सत्यमेव जयते

भादूविप्रा
TRAI

भारतीय दूरसंचार विनियामक प्राधिकरण

TELECOM REGULATORY AUTHORITY OF INDIA

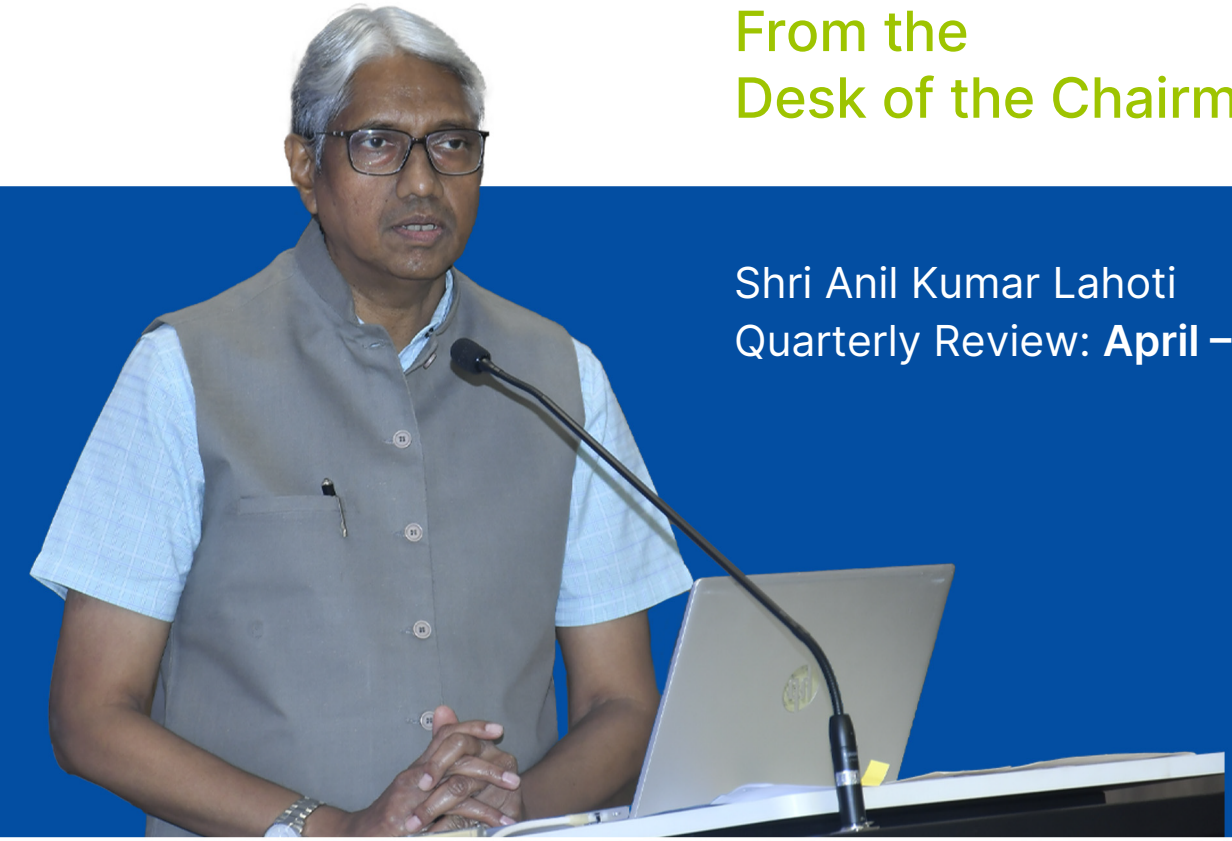
# QUARTERLY E-NEWSLETTER

**(April-June) 2025**

# Table of Contents



# From the Desk of the Chairman, TRAI



Shri Anil Kumar Lahoti
Quarterly Review: **April – June 2025**

The first quarter of FY 2025–26 has seen the Telecom Regulatory Authority of India (TRAI) taking several strategic and forward-looking regulatory actions to strengthen digital infrastructure, consumer rights, and emerging technology ecosystems. Notable among them were the recommendations on critical M2M services and ownership of M2M SIMs (April 2025), and spectrum assignment for satellite-based services (May 2025), aiming to strengthen frameworks for IoT and satellite communications. TRAI also released a Draft Manual for Rating of Properties for Digital Connectivity and organized a national workshop to promote integration of digital infrastructure into urban development.

Furthering consumer protection, a pilot for Digital Consent Acquisition was launched in coordination with RBI-regulated banks under the Consent Registration Function framework to address unsolicited communications. TRAI also introduced Mobile Network Coverage Maps for public use, automated submission of Performance Monitoring Reports to ease compliance for service providers and conducted Quality of Service drive tests across multiple cities and routes. These initiatives reflect TRAI's ongoing commitment to transparency, digital readiness, and a future-oriented telecom environment for all citizens.

# Consultations

## TRAI released Pre-Consultation Paper on Review of existing TRAI Regulations on Interconnection matters 3rd Apr 2025

Pre-consultation paper on "Review of existing TRAI Regulations on Interconnection matters" released on 3rd April 2025. The last date for submission of inputs/comments from stakeholders on the pre-consultation paper was 16th April 2025, which was extended to 23rd April 2025. In total, 15 comments have been received: 8 from service providers, 5 from associations, 1 from companies/ organizations/ firms and 1 from consumer advocacy group.

http://www.trai.gov.in/sites/default/files/2025

## Extension of the last date to receive comments/counter-comments on the TRAI's Consultation Paper on 'Assignment of the Microwave Spectrum in 6 GHz (lower), 7 GHz, 13 GHz, 15 GHz, 18 GHz Bands, E-Band, and V-Band'. On 25.06.2025

TRAI released a Consultation Paper on 'Assignment of the Microwave Spectrum in 6 GHz (lower), 7 GHz, 13 GHz, 15 GHz, 18 GHz, 21 GHz Bands, E-Band, and VBand' on 28.05.2025. The last dates for receiving written comments and counter comments from stakeholders on the issues raised in the Consultation Paper was fixed as 25.06.2025 and 09.07.2025, respectively.

