भारतीय दूरसंचार विनियामक प्राधिकरण
TELECOM REGULATORY AUTHORITY OF INDIA
भारत सरकार / Government of India

Recommendations on
"Rating of Buildings or Areas for Digital Connectivity"

(Response to the Back Reference dated 19.03.2025 received from Department of Telecommunications on the Recommendations dated 20.02.2023 of TRAI)

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Chapter I: Introduction and Background

A. Background

1.1 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. Digital technologies are fundamentally changing business models, institutions, and society.

1.2 The demand for digital connectivity has increased many folds in recent years. The crucial role of digital connectivity was very much acknowledged in the context of COVID-19, witnessing a surge in the demand across all segments of users, irrespective of their locations. With increasing reliance on digital connectivity, the importance of good digital connectivity has also gained a prime stage.

1.3 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)[1] 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. Some of these gaps are mentioned below:

a) The interest of infrastructure providers (IPs) in serving a building or premise depends upon the business opportunity it offers. Many times, it creates possibilities of monopolistic situations when exclusive rights are given to a particular IP to serve a building or an area.

[1] CP on Rating of Buildings or Areas for Digital Connectivity

b) Digital connectivity meeting the expectations of end users is not a one-time exercise. It requires regular expansion and upgradation of already laid out infrastructure to cater to increasing demand and requires frequent augmentation of network capacity. These emerging issues are to be dealt with during the entire life cycle, as every issue cannot be fully envisaged in the initial phase of creation of digital connectivity.

c) Adoption of evolution of new technologies and advancements in digital tools for cohesive creation of digital connectivity infrastructure.

1.4 TRAI has conducted studies to assess the quality of service and to identify challenges in connectivity and suggest ways forward. Based on these studies, a white paper on "Measurement of Wireless Data Speeds" and a report on "Mobile Network QoS: Delhi Airport and Dhaula Kuan" were published in February 2018 and March 2019 respectively.

1.5 Further, TRAI published a Monograph on "Quest for a Good Quality Network inside Multi-Storey Residential Apartments: Reimagining ways to improve quality" on 22nd September 2020. The outcome of these studies made it necessary to find a way forward to solve the emerging issues. Thus, TRAI undertook the process of consultation on a Suo-moto basis for deliberation on these issues.

1.6 The Authority noted that the 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. Business leaders are increasingly interested in creating a strategy for managing their Buildings that reflects the digital transformation taking place throughout their business. Those who do, may outpace their competitors in key areas such as employee attraction and retention, operating cost savings, and operational risk mitigation[2].

[2] Deloitte - Smart buildings and digital workplaces

1.7 The Authority noted that 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.

1.8 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 By laws (MBBL) published by the Town and Country Planning Organisation (TCPO) under Ministry of Housing and Urban Affairs (MoHUA) contains the provisions for all building services. States adopt the provisions of the MBBL in their respective State bye-laws for building development related activities.

1.9 In this context, the Authority submitted comprehensive recommendations dated 20.02.2023 to the Government on 'Rating Buildings or Areas for Digital Connectivity' to address the issues relating to in-building digital connectivity in 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.

B. Back Reference from DoT

1.10 DoT, through its letter dated 19.03.2025 (**Annexure-I**) on the subject "Back reference on TRAI recommendations dated 20.02.2023 on the 'Rating of

Buildings or Areas for Digital Connectivity' (hereinafter, also referred to as "the Back Reference"), has informed, inter-alia, as below:

> *"**2.** The recommendations of TRAI on "Rating of Buildings or Areas for Digital Connectivity " have been considered in the Government and the prima-facie conclusion in respect of each recommendation are given at Annexure.*
>
> ***3.** As per Section 11(1) of the TRAI Act, 1997 (as amended), such recommendations dated 20.02.2023 on 'Rating of Buildings or Areas for Digital Connectivity where the Government has reached a prima-facie conclusion that these recommendations may not be accepted or needs modification, are being referred back to TRAI for its reconsideration. TRAI is requested to provide its recommendations within 15 days of receipt of this back reference."*

1.11 In essence, through this back reference, DoT has informed that the Government has reached a *prima-facie* conclusion that most of the recommendations other than the referred back recommendations which are part of Recommendations dated 20.02.2023, have been accepted and the referred back recommendations may not be accepted or may need modification. DoT has requested TRAI to provide its reconsidered recommendations in respect of such recommendations.

