supervision of the TRAI Regional Office, Kolkata, were designed to capture real-world mobile network performance across diverse usage environments- Urban Zones, Institutional Hotspots, business areas, residential areas, experience of passengers and others along the rail route etc.

Between **20th November 2025 and 28th November 2025**, TRAI teams conduced detailed tests across city routes of Hazaribagh district and adjoining areas, highway route of Ranchi to Patna along NH- 19, 20 and 22 and railway route from Patna to Ranchi in Bihar LSA covering **220.9 Km of city drive** test, **18 Hotspot** locations, **2.1 Km of walk test, 327.5 Km of Highway drive** test, and **376.9 Km railway drive** test. Technologies evaluated included 2G, 3G, 4G, and 5G, reflecting the service experience of users across multiple handset capabilities. The findings of the IDT have already been intimated to all the TSPs concerned.

Key Parameters Assessed:

a) **Voice Services**: Call Setup Success Rate (CSSR), Drop Call Rate (DCR), Call Setup Time, Call Silence Rate, Speech Quality (MOS), Coverage.

b) **Data Services**: Download/Upload Throughput, Latency, Jitter, Packet Drop Rate, and Video Streaming Delay.

The overall mobile network performance in city routes of Hazaribagh district and adjoining areas, highway route of Ranchi to Patna along NH- 19, 20 and 22 and railway route from Patna to Ranchi is summarized below:

Name of Service Provider	Call Setup Success Rate				Drop Call Rate			
	City	Highway	Railway	Overall	City	Highway	Railway	Overall
Airtel	99.65	100.00	81.48	96.63	0.00	0.00	1.82	0.27
BSNL	72.14	79.04	14.72	57.80	8.54	9.09	11.32	6.79
RJIL	99.66	100.00	95.87	99.21	0.34	0.00	4.31	0.79
VIL	89.31	82.18	59.43	82.99	7.75	9.09	23.08	8.73

In auto-selection mode (5G/4G/3G/2G)

5G Data Services delivered maximum average download speed of 199.26 Mbps and maximum average upload speed of 24.47 Mbps in the overall drive test.

The poor Signal Strength in auto-selection mode (5G/4G/3G/2G) has been observed for 5.53%, 46.10%, 4.52% & 23.98% of the total IDT route **in city drive** in case of Airtel, BSNL, RJIL & VIL respectively.

In **Hazaribagh district and adjoining areas**, the assessment included the areas of Hadri, Kariyatpur, Harli Peto, Daru, Amnari, Kesura, Sita Garha, Hurhuru, Nawada, Hupad, Haram, Harli, Barkagaon,

Pakri Barwadih, Jamuari, Pundri, Sultana, Gadokhar, Lupung, Dumraun, Mandai Khurd, Nawabganj etc.

TRAI also evaluated real-world conditions at (i) Barachatti Post Office, Tetariya Khurd, Bihar; (ii) Birla Institute of Technology, Mesra, Jharkhand; (iii) Canary Hill Hazaribagh, Jharkhand; (iv) Civil Court Hazaribagh, Jharkhand; (v) Head Post Office, Hazaribagh, Jharkhand; (vi) Hazaribagh New Bus Stand, Hazaribagh, Jharkhand; (vii) Hazaribagh Wildlife Sanctuary, Hazaribagh, Jharkhand; (viii) Hesagarha Panchayat Bhawan, Kasikhap, Jharkhand; (ix) Kendua More Chauparan Bus Stand, Chouparan, Jharkhand; (x) Maa Vindhyavashini College of Education, Karmatanr, Jharkhand; (xi) Main Gate IIMBG, Gaya, Bihar; (xii) New Buliding Sheikh Bhikhari Medical College, Hazaribagh, Jharkhand; (xiii) Powergrid Co. of India Ltd. Gaya, Bhanwarbar, Bihar; (xiv) Radha Govind University, Lalki Ghati, Jharkhand; (xv) Saheed Nirmal Mahto Chowk, Kothar, Jharkhand; (xvi) Shivaji Chowk, Vijaynagar, Ranchi, Jharkhand; (xvii) S.N Sinha College, Jehanabad, Bihar; (xviii) Vinoba Bhave University, Hazaribagh, Jharkhand, through **static testing** and
at (i) Hazaribagh Town Railway Station, Jharkhand; (ii) Sadar Hospital Hazaribagh, Jharkhand, through **walk-test**.