However, on the requests of industry associations and stakeholders for extension of time for submission of comments, it was decided to extend the last dates for the submission of written comments and counter comments up to 02.07.2025 and 16.07.2025, respectively.

http://www.trai.gov.in/sites/default/files/2025

## TRAI released Consultation Paper on Assignment of the Microwave Spectrum in 6 GHz (lower), 7 GHz, 13 GHz, 15 GHz, 18 GHz, 21 GHz Bands, E-Band, and V-Band' dated 28.05.2025

Earlier, the Department of Telecommunications (DoT), through a letter dated 12.08.2022, had requested TRAI to provide recommendations for assignment of spectrum in E&V Bands and Microwave Access (MWA) & Microwave Backbone (MWB) spectrum in frequency bands of 6/7/13/15/18/21 GHz. In this regard, TRAI released a consultation paper on Assignment of Spectrum in E&V Bands, and Microwave Access (MWA) & Microwave Backbone (MWB) for soliciting comments of stakeholders on the subject.

In the meanwhile, the Telecommunication Act, 2023 was enacted in December 2023. In light of the provisions of the Telecommunications Act, 2023 in respect of radio backhaul for telecommunication services, TRAI, through a letter dated 20.02.2024, conveyed to DoT that "the DoT's Reference dated 12.08.2022, requesting TRAI to provide its recommendations for (a) methodology of auction of E&V band spectrum and (b) allocation methodology of MWA and MWB RF carriers in 6/7/13/15/18/21 GHz bands, may require a review by DoT. Therefore, DoT is requested to provide the specific issues on which TRAI's recommendations are now required on the subject."

In response, DoT, through a fresh reference letter dated 13.09.2024, while agreeing to the TRAI's observation that backhaul spectrum is a part of the First Schedule of the Telecommunications Act, 2023 for which the assignment method would be administrative, requested TRAI to provide recommendations under Section 11(1)(a) of the TRAI Act, 1997 on the following aspects:

"(a) Demand assessment and scope of service/ usage for (i) 57-64/66 GHz (V-band) and (ii) 71-76 GHz/ 81-86 GHz (E-band) and accordingly methodology of assignment of spectrum and associated terms & conditions, in line with the determination of scope of services/ usages by TRAI i.e. "Access" or "Backhaul" or "Integrated Access & Backhaul (IAB)".

(b) Spectrum charges and related terms & conditions such as spectrum cap, carrier aggregation, etc. for assignment of spectrum in 6 (lower)/7/15/13/18/21 GHz bands for backhaul purposes of commercial telecom services.

(c) Any need for review in respect of use of 7/15 GHz bands in view of consideration of these bands for Access using IMT after WRC-2027.

(d) Quantum/ band(s) of spectrum to be earmarked for last mile connectivity (Fixed Wireless Access) of commercial telecom services and methodology of assignment of spectrum and associated terms & conditions in non-IMT bands as referred to in Para 2.2 above.

(e) Quantum/ band(s) of spectrum to be earmarked for Backhaul purposes for noncommercial/captive use and associated terms & conditions including charges as referred to in Para 2.3 above.

(f) Feasibility & technical parameters, for allowing low power, indoor, consumer device-to-consumer device usage on license-exempt basis in V-band as referred to in Para 4(d) of reference dated 12-08-2022.

http://www.trai.gov.in/sites/default/files/2025

(g) Provide any other recommendations deemed fit for the purposes mentioned under (a) to (f) above." In this regard, a consultation paper on Assignment of the Microwave Spectrum in 6 GHz (lower), 7 GHz, 13 GHz, 15 GHz, 18 GHz, 21 GHz Bands, E-Band, and V-Band has been released on 28.05.2025 for seeking comments and counter-comments from stakeholders. Written comments on the issues raised in the consultation paper are invited from stakeholders by 25.06.2025 and counter- comments by 09.07.2025, respectively. A copy of the consultation paper be accessed from the following

# Recommendations

## TRAI issued its response on 25.04.25 to the back- reference received from Department of Telecommunications (DoT) in respect of TRAI's recommendations dated 12.04.2024 on "Encouraging innovative Technologies, Services, Use Cases, and Business Models through Regulatory Sandbox in Digital Communication Sector.

Earlier, DoT, through a reference dated 10.03.2023,inter-alia requested TRAI, under Section 11(1)(a) of the TRAI Act, 1997, to provide recommendations on framework for Regulatory Sandbox for emerging technologies, services and business model in telecom sector. After a detailed consultation with stakeholders, TRAI provided its recommendations on "Encouraging Innovative Technologies, Services, Use Cases, and Business Models through Regulatory Sandbox in Digital Communication Sector" dated 12.04.2024 to DoT.

Subsequently, DoT, through a back-reference dated 19.03.2025, asked TRAI to reconsider its recommendations dated 12.04.2024 on "Encouraging Innovative Technologies, Services, Use Cases and Business Models through Regulatory Sandbox in Digital Communication Sector".

After examining the issue, TRAI finalized its response to the back-reference which can be accessed from following link

http://www.trai.gov.in/sites/default/files/2025

## TRAI response dated 25.03.2025 to the DoT's back-reference in respect of the TRAI's recommendations 'Telecommunication Infra-structure Sharing, Spectrum Sharing, and Spectrum Leasing dated 24.04.2024'

Earlier, the Department of Telecommunications (DoT), through a reference dated 07.12.2021 under Section 11 (1) (a) of the TRAI Act, 1997, requested TRAI to provide recommendations on allowing sharing of core network elements such as MSC, HLR, IN etc., among telecom operators. Subsequently, DoT, through a reference dated 10.02.2022, mentioning its earlier reference dated 07.12.2021, informed that "to promote optimum resource utilization among the licensees, it is proposed to allow sharing of all kinds of telecom infrastructure and network elements among all categories of service providers licensed under the Section 4 of Indian Telegraph Act, 1885 for pro vision of authorized telecom services", and requested TRAI to provide recommendations on the subject.

Considering the request of stakeholders to permit inter-band spectrum sharing and leasing of spectrum in the country, the Authority decided to take up the issues related to spectrum sharing and spectrum leasing along with the issues related to infrastructure sharing in the stakeholders' consultation.
After a comprehensive consultation with stakeholders, TRAI sent its recommendations on 'Telecommunication Infrastructure Sharing, Spectrum Sharing, and Spectrum Leasing' to DoT on 24.04.2024.

Subsequently, DoT, through a back-reference dated 13.02.2025, informed TRAI that as per Section 11(1) of the TRAI Act 1997 (as amended), such recommendations on 'Telecommunication Infrastructure Sharing, Spectrum Sharing, and Spectrum Leasing' dated 24.04.2024, where the Government has reached a prima-facie conclusion that these recommendations may not be accepted or may need modification are being referred back to TRAI for its reconsideration.