C. Authority Response to the Back Reference

1.12 The Authority has carefully examined the views expressed by DoT in the Back Reference. Based on a conscientious analysis, the Authority has arrived at the response to the Back Reference. The response to the Back Reference comprises two chapters. This chapter provides an introduction and background to the subject. Chapter II provides the response of the Authority to the DoT's views in respect of the recommendations on which the Government has reached a prima-facie conclusion that such recommendations may not be accepted or may need modification.

Chapter II: Response to the Back Reference

This chapter provides the response of the Authority to the views expressed by DoT in the Back Reference in respect of the recommendations on which the Government has reached a prima-facie conclusion that such recommendations, as summarized in Chapter 5 of the Recommendations, may not be accepted or may need modification. All the recommendations (No. 5, 6, 7, 8, 9, 10, 16, 18, 26, 27, 29, 31 and 32) that the government has marked 'May be accepted' have been omitted from the response. Remaining recommendations have been presented sequentially, and descriptions thereon have been organized in the following manner:

a) First, the text of the recommendation or definition has been reproduced, in respect of which, the Government has reached a prima-facie conclusion that it may not be accepted or may need modification.

b) Then, the views expressed by DoT, in the Back Reference in respect of such recommendation, have been reproduced.

c) Thereafter, the response of the Authority based on its analysis of the matter has been provided.

1. Use of word 'Digital' and definition of Digital Connectivity Infrastructure (DCI)

1.1 Digital Connectivity Infrastructure (DCI) has been defined in the recommendations as***: "****Digital Connectivity Infrastructure (DCI) consists of passive and active elements which include any apparatus, appliance, instrument, equipment, and system used or capable of extending seamless digital connectivity. All infrastructure required for establishing Wireless or Wireline Access Networks such as Radio Access Networks (RAN) and Wi-Fi systems, and Transmission Links Interface, Duct Space, Optical Fiber, Poles, Towers, Feeder cable, Antenna, Base Station, In-Building Solutions (IBS), Distributed Antenna System (DAS), or any other equipment to be used for the provision of digital connectivity, may be part of DCI. However, it shall not include core network elements."*

[Para 2.2.6(1)(b)]

1.2 DoT view on the use of word 'Digital' and definition of DCI

1.2.1 *The Government noted that the word 'Digital' is used in TRAI Recommendations on "Rating of Buildings or Areas for Digital Connectivity" dated 20.02.2023 to define the Digital Connectivity Infrastructure. However, the word 'Digital' is not defined in the Indian Telegraph Act 1885 and the Telecommunications Act, 2023. Further, the term 'telecommunication' has been defined in the Telecommunication Act, 2023, as published in the Gazette of India. Hence, the word 'Telecommunication' may be used instead of 'Digital' i.e. 'Digital Connectivity Infrastructure (DCI)' may be renamed as 'Telecommunication Infrastructure (TI)'.*

1.2.2 *The Government is of the view that the definition of the DCI needs to be reconsidered in the backdrop of the extant legal, licensing and regulatory framework as it discusses about both i.e. active and passive elements. It also needs to be reconsidered in view of the mandatory provisioning of DCI in the buildings.*

1.2.3 *Accordingly, the infrastructure items and telecommunication equipment/ systems forming part of the definition of DCI (Digital Connectivity Infrastructure), as recommended by TRAI, henceforth, be referred to as Telecommunications Infrastructure (TI), could be divided into three sub-parts for buildings to be digital ready:*

1.2.3.1 *Enabling infrastructure i.e. Entrance Facilities (EF)/ Lead-in conduits, underground conduits/pipes to FDF/ MDF room, Fibre Distribution Frame (FF)/ Main Distribution Frame (MDF)/ Equipment Room (ER), Telecommunication Room (TR), duct space, feeder cable, wired transmission links (but not wireless), optical fiber, OLTs, etc., which need to be provisioned during and after construction of the building but before grant of occupancy cum completion certificate, for provisioning of the telecommunication services inside the building. This enabling*

infrastructure, henceforth, be referred to as Enabling Telecommunication Infrastructure (ET).

