**For Immediate Release**

## TRAI Assesses Network Quality Across Kolkata City and parts of Howrah and Hooghly Districts and adjoining areas under Kolkata Telecom District, and along Kolkata Metro rail route (Blue Line, Orange Line, Purple Line, and Green Line) under Kolkata Licensed Service Area

The Telecom Regulatory Authority of India (TRAI) released its Independent Drive Test (IDT) findings for the Kolkata Licensed Service Area (LSA), covering extensive city routes in Kolkata city and parts of Howrah and Hooghly districts under Kolkata Telecom District and **Kolkata Metro railway route** (Blue Line, Orange Line, Purple Line and Green Line) in the month of July 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, rural residential areas, urban rail network etc.

Between **9th July 2025 to 24th July 2025**, TRAI teams conduced detailed tests across Kolkata city, parts of Howrah and Hooghly districts under Kolkata Telecom District and Metro railway routes covering 379.1 Km of city drive test, 58.7 Km of Metro railway test, 15 Hotspot locations and 3.5 Km of walk 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 Kolkata city, Howrah and Hooghly districts under Kolkata Telecom District and Kolkata Metro railway routes is summarized below:

**Call Setup Success Rate-** Airtel, BSNL, RJIL and VIL have call setup success rate of 100%, 90.49%, 99.89% and 99.78% respectively in Auto-selection mode (5G/4G/3G/2G).

**Drop Call Rate-** Airtel, BSNL, RJIL and VIL have drop call rate of 0.22%, 4.56%, 0.33% & 0.11% respectively in Auto-selection mode (5G/4G/3G/2G).
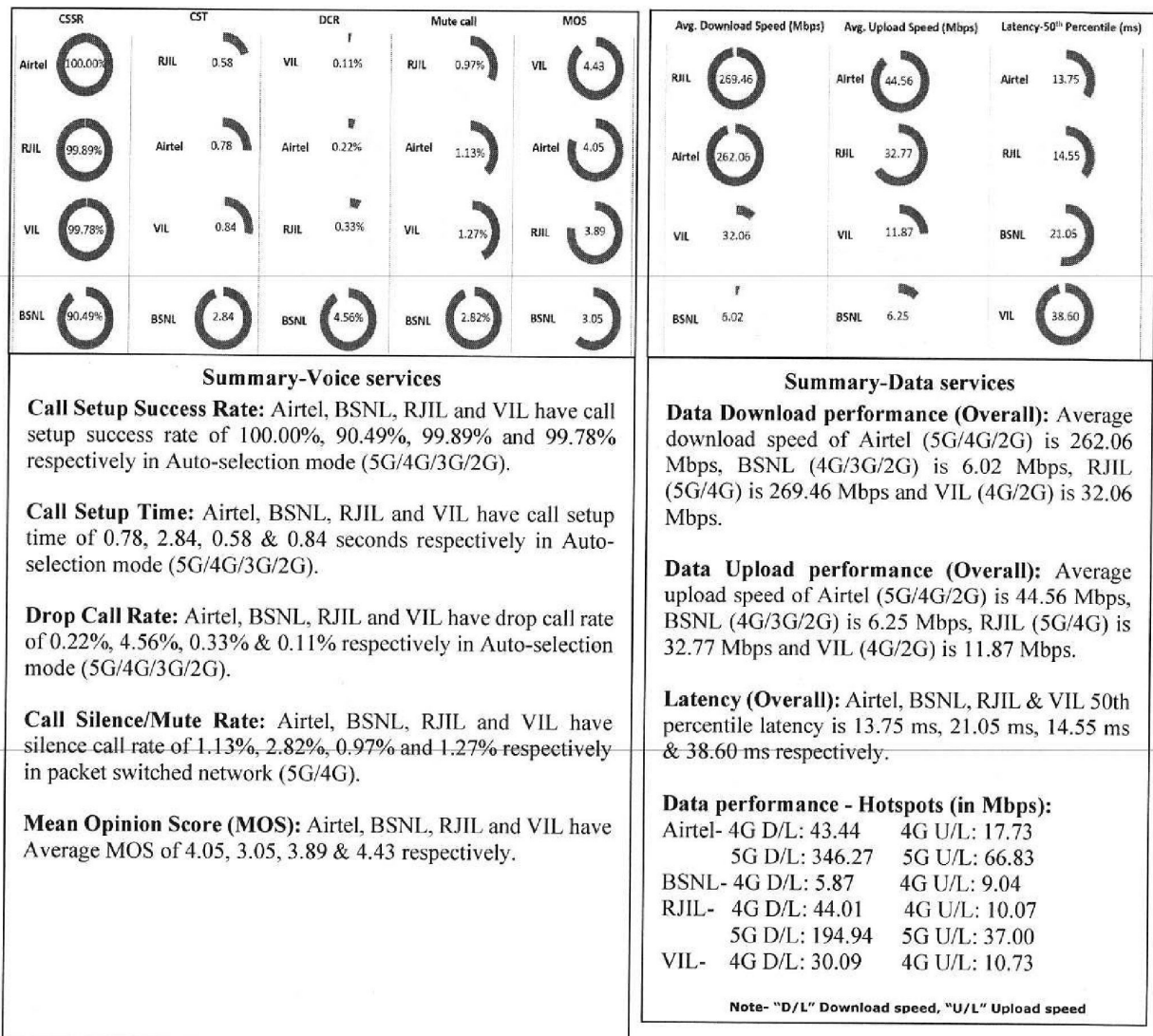
**5G Data Services** delivered maximum average download speed of 310.06 Mbps and maximum average upload speed of 45.30 Mbps in city drive.