In this regard, after examination, TRAI has sent its response to the back-reference to DoT which can be accessed from following link:

http://www.trai.gov.in/sites/default/files/2025

## TRAI response dated 18.03.2025 to the DoT's back-reference in respect of the TRAI's rec-ommendations on 'Definition of International Traffic dated 10.12.2024'

Earlier, the Department of Telecommunications (DoT), through a reference dated 30.08.2022, requested TRAI, under Section 11(1)(a) of the TRAI Act, 1997, to provide recommendations on the definition of International SMS and Domestic SMS. After a detailed consultation with stakeholders, TRAI provided its recommendations on 'Definition of International Traffic' dated 10.12.2024 to DoT.
Subsequently, DoT, through a back-reference dated 13.02.2025, informed TRAI that the recommendations of TRAI on Definition of International Traffic dated 10.12.2024 have been accepted in principle. DoT, however, sought clarification from TRAI in respect of International SMSs.
After examining the issue, TRAI has finalized its response to the back-reference which can be accessed from the following link:

http://www.trai.gov.in/sites/default/files/2025

## TRAI released recommendations on 'the issues Related to Critical Services in the M2M Sector, and Transfer of Ownership of M2M SIMs' dated 22.04.2025

Earlier, the Department of Telecommunications (DoT), through its letter dated 01.01.2024, had referred to the TRAI's recommendations dated 05.09.2017 on 'Spectrum, Roaming and QoS related requirements in Machine-to-Machine (M2M) Communications', and had requested TRAI to provide reconsidered recommendations, as per the provisions of Section 11 of the TRAI Act 1997 on the following issues:

a) Identification of Critical Services in the M2M Sector
b) Transfer of Ownership of M2M SIMS

In this regard, TRAI, on 24.06.2024, issued a consultation paper on 'the Issues Related to Critical Services in the M2M Sector, and Transfer of Ownership of M2M SIMs' for soliciting comments and counter comments from stakeholders. In response, TRAI received 16 comments and one counter-comment from stakeholders. An open house discussion on the consultation paper was held on 24. 10.2024 through virtual mode.

Based on the comments received from stakeholders and on its own analysis, TRAI has finalized its recommendations on 'the Issues Related to Critical Services in the M2M Sector, and Transfer of Ownership of M2M SIMs'. Machine to Machine (M2M) communication can enable applications and services across a broad range of vertical markets such as automotive, utilities, healthcare, safety & surveillance, financial, public safety, smart city and agriculture. At present, the M2M ecosystem is at an early stage of growth of its lifecycle. As the M2M ecosystem matures, and thereby gains user confidence, more and more services will be delivered to individuals, enterprises and public institutions by using Internet of Things (IoT). Many of such services would be critical IoT services, requiring ultra-reliable, low latency M2M connectivity with very high availability. As critical IoT will be used for delivering services of critical importance, the identification of services as critical IoT service requires to be done well in advance. The identification of a service as a critical IoT service would enable user agencies to enter into suitable service level agreements (SLAs) with telecom service providers. Through the SLAs, telecom service providers may be held accountable for ensuring that the M2M connectivity provided by them meets the requisite telecommunication service performance parameters (such as latency, reliability, and availability) which are sacrosanct for the successful operation of the concerned critical IoT service. Through these recommendations, TRAI has recommended a broad guiding framework for classifying a service as a 'critical IoT service'. TRAI has recommended that a service should be classified as a 'critical Iot service', if it passes the following twin tests:

a) Whether the service (application) demands ultra-reliable low-latency M2M connectivity with very high availability?

b) Whether any disruption of the M2M connectivity used for delivering the service (application) will have a debilitating impact on national security, economy, public health, or public safety?

TRAI has recommended that the classification of critical Iot services of a particular domain/ sector should be done by the ministry/ regulatory body concerned in consultation with Department of Telecommunications (DoT). TRAI has also recommended that for the classification of critical IoT services, DoT should devise an institutional mechanism for the assistance of concerned ministries! regulatory bodies. TRAI has recommended a technology-agnostic approach for the provision of critical IoT services. Specifically, TRAI has recommended that any wireless M2M communication technology (utilizing unlicensed spectrum, or licensed spectrum) or wired M2M communication technology should be permitted to be used for the provision of critical IoT services if it meets the prescribed service performance benchmarks.

Owing to the pervasive nature of the deployment of IoT devices in all walks of life, the importance of security and privacy requirements of Iot devices is paramount. The security and privacy concerns from IoT devices emanate essentially from the M2M communication modules embedded in them through which IoT devices get connected to telecommunication networks including public internet. With a view to allaying security and privacy concerns in respect of IoT devices, particularly those which are used in critical sectors, TRAI has recommended that the M2M communication modules embedded/ plugged in all IoT devices (which are capable of being connected to telecommunication networks) deployed in the critical sectors identified by National Critical Information Infrastructure Protection Centre (NCIIPC), Government of India should be notified under the framework of Mandatory Testing & Certification of Telecommunication Equipment (MTCTE) in a phased manner.

Through these recommendations, TRAI has recommended that the Department of Telecommunications (DoT) should establish a framework for the transfer of M2M Service Provider (M2MSP) registration/ authorisation to the resultant entity in case of merger, demerger, acquisition etc. of M2MSP entities. Further, TRAI has also recommended that DoT should introduce an enabling provision for the transfer of the ownership of M2M SIMs from one M2MSP registration holder/ authorised entity to another. A copy of the Recommendations can be accessed from the following link:

http://www.trai.gov.in/sites/default/files/2025

## TRAI released recommendations on 'Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services' dated 09.05.2025

Department of Telecommunications (DoT), through a reference dated 11.07.2024, stated that keeping in view the provisions of Section 4 and the First Schedule of the Telecommunications Act, 2023, in terms of Section 11(1)(a) of the TRAI Act 1997,TRAI is requested to provide recommendations on terms and conditions of spectrum assignment including spectrum pricing while accounting for level playing field with terrestrial access services for the following satellite-based communication services:

i. NGSO based Fixed Satellite Services providing data communication and Internet services. In its recommendations, TRAI may take into account services provided by GSO-based satellite communication service providers.

ii. GSO/NGSO based Mobile Satellite Services providing voice, text, data, and internet services.