1.2.3.2 *Indoor network for mobile communication i.e. installation of equipment for IBS/ DAS including active/ passive antennas, cross connects, waveguides, fiber distribution for active IBS, etc., which needs to be provisioned for indoor mobile coverage, henceforth, be referred to as IBS for Indoor Mobile Coverage.*

1.2.3.3 *Telecommunication Equipment (e.g. Base Stations (BTS) along with its other related equipment) for providing feed to IBS/ DAS, henceforth, be referred to as Telecommunication Equipment (TE).*

1.2.3.4 *For making buildings ready for wireline triple play services, provisioning of 'Enabling Telecommunication Infrastructure (ET)' during and after construction of the building but before grant of occupancy cum completion certificate, may be made mandatory.*

Further, equipment like CPEs may be installed on user side based on the demand. However, provisioning of 'IBS for Indoor Mobile Coverage' and 'Telecommunication Equipment (TE)' may not be mandated as builder/ developer/ Property Manager are not authorized to install 'IBS for Indoor Mobile Coverage' and 'Telecommunication Equipment (TE)' as per extant licensing and regulatory frameworks. 'IBS for Indoor Mobile Coverage' can be installed, maintained and operated by DCIP (proposed) and licensed TSPs while Telecommunication Equipment (TE)' can be installed, maintained and operated by licensed TSPs only.

1.3 Response of TRAI w.r.t. the DoT's views on the use of word 'Digital' and definition of DCI

1.3.1 Relevant definitions in various Acts and laws related to telecommunication are stated below:

1.3.1.1 The *Indian Telegraph Act, 1885*[3] defines "telegraph" as *"any appliance, instrument, material or apparatus used or capable of use for transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature by wire, visual or other electro-magnetic emissions, Radio waves or Hertzian waves, galvanic, electric or magnetic means."*

1.3.1.2 Section 2(k) of the TRAI Act, 1997 [4] , defines telecommunication service as "*service of any description (including electronic mail, voice mail, data services, audiotex services, videotex services, radio paging and cellular mobile telephone services) which is made available to users by means of any transmission or reception of signs, signals, writing, images and sounds or intelligence of any nature, by wire, radio, visual or other electro-magnetic means but shall not include broadcasting services.*
Provided that the Central Government may notify other service to be telecommunication service including broadcasting services."

1.3.1.3 Section 4 of Indian Telegraph Act 1885 states that "*Within [India], the Central Government shall have exclusive privilege of establishing, maintaining and working telegraphs: Provided that the Central Government may grant a licence, on such conditions and in consideration of such payments as it thinks fit, to any person to establish, maintain or work a telegraph within any part of [India]*".

[3] THE INDIAN TELEGRAPH ACT, 1885
[4] Telecom Regulatory Authority of India Act, 1997

1.3.1.4 Section 2 of The Telecommunications Act, 20236 defines telecommunication network and telecommunication service as under.