Performance against key QoS parameters:

CSSR: Call Setup Success Rate (in %), **CST**: Call Setup Time (in seconds), **DCR**: Drop Call Rate (in %) & **MOS**: Mean Opinion Score

CSSR		CST		DCR		Mute call		MOS	
RJIL	99.21%	RJIL	0.76	Airtel	0.27%	RJIL	1.44%	VIL	4.46
Airtel	96.63%	VIL	1.73	RJIL	0.79%	Airtel	1.98%	RJIL	4.44
VIL	82.99%	Airtel	1.74	BSNL	6.79%	VIL	7.89%	Airtel	3.99
BSNL	57.80%	BSNL	3.29	VIL	8.73%		BSNL does not provide VoLTE/ VoNR service	BSNL	2.64

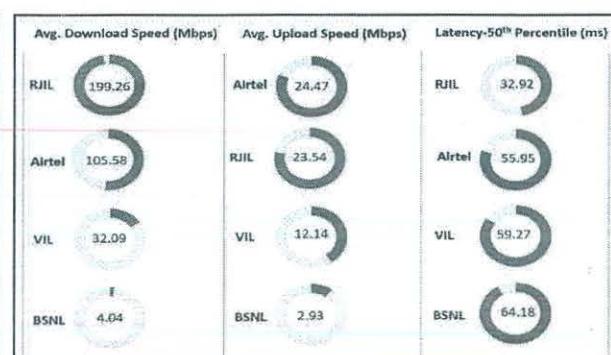| Avg. Download Speed (Mbps)		Avg. Upload Speed (Mbps)		Latency-50th Percentile (ms)	
RJIL	199.26	Airtel	24.47	RJIL	32.92
Airtel	105.58	RJIL	23.54	Airtel	55.95
VIL	32.09	VIL	12.14	VIL	59.27
BSNL	4.04	BSNL	2.93	BSNL	64.18

Summary-Voice services

Call Setup Success Rate: Airtel, BSNL, RJIL and VIL have call setup success rate of 96.63%, 57.80%, 99.21% and 82.99% respectively in Auto-selection mode (5G/4G/3G/2G).

Call Setup Time: Airtel, BSNL, RJIL and VIL have call setup time of 1.74, 3.29, 0.76 and 1.73 seconds respectively in Auto-selection mode (5G/4G/3G/2G).

Drop Call Rate: Airtel, BSNL, RJIL and VIL have drop call rate of 0.27%, 6.79%, 0.79% and 8.73% respectively in Auto-selection mode (5G/4G/3G/2G).

Call Silence/Mute Rate: Airtel, RJIL and VIL have silence call rate of 1.98%, 1.44% and 7.89% respectively in packet switched network (5G/4G).

Mean Opinion Score (MOS): Airtel, BSNL, RJIL and VIL have Average MOS of 3.99, 2.64, 4.44 and 4.46 respectively.

Summary-Data services

Data Download performance (Overall): Average download speed of Airtel (5G/4G/2G) is 105.58 Mbps, BSNL (4G/3G/2G) is 4.04 Mbps, RJIL (5G/4G) is 199.26 Mbps and VIL (4G/2G) is 32.09 Mbps.

Data Upload performance (Overall): Average upload speed of Airtel (5G/4G/2G) is 24.47 Mbps, BSNL (4G/3G/2G) is 2.93 Mbps, RJIL (5G/4G) is 23.54 Mbps and VIL (4G/2G) is 12.14 Mbps.

Latency (Overall): Airtel, BSNL, RJIL & VIL 50th percentile latency is 55.95 ms, 64.18 ms, 32.92 ms, 59.27 ms respectively.

Data performance - Hotspots (in Mbps):
Airtel- 4G D/L: 37.25   4G U/L: 9.72
        5G D/L: 132.94   5G U/L: 42.18
BSNL- 4G D/L: 4.49   4G U/L: 6.14
RJIL- 4G D/L: 47.20   4G U/L: 11.97
       5G D/L: 237.78   5G U/L: 29.60
VIL- 4G D/L: 31.09   4G U/L: 12.26

The tests were conducted using TRAI suggested equipment and standardised protocols in real-time environments. The detailed report is available at TRAI website www.trai.gov.in. For any clarification/information, Shri Kaushik Mukherjee, Advisor (Regional Office, Kolkata) TRAI may be contacted on email: adv.kolkata@trai.gov.in or at Tel. No. +91-33-22361401.

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