In this regard, TRAI issued a consultation paper on 'Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services' on 27.09.2024 for seeking comments and counter comments from stakeholders on 21 issues raised in the consultation paper. Initially, the last dates for furnishing comments and counter comments were 18.10.2024 and 25.10.2024, respectively. However, considering the request of some of the stakeholders, the last dates for furnishing written comments and counter comments were extended to 25.10.2024 and 01.11.2024, respectively. In response to the issues raised in the consultation paper,30 stakeholders furnished comments, and 12 stake-holders furnished counter comments. As part of the consultation process, TRAI conducted an open house discussion (OHD) on the consultation paper through virtual mode on 08.11.2024. Based on the comments/count-er-comments received from stakeholders and on its own analysis, TRAI finalized the Recommendations on 'Terms and Conditions for the Assignment of Spectrum for Certain Satellite-Based Commercial Communication Services' and sent it to the Government on 09.05.2025. Salient points of the recommendations are given below:

a. For assigning frequency spectrum for user links and feeder links for NGSO-based FSS for data communication and Internet service, frequency spectrum in Ku band, Ka band, and Q/V band should be considered.

b. For assigning the frequency spectrum for GSO/NGSO-based MSS for providing voice, text, data communication and Internet service, the following frequency bands should be considered:

(i) L band and S band for user links; and
(ii) C band, Ku band, Ka band and Q/V band for feeder links

c. Frequency spectrum should be assigned for NGSO-based FSS and GSO/NGSO-based MSS for a period of up to five years. However, considering the market conditions, the Government may extend it for a further period of up to two years.

d. Terms and conditions including prices for the spectrum assignment for NGSO-based FSS and GSO/ NGSO-based MSS, recommended through these recommendations, should remain valid for a period of five years from the date of notification of the policy regime by the Central Government, further extendable by a period of upto two years.

e. Any revision in the terms and conditions including prices for the spectrum assignment for NGSO based FSS and GSO/NGSO based MSS, notified by the Central Government after a period of five years from the date of notification of the policy regime recommended through these recommendations, should become applicable to all authorised entities including the existing entities.

f. To control interference, the relevant provisions of ITU-RR should be made applicable to the authorised entities, and other entities which have been authorised by the Central Government.

g. The frequency spectrum identified by the Central Government for satellite-based telecommunication services in the higher frequency bands such as C, Ku, Ka, and Q/V bands that are assigned on a shared basis, should be assigned with a condition that each Authorised Entity and all other entities which have been authorized by the Central Government to use such shared frequency spectrum, will coordinate among themselves in good faith.

h. The Government, with the help of Telecom Engineering Center (TEC), should examine the need for prescribing a framework for sharing of spectrum. The framework may include conditions on the maximum equivalent power flux density (EPFD) etc. With a view to nudging the satellite operators to coordinate among themselves in good faith at the earliest, the Government may also consider introducing a provision for splitting of spectrum as a last resort in line with the provision created by FCC in its 'Spectrum Sharing Rules for No Geostationary Orbit, Fixed-Satellite Service Systems' in case two or more NGSO-based FSS satellite systems fail to complete coordination.

i. For establishment and operation of satellite earth station gateways, the authorised entities should be mandated to coordinate among themselves in good faith.

j. The DoT, with the help of TEC, should carry out a study to assess the requirement for prescribing coordination distance between two satellite earth station gateways (GSO-NGSO and NGSO-NSGO) operating on the same frequencies. If required, necessary guidelines may be issued.

k. In the frequency range(s) already identified for IMT such as 42.5-43.5 GHz, the satellite earth station gateways should be permitted to be established at uninhabited or remote locations on case-to-case basis, where there is a less likelihood of IMT services to come up.

l. With a view to mitigating the risk of scarcity of gateway sites, Satellite Earth Station Gateway(s) should be installed and commissioned within 12 months from the date of permission granted to the authorised entities by the Central Government for the establishment of the Satellite Earth Station Gateway(s).

m. The entities authorised to provide satellite-based telecommunication services should be permitted to surrender the right to use frequency spectrum assigned to them before the expiry of the validity period. For this purpose, broad terms and conditions have been recommended.

n. There should be a defined timeline, not exceeding 30 days from the date of application, within which the frequency spectrum should be assigned to an Authorised Entity for the provision of satellite-based communication services, provided that the in-principle clearance of satellite network has been given by the Central Government. In case of any objection, the same may be communicated to the concerned Authorised Entity within such window of 30 days from the date of application, for necessary action.

o. Spectrum charges should be levied as:

| | |
|---|---|
| **GSO-based FSS** | 4% of Adjusted Gross Revenue, subject to a minimum annual spectrum charge of Rs. 3,500 per MHz. |
| **NGSO-based FSS** | 4% of Adjusted Gross Revenue Plus an additional charge of Rs. 500 per subscriber per annum in urban areas, while exempting the rural and remote areas from this additional charge Subject to a minimum annual spectrum charge of Rs. 3,500 per MHz |
| **GSO/NGSO-based MSS** | 4% of Adjusted Gross Revenue, subject to a minimum annual spectrum charge of Rs. 3,500 per MHz |

p. Payment terms for spectrum charges:

(i) AGR-based spectrum charges should be paid on an advanced quarterly basis and payable within 15 days of the commencement of the respective quarter.

(ii) Minimum spectrum charges should be paid in advance at the time of assignment of spectrum and at the beginning of every year. The quarterly/annual adjustment of payment dues shall be made with the minimum spectrum charge for the particular year only.

(iii) Per subscriber charges should be paid by NGSO-based FSS service providers on a quarterly basis equal to 125xNu, where Nu refers to the total number of subscribers in urban areas at the end of the previous quarter.

q. The Government may consider providing a subsidy for NGSO based FSS user terminals to the targeted user segments in unserved/ underserved regions of rural and remote areas. A copy of the Recommendations can be accessed from the following link:

http://www.trai.gov.in/sites/default/files/2025

## TRAI responds to the DoT's back-reference in respect of the TRAI's recommendations dated 20.02.2023 on "Recommendations on Rating of Buildings or Areas for Digital Connectivity" dated 22.05.2025-

The Telecom Regulatory Authority of India (TRAI) issued on 22.05.2025, its response to the back-reference dated 19.03.2025 received from Department of Telecommunications (DoT) in respect of the TRAI's recommendations dated 20.02.2023 on "Recommendations on Rating of Buildings or Areas for Digital Connectivity".

Digital connectivity is vital to the way we live and work. The exponential growth in digitalization during the last two decades has revolutionized the world impacting everything, from economy, innovation, science, and education, to health, sustainability, governance, and lifestyle.

In the past, Telecom Regulatory Authority of India (TRAI) and the Government have taken various policy initiatives to fulfil the demands of telecom connectivity. Key recommendations already made by TRAI in this regard are given in Annexure II of the Consultation Paper (CP) on 'Rating of Buildings or Areas for Digital Connectivity' dated 25th March 2022. These policy interventions have helped in improving connectivity. However, the Authority noted that all these efforts have fallen short in achieving the desired level of digital connectivity specifically inside the buildings or areas.