"**(s)** "telecommunication network" means a system or series of systems of telecommunication equipment or infrastructure, including terrestrial or satellite networks or submarine networks, or a combination of such networks, used or intended to be used for providing telecommunication services, but does not include such telecommunication equipment as notified by the Central Government;

(t)"telecommunication service" means any service for telecommunication;"

1.3.2 Relevant provisions in Unified Licence[5]:

1.3.2.1 **Clause 2.2 (i) of Licence Agreement for Unified Licence (UL):** *"The Licensee may establish, operate, and maintain Telecommunication Networks and telecommunication services using* ***any technology*** *as per prescribed standards in the service area as per scope of services authorised under this License".*

1.3.2.2 **UL condition 2.2 (v) of Chapter I- General Conditions***: 'It is obligatory upon the Licensee to provide the services by establishing a* ***state-of-the-art digital network'****.*

1.3.2.3 **Clause 5.2 under 'Technical Conditions' in Chapter-XIII-Public Mobile Radio Trunking Service***: 'The Company shall specify the details of technology (****Digital/ Analogue****), Quality of Service and other Performance Parameters of the Systems proposed to be deployed for operation of the service.'*

1.3.2.4 **'Definition of Terms and expressions' in Annexure-I of UL at serial number 71 defines National Long Distance Service: '71**. *NATIONAL LONG DISTANCE SERVICE PROVIDER is the telecom service*

[5] Licence agreement for Unified Licence

*provider providing the required **digital** capacity to carry long-distance telecommunication service within the scope of License for National Long-Distance Service, which may include various types of tele-services defined by the ITU, such as voice, data, fax, text, video and multi-media etc.'*

1.3.3 The Authority noted both Acts do not define any technology as technology continue to evolve on ongoing basis. The definition of term 'telegraph' under *Indian Telegraph Act, 1885 and the word 'telecommunication network' and 'telecommunication service' under* 'The Telecommunications Act, 2023' are agnostic to the underlying telecommunication network technologies like analog or digital or even upcoming 'quantum' technology.

1.3.4 Authority also noted that the present Unified License, under *Indian Telegraph Act, 1885,* already uses the word 'Digital' in the context of telecommunication network in multiple sections of UL as summarized in para 1.3.2.

1.3.5 It is pertinent to note that telecommunication network technologies have evolved over a period. In the initial days, telegraph or telecommunication systems used analog or continuous electrical signals to transmit information or voice. However, the present-day telecommunication networks are largely digital by design to support different digital services riding on telecom network. In summary, telecommunication networks are providing digital highways for different digital services across the spectrum of sectors and society.

1.3.6 The Authority, at para 1.1 of Appendix-I to Chapter IV, also highlighted that *'The technologies used for **digital communications** have also changed greatly over the past few years. Telecommunication network architecture is also changing to meet new requirements for a number of new technologies and services/applications viz. 5G, massive Internet of things, Artificial Intelligence, Augmented/Virtual Reality, Metaverse, etc. Information Communication Technology (ICT) systems which were earlier confined to telecommunication services are now converging wherein the thin line differentiating*

telecommunications and other services is blurring very rapidly. All these services are now converging into digital services which encompass telecommunications, broadcasting and various other associated services using data as carrier. Data growth is exploding globally and in India as per TRAI reports, the average monthly data usage per user in India has increased almost 17 times over the past 7 years. Home consumption of data has therefore grown exponentially. According to some estimates, almost 85% of data traffic and 70% voice of traffic are now generated indoors.'

1.3.7 The Authority further notes that the '**National Digital Communications Policy (NDCP) – 2018**[6]' aptly captures the need for the use of term 'Digital Communication' in the para 11 of the preamble which is reproduced below:

"11. *Keeping in view the changes and advancements in the digital communications ecosystem, the National Telecom Policy will hereinafter be referred to as 'National Digital Communications Policy. To ensure effective implementation and monitoring of the Policy, it is proposed to re-designate the Telecom Commission as the Digital Communications Commission, to ensure that the high aspirations are achieved within stipulated time.*"

1.3.8 The Authority further noted that in the Telecommunications Act 2023, a separate Chapter-V (Digital Bharat Nidhi) has been introduced in place of Universal Service Obligation Fund created under the Indian Telegraph Act, 1885.

1.3.9 The Authority further notes that Town and Country Planning Organisation, Ministry of Housing and Urban Affairs circulated draft addendum to MBBL-2016 in May 2021 titled "Provision for In-Building Solutions for **Telecom** Infrastructure". However, while issuing final addendum in March 2022 its title was modified to "Provision for In-Building Solutions **Digital** Communication Infrastructure".