**Along the Metro rail route**, high drop call rate was measured in the *Blue Line* (Dakshineswar to Kavi Subhash) with values of 6.90% for Airtel, 17.86% for BSNL, 6.67% for RJIL and 3.57% for VIL. Average data download speed in the Blue Line (longest route underground) was measured with values of 154.12 Mbps for Airtel, 5.55 Mbps for BSNL, 135.57 Mbps for RJIL and 23.16 Mbps for VIL.

In **Kolkata City and parts of Howrah and Hooghly districts under Kolkata TD** the assessment included the areas of Behala, Majherhat, Rasbihari Avenue, Hajra More, Tapsia, Ballygunge, E M Bypass, Garia, Jadavpur, Tollygunge, Alipore, College Street, Beleghata, Sealdah, Howrah Bridge, Shibpur, Alampur, Dhulagar, Panchla, Chengail, Bauria, Nalpur, Rishra, Uttarpara, Srirampur, Baidyabati, Chandannagar, Mankundu, Chinsurah, Bansberia, Tribeni, Chuttipur, Balarambati, Singur, Chhinamor, Dankuni, Bankra, , Bhadrakali, Belurmath, etc.. TRAI also evaluated real-world conditions at (i) Acropolis Mall Sector-1 Kolkata, (ii) Belur Math, (iii) Calcutta High Court, (iv) Chandannagar Sub Divisional Hospital, (v) Dankuni Railway Junction, (vi) Esplanade Metro Station, (vii) Howrah District Hospital, (viii) Indian Institute of Engineering Science and Technology (IIEST), (ix) Jadavpur University Kolkata, (x) Jaladhulagori Toll Plaza NH-6 Howrah, (xi) Sarat Chandra Chattopadhyay Govt. Medical College & Hospital (Jadurberia Campus), (xii) Satyanarayan Park AC Market, (xiii) Sealdah Metro Station; (xiv) Sealdah Railway Station, (xv) Victoria Memorial, through **static testing** and at (i) Howrah Railway Station, (ii) New Market, and (iii) SSKM Hospital, 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 | |
|---|---|---|---|---|---|---|---|---|---|
| Airtel | 100.00% | RJIL | 0.58 | VIL | 0.11% | RJIL | 0.97% | VIL | 4.43 |
| RJIL | 99.89% | Airtel | 0.78 | Airtel | 0.22% | Airtel | 1.13% | Airtel | 4.05 |
| VIL | 99.78% | VIL | 0.84 | RJIL | 0.33% | VIL | 1.27% | RJIL | 3.89 |
| BSNL | 90.49% | BSNL | 2.84 | BSNL | 4.56% | BSNL | 2.82% | BSNL | 3.05 |

| Avg. Download Speed (Mbps) | | Avg. Upload Speed (Mbps) | | Latency-50ᵗʰ Percentile (ms) | |
|---|---|---|---|---|---|
| RJIL | 269.46 | Airtel | 44.56 | Airtel | 13.75 |
| Airtel | 262.06 | RJIL | 32.77 | RJIL | 14.55 |
| VIL | 32.06 | VIL | 11.87 | BSNL | 21.05 |
| BSNL | 6.02 | BSNL | 6.25 | VIL | 38.60 |

### Summary-Voice services

**Call Setup Success Rate:** Airtel, BSNL, RJIL and VIL have call setup success rate of 100.00%, 90.49%, 99.89% and 99.78% respectively in Auto-selection mode (5G/4G/3G/2G).

**Call Setup Time:** Airtel, BSNL, RJIL and VIL have call setup time of 0.78, 2.84, 0.58 & 0.84 seconds respectively in Auto-selection mode (5G/4G/3G/2G).

**Drop Call Rate:** Airtel, BSNL, RJIL and VIL have drop call rate of 0.22%, 4.56%, 0.33% & 0.11% respectively in Auto-selection mode (5G/4G/3G/2G).

**Call Silence/Mute Rate:** Airtel, BSNL, RJIL and VIL have silence call rate of 1.13%, 2.82%, 0.97% and 1.27% respectively in packet switched network (5G/4G).

**Mean Opinion Score (MOS):** Airtel, BSNL, RJIL and VIL have Average MOS of 4.05, 3.05, 3.89 & 4.43 respectively.

### Summary-Data services

**Data Download performance (Overall):** Average download speed of Airtel (5G/4G/2G) is 262.06 Mbps, BSNL (4G/3G/2G) is 6.02 Mbps, RJIL (5G/4G) is 269.46 Mbps and VIL (4G/2G) is 32.06 Mbps.

**Data Upload performance (Overall):** Average upload speed of Airtel (5G/4G/2G) is 44.56 Mbps, BSNL (4G/3G/2G) is 6.25 Mbps, RJIL (5G/4G) is 32.77 Mbps and VIL (4G/2G) is 11.87 Mbps.

**Latency (Overall):** Airtel, BSNL, RJIL & VIL 50th percentile latency is 13.75 ms, 21.05 ms, 14.55 ms & 38.60 ms respectively.

**Data performance - Hotspots (in Mbps):**
Airtel- 4G D/L: 43.44    4G U/L: 17.73
       5G D/L: 346.27    5G U/L: 66.83
BSNL- 4G D/L: 5.87    4G U/L: 9.04
RJIL- 4G D/L: 44.01    4G U/L: 10.07
       5G D/L: 194.94    5G U/L: 37.00
VIL- 4G D/L: 30.09    4G U/L: 10.73

Note- "D/L" Download speed, "U/L" Upload speed

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 B. Praveen Kumar, Advisor (Regional Office, Kolkata) TRAI may be contacted on email: adv.kolkata@trai.gov.in or at Tel. No. +91-33-22361401.

**(B. Praveen Kumar)** 15/9/2025
**Advisor, TRAI RO Kolkata**