The Authority noted that confluence of the Internet of Things (IOT) with building operations and the future of the workplace is creating a significant opportunity for building owners, operators, and occupants to create smart, digitally connected spaces to support the end users. To fulfil such demand, development of Digital Connectivity Infrastructure (DCI) should be made an integral part of basic infrastructure for Buildings. However, there are various issues in the current framework which are bottlenecks in achieving the demands of good digital connectivity. The Authority further noted that, in respect of development of Buildings, there are relevant Acts, bye-laws, and regulations that prescribe minimum or essential requirements for building services like water, electricity, gas, fire safety, structural safety and other provisions. There are local bodies and authorities who are responsible to enforce the same by granting approvals at various stages of the construction of the Buildings as well as supervision during the construction and approval for the use of such facilities. Model Building Bye- laws (MBBL).

In this context, the Authority had submitted comprehensive recommendations dated 20.02.2023 to the Government on 'Rating of Buildings or Areas for Digital Connectivity' to address the issues relating to in-building digital connectivity in a collaborative manner. These recommendations become more relevant in the present context and to achieve seamless 5G and upcoming 6G services inside buildings and to make them future ready. The 5G and upcoming 6G access networks require higher frequency to deliver high data rates, but higher frequency have higher attenuation rates due to building walls and other building materials.

Subsequently, the DoT, through a back-reference dated 19.03.2025, sought clarification from TRAI on certain recommendations in the "Recommendation on Rating of Buildings or Areas for Digital Connectivity" dated 20.02.2023.

After examining the issue, TRAI has finalized its response to the back-reference dated 19.03.2025 which can be accessed from the following link:

http://www.trai.gov.in/sites/default/files/2025

# Miscellaneous Activities

TRAI released an updated list of empanelled auditors on 9th April 2025 to carry out audit of Digital Addressable System (DAS), in which one new auditor namely M/s MHT & Co has been included for operation areas covered under TRAI Regional Office, Bangalore. Total number of empanelled auditors to carry out audit of DAS were 44 as on 30th April 2025. TRAI released an updated list of empanelled auditors on 19th May 2025 to carry out audit of Digital Addressable System (DAS), in which auditor M/s Komandoor & Co LLP has been granted extension of their empanelment. The total number of empanelled auditors to carry out audit of DAS were 44 as on 31st May 2025.

A study visit of the Authority and Senior Officers of TRAI to All India Radio, Pitampura, New Delhi organized on 11th June 2025 by B&CS Division during the month of June-2025. During the said study visit, the common transmission infrastructure facilities of private FM radio broadcasters and Prasar Bharati were seen.

## Telecom Service Providers published Mobile Network coverage maps on their websites as per the mandate given by TRAI:

TRAI released revised Regulations namely "The Standards of Quality of Service of Access (Wirelines and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024 (06 of 2024)' on 2nd August 2024. These regulations have become effective from 1st October 2024 and applicable for both access and broadband services provided on wireline as well as wireless media. The regulations mandates that "Every service provider providing access service (wireless) shall publish on its website the service wise geospatial coverage maps in such a manner and format, as may be directed by the Authority from time to time, for the geographical areas where wireless voice or wireless broadband service is available for subscription by consumers." As per the regulations, the publication of mobile network coverage map was to be completed by 1st April 2025. To ensure uniformity of coverage maps across the TSPs and their timely rollout, TRAI issued detailed technical guidelines for publication of mobile network coverage map vide Direction no RG + (- 17 / (3)) / 2022 -QoS dated 22nd November 2024. Copy of the same is available on TRAI website:

http://www.trai.gov.in/sites/default/files/2025

In compliance with the requirement of the QoS regulations, TSPs have now published mobile network coverage maps on their respective websites. Details of their links are as follows:

| S. No. | TSP | Links |
|---|---|---|
| 1. | Bharti Airtel | https://www.airtel.in/wirelesscoverage/?ic id=footer |
| 2. | BSNL | Yet to be published |
| 3. | RJIL | https://www.jio.com/selfcare/coverage-map/ |
| 4. | MTNL | Yet to be published |
| 5. | Vodafone Idea | https://www.myvi.in/vicoverage/ |

To enable easy user access, these links of mobile coverage maps have been consolidated on TRAI website. The coverage maps of different service providers can also be accessed on TRAI website using following path: TRAI Website (www.trai.gov.in) > Consumer Info > Mobile Coverage Map > [Service Provider].

The newly introduced coverage maps offer a variety of user-friendly features for easy accessibility and navigation with standard colour scheme. It also provides the option to see the coverage of specific technology like 2G, 3G, 4G or 9G offered by respective TSP in their area of interest. Users can use search options or enable location on their device to navigate to their current location. The toggle switch or technology selection button may be used to select coverage maps of technology of their interest i.e. 2G/3G/4G/5G etc.

## Independent Drive Tests: TRAI released report on Independent Drive Tests (IDT) conducted in six LSAs covering City/ Highways/ Railway routes/coastal areas of Andhra Pradesh LSA, Himachal Pradesh LSA, Kerala LSA, UP-West LSA, Gujarat LSA and Odisha LSA during Feb 2025

TRAI, through its appointed agency, conducted Independent Drive Tests (IDT) in cities/ highways/Railway/ Coastal area of Hyderabad (Andhra Pradesh LSA), City & Railway route of Shimla (Himachal Pradesh LSA), Alappuzha & Alappuzha Backwaters (Kerala LSA), Dehradun (UP-West LSA), Rajkot (Gujarat LSA), Highway route of Visakhapatnam to Brahmapur, Railway route from Brahmapur to Bhubaneswar and Coastal area of Paradeep (Odisha LSA). Drive tests were conducted to assess the quality of service provided by Cellular Mobile Telephone Service providers for voice and data services in February 2025.

## TRAI released report on Independent Drive Tests (IDT) conducted in eight LSAs covering City/ Highways/ Railway routes / coastal areas of Maharashtra LSA, UP East LSA, Mumbai & Maharashtra LSA, Haryana LSA,Tamil Nadu LSA, Jammu & Kashmir LSA and Madhya Pradesh LSA during March-2025.