[6] NDCP 2018

In view of the aforesaid the Authority is of the considered view that the use of the word 'Digital' is more appropriate for the digital connectivity infrastructure.

1.3.10 The Authority further notes that DoT is of the view that "*The definition of the DCI needs to be reconsidered in the backdrop of the extant legal, licensing and regulatory framework as it discusses about both i.e. active and passive elements. It also needs to be reconsidered in view of the mandatory provisioning of DCI in the buildings*."

1.3.11 While examining the issues related to in-building digital connectivity in the recommendations and finalizing the definition of Digital Connectivity Infrastructure (DCI), the Authority took note of the following aspects:

a) TRAI submitted recommendations on "In-building Access by Telecom Service Providers" dated 20th January 2017. Some of these recommendations have been implemented through 'Addendum to MBBL issued in March 2022 by MoHUA'. However, the recommendations in respect of inclusion of disallowing exclusive tie-up by TSP/ IP-Is in license/ registration conditions, time-bound approval process for accessing the CTI deployed and terms and conditions on sharing are not yet implemented by the Government. Further, the recommendation regarding inclusion of CTI as an essential requirement and associated standards as part of NBC, is not addressed so far. [Para 2.5.5 (a) to (c)].

b) The Authority, in [Para 2.5.5 (e) to (g)], observed that "*the end users of DCI need to be empowered to decide kind of DCI needed in their premises. The building plans are also to be aligned to meet end users' requirements. Accordingly, the Property Manager, who is responsible for the development of a property is the most suitable person to own DCI.*" and provided reasons for the above conclusion.

1.3.12 Considering the aforesaid and other issues related to digital connectivity inside buildings and areas, the Authority arrived at the definition of Digital Connectivity Infrastructure (DCI) as under*:*

"Digital Connectivity Infrastructure (DCI) consists of passive and active elements which include any apparatus, appliance, instrument, equipment, and system used or capable of extending seamless digital connectivity. All infrastructure required for establishing Wireless or Wireline Access Networks such as Radio Access Networks (RAN) and Wi-Fi systems, and Transmission Links Interface, Duct Space, Optical Fiber, Poles, Towers, Feeder cable, Antenna, Base Station, In-Building Solutions (IBS), Distributed Antenna System (DAS), or any other equipment to be used for the provision of digital connectivity, may be part of DCI. However, it shall not include core network elements."

[Para 2.2.6(1)(b)]

1.3.13 To enable the ownership of DCI by the Property Manager and considering stakeholders' inputs, the Authority recommended that "*the Property Manager shall be the owner of the deployed DCI whether created by himself or through his agent and shall be responsible for maintenance, expansion and upgradation of such DCI. The Property Manager shall allow access of DCI to all service providers in fair, non-chargeable, transparent and non-discriminatory manner and shall not have any exclusive arrangements or agreements with any infrastructure/ service provider.*

*Provided that in case active wireless equipment is installed by a licensee, the licensee will be responsible for maintenance, expansion and upgradation of such DCI and to that extent, the ownership lies with that licensee. However, this installation of active wireless equipment will be carried out on behalf of the Property Manager and Property Manager shall be responsible for ensuring that the licensee compulsorily gives access of such active wireless equipment to all service providers on fair, transparent, non-discriminatory, and non-exclusive manner***.**" [Recommendation (14), para 2.5.6]

1.3.14 To facilitate the property manager in ownership of DCI within the extant legal, licensing and regulatory framework, the Authority also examined the need for special class of Infrastructure Providers for Property Manager at [Para 2.5.5(i)]:

> "*As per **Indian Telegraph Rules 1951** (Rule 472), "Any person may without a licence establish, maintain and work a telegraph (not being a wireless telegraph) within the limits of a single building, compound or estate: Provided that no telegraph line pertaining to the telegraph shall pass over or under a public road".* Accordingly, till the time Property Manager creates DCI within the framework of the above rule, there is no requirement to introduce a special class of infrastructure providers for them. However, if Property Manager intends to deploy active wireless equipment, licence as specified by DoT is required to be taken. Further, if Property Manager uses services of a licensee to **deploy active wireless equipment**, to that extent, the licensee shall be the owner of such active equipment. However, responsibility for providing access to such DCI including active wireless equipment deployed by a licensee, shall lie with the Property Manager."