TRAI, through its appointed agency, conducted Independent Drive Tests (IDT) in Cities/ Highways/ Railway/ Coastal area of Nagpur city (Maharashtra LSA), Prayagraj city and railway route from Prayagraj to Kanpur (UP East LSA), Mumbai city and highway route from Mumbai to Pune Expressway, Railway route from Mumbai Central to Vasai Road and coastal area from the Gateway of India to Elephanta Caves (Mumbai & Maharashtra LSA), Ambala city (Haryana LSA), Chennai city and highway route from Chennai to Coimbatore and railway routes from Vijayawada to Chennai and Coimbatore to Chennai (Tamil Nadu LSA), Srinagar city Jammu & Kashmir LSA) and Indore city (Madhya Pradesh LSA). Drive tests were conducted to assess the quality of service provided by Cellular Mobile Telephone Service providers for voice and data services in March -2025.

## TRAI releases findings from Independent Drive Tests (IDT) Report for April 2025. Nine Cities and Routes Assessed.

The Telecom Regulatory Authority of India (TRAI) released the results of Independent Drive Tests (IDTs) conducted in April 2025, covering nine cities and highway corridors in seven Licensed Service Areas (LSAs). The nine cities and highway corridors fall under Palakkad, Varanasi, Delhi (City & Highway), Cuttack, Jodhpur, Patna, Gangtok and Pakyong with surrounding districts. These assessments were part of TRAI's periodic Quality of Service (QoS) audits, aimed at evaluating real-time network performance. The tests were carried out using calibrated equipment and standardised protocols, under direct supervision of TRAI officials across diverse on-ground environments. The drive tests were undertaken through TRAI-appointed agency and evaluated both voice and data services across 2G, 3G, 4G, and 5G technologies. The scope included City Drive tests, Walk tests, Highway test and hotspot analysis. The networks of Bharti Airtel Limited, Reliance Jio Infocomm Limited, Vodafone Idea. Limited, and BSNL/MTNL were covered in auto-selection and locked mode as per the requirement of tests. The details are available at TRAI's website at link:

http://www.trai.gov.in/sites/default/files/2025

## TRAI released report on Operator Assisted Drive Tests (OADT) conducted at 22 locations and surrounding areasduring the quarter ending December 2024-

TRAI, with the assistance of the Telecom Service Providers, conducted Drive Tests at following cities, their surrounding areas and highways, namely:

Vijayapura, Chandrapur, Bhopal, Baripada, Warangal, Yamunanagar, Jagadhari, Kurukshetra, Kaithal, Hisar, Jodhpur, Jaisalmer, Junagadh, Diu, Saitual, Khawzawl, Champhai, West and South West Khasi Hills Districts, Faridabad, New Delhi, Sahibabad and Ghaziabad in the quarter ending December 2024.

## TRAI organised Workshop of Senior officers from States and Union Territories regarding "Regulation on Rating of Properties for Digital Connectivity"

The workshop was chaired by Shri Anil Kumar Lahoti, Chairman TRAI. The workshop received overwhelming response from States and UTs and was attended by over 125 participants, including senior officers from Housing & Urban development and IT department of States/Union Territories. TRAI regulations envisage star ratings of properties for quality of digital connectivity similar to Green Building Ratings of projects or Energy Efficiency Ratings of appliances. The digital connectivity ratings will be live process and cover review of digital connectivity rating during lifecycle of the project. TRAI has already started the process of empanelment or registration of Digital Connectivity Rating Agencies (DCRAs). The workshop provided details of initiatives taken by TRAI for improving in-building digital connectivity in the country and overview of the "Regulation on Rating of Properties for Digital Connectivity, 2024" issued by TRAI on 25th October 2024. The rating of buildings for digital connectivity will provide uniform standard reference for creating DCI in the country. With adoption of rating framework in the bylaws, the end user of residential and commercial properties will be able to make informed choices at the time of buying or leasing the properties. Further, the quality of experience in public buildings will also improve with the help of rating framework. Under the regulation, the consumer may also seek review of ratings in case of degradation of digital connectivity in the property. Likewise, property managers can seek review of ratings if they carry out significant improvements.

## Automation of process of submission of Performance Monitoring Report (PMR) of various services by telecom service providers "

The Standards of Quality of Service of Access (Wirelines and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024 (06 of 2024) Regulations which has become effective from 1st October 2024 and applicable for both access and broadband services provided on wireline as well as wireless media, mandates that every service provider shall create or upgrade their system within six months of notification of these regulations for collection of primary data, its storage, processing, performance report generation and their online submission to the Authority. Accordingly, the Authority, vide Direction dated 19.09.2024 and 03.01.2025, mandated the service providers to submit the performance monitoring report (PMR) of various services like access service (wireless), access service (wireline) and broadband (wireline) service within a period of fifteen (15) days from the end of the reporting period in the prescribed format.

In a major step towards automation of processes and ease of doing business for the service providers, the Authority has implemented digital and paperless process for submission of QoS performance monitoring report by the telecom service providers. PMR data submission for access service (wireless) has been automated through Application Programmable Interfaces (APIs) considering the large size of data whereas PMR for access service (wireline) and broadband (wireline) service are being submitted through a user-friendly interface provided on PMR portal. In a significant milestone, PMRs for the quarter ending March 2025 have been submitted through the automated route by all the telecom service providers. The automation of PMR submission helps to reduce human errors in the reports, simplifies the process, and minimizes the effort required by service providers.

## Automation of process of submission of Performance Monitoring Report (PMR) of various services by telecom service providers "

The Standards of Quality of Service of Access (Wirelines and Wireless) and Broadband (Wireline and Wireless) Service Regulations, 2024 (06 of 2024) Regulations which has become effective from 1st October 2024 and applicable for both access and broadband services provided on wireline as well as wireless media, mandates that every service provider shall create or upgrade their system within six months of notification of these regulations for collection of primary data, its storage, processing, performance report generation and their online submission to the Authority. Accordingly, the Authority, vide Direction dated 19.09.2024 and 03.01.2025, mandated the service providers to submit the performance monitoring report (PMR) of various services like access service (wireless), access service (wireline) and broadband (wireline) service within a period of fifteen (15) days from the end of the reporting period in the prescribed format. In a major step towards automation of processes and ease of doing business for the service providers, the Authority has implemented digital and paperless process for submission of QoS performance monitoring report by the telecom service providers. PMR data submission for access service (wireless) has been automated through Application Programmable Interfaces (APIs) considering the large size of data whereas PMR for access service (wireline) and broadband (wireline) service are being submitted through a user-friendly interface provided on PMR portal. In a significant milestone, PMRs for the quarter ending March 2025 have been submitted through the automated route by all the telecom service providers. The automation of PMR submission helps to reduce human errors in the reports, simplifies the process, and minimizes the effort required by service providers.

## TRAI released draft manual on rating of properties under "Rating of Properties for Digital Connectivity Regulations, 2024" for comments of stakeholders-

The Telecom Regulatory Authority of India (TRAI) has released the draft manual for assessment of rating of properties for digital connectivity under the "Rating of Properties for Digital Connectivity Regulations, 2024" on 13th May 2025.

The rating manual will enable adoption of uniform assessment methodology by the Digital Connectivity Rating Agencies (DCRAS) for rating of properties. It will also provide a standard reference for the Property Managers (PMs) for creation of Digital Connectivity Infrastructure (DCI) in their properties. The full text of the draft manual can be accessed from following link:

http://www.trai.gov.in/sites/default/files/2025

Digital connectivity is vital to the way we live and work. The exponential growth in digitalization during last decade has revolutionised the world impacting everything, from economy, innovation, science, and education, to health, sustainability, governance, and lifestyle. Digital technologies are fundamentally changing business models, institutions, and the society as a whole.

As per reports, maximum data consumption happens inside buildings and therefore in buildings digital connectivity has become crucial especially for 4G and 5G networks which uses high frequency bands for delivering high speed data rates, but they get attenuated due to walls and building materials.

In major step to address issues of digital connectivity inside buildings, the Authority has submitted recommendations to the Government on "Rating of Buildings or Areas for Digital Connectivity" on 20th February 2023. The recommendations are aimed to create an ecosystem for co-creations of Digital Connectivity Infrastructure (DCI) as a part of any development activity.

Further to above recommendations, TRAI has also released the regulation "Rating of Properties for Digital Connectivity Regulations, 2024" on 25th October 2024 to bring a framework for rating of properties for digital connectivity to promote creation of good digital connectivity through a collaborative and self-sustainable approach. A property with better ratings shall attract more users, buyers or investors thereby add value to properties.

The draft rating manual provides a methodology to assess the digital connectivity of properties and areas across various categories. Properties shall be evaluated based on defined parameters in the regulation such as fiber readiness, mobile network availability, in-building solutions and Wi-Fi infrastructure, service performance etc. The rating manual will serve as a structured framework designed to ensure a fair, transparent, and standardized approach to assessing digital connectivity under the provisions of the regulation. This document provides a comprehensive guide for all stakeholders involved in implementation and assessment of digital connectivity in properties and areas, including Digital Connectivity Rating Agency (DCRA), Property Manager (PM), and Service Providers.

A structured rating system enables prospective tenants and buyers to compare properties based on their connectivity rating, ensuring they choose locations with the best digital infrastructure.

The stakeholders have been invited to submit their comments and feedback on draft Manual, in the format provided in the Annexure-I, latest by 2nd June 2025 and counter comments by 9th June 2025. The format is also available at the last page of the draft manual which can be accessed from following link:

http://www.trai.gov.in/sites/default/files/2025

## Extension of last dates for submission of comments and counter comments from stakeholders on TRAI draft manual on rating of properties under "Rating of Properties for Digital Connectivity Regulations, 2024".

The Telecom Regulatory Authority of India (TRAI) had released the 'draft manual' for assessment of rating of properties for digital connectivity under the "Rating of Properties for Digital Connectivity Regulations, 2024" on 13th May 2025. The last date for submission of comments and counter- comments of stakeholders was earlier fixed as 2nd June 2025 and 9th June 2025 respectively. Keeping in view the requests received from stakeholders for extension of time for submission of comments on the above-mentioned 'draft' manual, it has been decided to extend the last dates for submission of comments by one week ie. up to 9th June 2025 and counter comments by 16th June 2025, to provide more time for stakeholders to respond. The same is available at TRAI's website at link:

http://www.trai.gov.in/sites/default/files/2025

## Direction regarding conduct of Pilot Project for acquisition of fresh digital consent through the Consent Registration Function (CRF) Framework with RBI-regulated Banks:

The Authority on dated 13.06.2025 has directed all Access Providers to run a Pilot Project (as part of a Regulatory Sandbox) to collect digital consent using a special framework, in partnership with RBI-regulated banks integrating end-to-end DLT systems for consent recording and revocation, coordinating with banks for system integration and public awareness, functioning as both Originating and Terminating Access Providers.

## Direction regarding updation of Location Routing Number (LRN) on the DLT platform during the port out window as per the TCCCPR, 2018

The Authority on dated 09.06.2025 directs all Access Providers to ensure that the Location Routing Number (LRN) of ported-out customers is updated in the DLT system within 24 hours by the Donor Access Provider, submit monthly non-compliance complaints to TRAI, provide a compliance report within 15 days detailing technical measures and implementation timelines, and maintain interoperability and synchronization of DLT platforms across providers for all relevant regulatory and technical data.

## Direction regarding compliance of Standard Operating Procedure for restoration of telecom resources disconnected under the TCCCPR, 2018

The Authority on 07.04.2025 directs all Access Providers to follow the specified Standard Operating Procedure (SoP) for restoring telecom resources of senders disconnected due to unsolicited communications, ensure effective Telemarketers & implementation to prevent repeat violations, inform all relevant stakeholders (Registered Senders), and submit an action status report within fifteen days, including any updates to their Codes of Practice.

## Meeting of Joint Committee of Regulators (JCoR)

Meeting of the Joint Committee of Regulators (JCOR) collaborative forum to address the issue of UCC & regulatory challenges in the digital era and enhance regulatory frameworks to control UCC through collective effort & to deliberate issues needing cross-sectoral regulatory collaboration and formulate collaborative measures including dealing with unsolicited commercial communication (UCC) spam and fraudulent communications. Members of the JCoR, including representatives from RBI, IRDAI, PFRDA, SEBI, MOCA, and MeiTY, participated in the meeting. Additionally, DoT and MHA representatives attended the meeting as special invitees. Important items deliberated in the meeting: implementation of 1600 series numbers for making transactional and service voice calls by the entities, onboarding of senders of commercial communication on Digital Consent Acquisition (DCA) platform, I4C discussed measures to counter fraudulent communication and the problem of Digital Arrest scams, issue of spam and scam through OTT and RCS communication platforms-MeiTY to take measure in this regard.

# Events

- Mr. Kumar Iyer, UK Ambassador-designate to the UN, WTO, and other international organizations in Geneva, called on Mr. Anil Kumar Lahoti, Chairman, TRAI, on 7th May 2025. They held discussions on a range of India–UK bilateral issues concerning telecom regulation.