1.3.15 Upon coherent reading of para 1.3.11. 1.3.12 and 1.3.13 above, it is evident that the DCI which includes active and passive elements, is to be set up by the Property Manager within extant legal, licensing and regulatory framework. As per the recommendations, the property manager has two options to deploy the DCI:

> **a) Property Manager wants to deploy active wireless equipment of DCI on their own**: In this case, the property manager has to seek relevant authorization or license as prescribed by DoT. Therefore, the active wireless elements shall be setup within the applicable legal, regulatory and licensing framework.
>
> **b) Property Manager wants to use services of a licensee to deploy active wireless equipment of DCI:** In this scenario also, the

active wireless elements shall be setup within the applicable legal, regulatory and licensing framework.

However, in both cases, the onus for providing access of such DCI including active wireless equipment deployed by a licensee, shall lie with the Property Manager.

1.3.16 To further simplify the legal, licensing and regulatory framework towards collaboration between service providers and the property managers and creation of in-building digital connectivity infrastructure, the Authority has examined the issue of indoor mobile connectivity more holistically under para **G. 'In-building Solution (IBS)**' in its recommendation dated 17th February 2025 titled *"**Recommendations on the Terms and Conditions of Network Authorisations to be Granted Under the Telecommunications Act, 2023**"*.

a) In this recommendation, the Authority, at para 2.81, has noted that "*IBS is essentially a system of telecommunication equipment which is used for providing telecommunication services, and therefore, it constitutes 'telecommunication network' in the scheme of the Telecommunications Act, 2023. Therefore, in terms of Section 3(1)(b) of the Telecommunications Act, 2023, any person intending to establish, operate, maintain or expand IBS would require to obtain an authorisation from the Central Government unless, in terms of Section 3(3) of the Telecommunications Act, 2023, it is exempted from the requirement for obtaining such an authorisation from the Central Government. In this context, the Authority examined the framework for the establishment of IBS in other countries.*" The summary of analysis is available from para 2.82 to 2.88 of the recommendation.

b) Based on the analysis as provided in Section-G on IBS, and considering the fact that many countries have kept the deployment of DAS inside buildings outside the purview of stringent regulations, the Authority is of the view that the establishment, maintenance and

expansion of IBS by property managers may be exempted from the requirement of obtaining authorisation from the Central Government in the public interest.

c) To address any issue related to public safety, the Authority has also recommended that the critical components of IBS should be Mandatory Testing and Certification of Telecommunication Equipment (MTCTE) certified by Telecom Engineering Centre (TEC), DoT.

d) **Accordingly, the Authority has given following Recommendation-4.6: "***The Authority recommends that:*

a. *The following telecommunication equipment should be included within the ambit of in-building solution (IBS):*

i. ***Distributed antenna system (DAS****) comprising of antennas, radio frequency (RF) couplers, RF splitters, RF combiners, RF repeaters and RF feeder cables and other accessories for setting up DAS*

ii. ***Telecommunication cables*** *such as coaxial cable, optical fiber cable (OFC) and ethernet cables*

iii. ***Optical fiber equipment*** *comprising of Master Optical Units (MOU), Remote Optical Units (ROU), Fiber Distribution Units, Optical Line Terminals (OLT), Optical Networking Units (ONU), and Fiber Access Terminals (FAT)*

b. *The property manager should be permitted to establish, operate, maintain, and expand in-building solution (IBS) within the limits of a single building, compound, or estate, managed by it. For this purpose, there should be no requirement of obtaining any authorisation from the Central Government under Section 3(1)(b) of the Telecommunications Act, 2023. Here, the term "property manager" means the person who is either the owner of*

the property or has any legal right to control or manage the property.