*UK Ambassador-designate to UN meets Chairman, TRAI in Geneva*

- Mr. Anil Kumar Lahoti, Chairman, TRAI, met Mr. John-Eivind Velure, Director General, Norwegian Communication Authority, on the sidelines of IGF-2025 in Norway. The bilateral meeting focused on strengthening cooperation in telecom regulation and digital governance.


*Chairman, TRAI with Norwegian Communication Authority Chief, at IGF 2025*

- Mr. Anil Kumar Lahoti, Chairman, TRAI, participated in the closing session of IGF- 2025 and shared his views on digital cooperation and governance.


*Chairman, TRAI at IGF 2025, Geneva*

- TRAI delegation led by Dr. M.P. Tangirala, Member TRAI engaged at the Asia Pacific Digital Transformation Forum 2025 at ADB HQ. Discussions with Prof. Antonio Zaballos, ADB focused on inclusive digital growth in Asia-Pacific. A key step in regional policy collaboration.


*Member, TRAI at the Asia Pacific Digital Transformation Forum 2025, Manila*

- Shri Sameer Gupta, Advisor (NSL-I) attended the GSMA M360 Eurasia Conference at Tashkent, Uzbekistan, from 21st to 22nd May 2025, and delivered a keynote on the session ***"Scaling Smart: Eco-Efficiency Across Billions of Connected Devices"***.

- A two-member delegation from TRAI comprising the officers Shri Abhay Shanker Verma, Principal Advisor (B&CS) and Shri Akhil Saxena, Advisor (Legal) attended the Bilateral meeting with Hellenic Telecommunications and Postal Commission (EETT), Greec Regulator and visited Athena Research and Innovation Centre in Information, Communication and Knowledge Technologies, Athens from 26th & 27th May 2025.

# Consumer Outreach Programs

**TRAI conducted Special Consumer Outreach Programmes (SCOPs)/ Consumer Outreach Programme (COPs) for different sections of society as under:**


COP at Faridabad (Haryana) by TRAI Regional Office, Delhi on 29th April 2025

COP at Namchi (Sikkim) by TRAI Regional Office, Kolkata on 22 May 2025

COP at Mangalore (Karnataka) by TRAI Regional Office, Bengaluru on 15 May 2025

COP at Shimla (H.P.) by TRAI Regional Office, Delhi on 28 May 2025

COP at Panipat (Haryana) by TRAI Regional Office, Jaipur on 22 May 2025


COP at Rudrapur (U.K.) by TRAI Regional Office, Bhopal on 30 May 2025


COP at Gudur (A.P.) by TRAI Regional Office,
Hyderabad on 6 June 2025


COP at Narmadapuram (M.P.) by TRAI Regional Office,
Bhopal on 26 June 2025

COP at Mairang (Meghalaya) by TRAI Regional Office,
Kolkata on 19.06.2025


COP at Ahemdabad (Gujarat) by TRAI Regional Office,
Jaipur on 26 June 2025

# Telecom Subscriptions

**Telecom Subscription Data as on 30th April 2025**

| Particulars | Wireless | Wireline | Total |
|---|---|---|---|
| Urban Telephone subscribers (in Million) | 633.29 | 33.90 | 667.19 |
| Rural Telephone subscribers (in Million) | 533.14 | 3.51 | 536.65 |
| Total Telephone subscribers (in Million) | 1166.43 | 37.41 | 1203.84 |
| Overall Tele-density (%) | 82.54 | 2.65 | 85.19 |
| Share of Urban Subscription (%) | 54.29 | 90.61 | 55.42 |
| Share of Rural Subscription (%) | 45.71 | 9.39 | 44.58 |
| No. of Broadband Subscribers (in Million) | 901.67 | 41.41 | 943.09 |

In the month of April 2025, 13.48 million subscribers submitted their requests for Mobile Number Portability (MNP).

The number of active wireless (Mobile) subscribers (on the date of peak VLR#) in April 2025 was 1072.73 million.

# Telecom Subscriptions

**Telecom Subscription Data as on 31st May 2025**

| Particulars | Wireless | Wireline | Total |
|---|---|---|---|
| Urban Telephone subscribers (in Million) | 643.91 | 34.78 | 669.69 |
| Rural Telephone subscribers (in Million) | 533.51 | 3.88 | 537.39 |
| Total Telephone subscribers (in Million) | 1168.42 | 38.66 | 1207.08 |
| Overall Tele-density (%) | 82.63 | 2.73 | 85.36 |
| Share of Urban Subscription (%) | 54.34 | 89.97 | 55.48 |
| Share of Rural Subscription (%) | 45.66 | 10.03 | 44.52 |
| No. of Broadband Subscribers (in Million) | 930.77 | 44.09 | 974.87 |

In the month of May 2025, 14.03 million subscribers submitted their requests for mobile number portability (MNP).

The number of active wireless (mobile) subscribers (on the date of peak VLR$) in May 2025 was 1080.06 million.

# Telecom Subscriptions

**Telecom Subscription Data as on 30 June 2025**

| Particulars | Wireless | Wireline | Total |
|---|---|---|---|
| Urban Telephone subscribers (in Million) | 637.87 | 41.99 | 679.86 |
| Rural Telephone subscribers (in Million) | 533.00 | 5.50 | 538.50 |
| Total Telephone subscribers (in Million) | 1170.88 | 47.49 | 1218.36 |
| Overall Tele-density (%) | 82.74 | 3.36 | 86.09 |
| Share of Urban Subscription (%) | 54.48 | 88.42 | 55.80 |
| Share of Rural Subscription (%) | 45.52 | 11.58 | 44.20 |
| No. of Broadband Subscribers (in Million) | 935.02 | 44.69 | 979.71 |

In the month of June 2025, 13.58 million subscribers submitted their requests for Mobile Number Portability (MNP).

The Number of active wireless (Mobile) subscribers (on the date of peak VLR#) in June 2025 was 1082.67 million.

Full details of the Directions/Orders/Consultation Paper/Report, Subscription Data, etc. mentioned in this newsletter are available on

We are also on Twitter! Follow us!
TRAI@TRAI

TRAI's website
www.trai.gov.in

We are also on Facebook! Join us!
https://www.facebook.com/TRAI/

भादूविप्रा
TRAI

# भारतीय दूरसंचार विनियामक प्राधिकरण
# Telecom Regulatory Authority of India

4th to 7th Floor, Tower - F
World Trade Centre
Nauroji Nagar, New Delhi (India) - 110029