c. *A property manager should provide access to the IBS established by it in its property to the eligible service authorised entities and DCIP authorised entities in fair and non-discriminatory manner.*

d. *Telecom Engineering Centre (TEC), Department of Telecommunications, should issue guidelines for design, installation, maintenance and operation of IBS equipment.*

e. *Telecom Engineering Centre (TEC), Department of Telecommunications, should identify critical components of IBS and bring such components under Mandatory Testing and Certification of Telecommunication Equipment (MTCTE) regime.*

f. *Once the Central Government introduces the regime of MTCTE certification, any IBS equipment established by the property managers should be mandatorily MTCTE certified from TEC.*

g. *A condition must be imposed on all relevant service authorised entities and DCIP authorised entities prohibiting them to enter into any exclusive contract for right of way with property managers.*"

e) The above recommendations are also aligned with the objective of one of the 'Mission' of NDCP-2018 i.e. "**Connect India**: *Creating Robust Digital Communications Infrastructure- To promote Broadband for All as a tool for socio-economic development,* ***while ensuring service quality*** *and environmental sustainability*." as it aims to facilitate improvement in service quality inside buildings where maximum data consumption and service utilization takes place.

1.3.17 The Authority is of the view that these recommendations may be considered in holistic perspective to address the issues being faced or likely to be faced by the service providers, property managers and the consumers in accessing the latest 5G and upcoming 6G technology inside buildings. The

access network for these technologies uses high frequency bands for delivering faster broadband with low latency. The alignment of overall legal, regulatory and licensing framework, as recommended by the Authority through its recommendations dated 20.02.2023 on 'Rating Buildings or Areas for Digital Connectivity' and for network authorization framework dated 17th February 2025, will facilitate creation of future ready digital connectivity infrastructure in-side buildings which addresses the digital connectivity issues faced by the consumers.

1.3.18 In view of aforesaid and considering the recommendation of the Authority dated 17th February 2025 on "Recommendations on the Terms and Conditions of Network Authorisations to be granted under the Telecommunications Act, 2023", the definition of Digital Connectivity Infrastructure may be read as under:

"Digital Connectivity Infrastructure (DCI) consists of apparatus, appliance, instrument, equipment, and system capable of extending seamless digital connectivity inside buildings or areas. DCI shall include all infrastructure required for establishing Wireless or Wireline Access Networks inside buildings or areas except those which require license under Indian Telegraph Act, 1885 or authorization under Telecommunications Act, 2023 like core network or Radio Access Networks (RAN)."

2. Recommendation No. 1

The Authority recommends that Model Building Bye-Laws (MBBL) and National Building Code of India (NBC) should be amended to incorporate necessary provisions on Digital Connectivity Infrastructure (DCI) as recommended herein.

(Para 2.2.7)

DoT's Views on the Recommendation No. 1

May be accepted with amended definition of the DCI. Recommendations be forwarded to MoHUA.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 1

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above. Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above and reproduced below:

"Digital Connectivity Infrastructure (DCI) consists of apparatus, appliance, instrument, equipment, and system capable of extending seamless digital connectivity inside buildings or areas. DCI shall include all infrastructure required for establishing Wireless or Wireline Access Networks inside buildings or areas except those which require license under Indian Telegraph Act, 1885 or authorization under Telecommunications Act, 2023 like core network or Radio Access Networks (RAN)."

3. Recommendation No. 2

The Authority also recommends that, DCI should be made an essential component of the building development plans on the line of water supply, electrical services, gas supply, fire protection and fire safety requirements, etc.

(Para 2.2.7)

DoT's Views on the Recommendation No. 2

May be accepted with amended definition of the DCI. Recommendations be forwarded to MoHUA.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 2

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above. Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above.

4. Recommendation No. 3

In case of development of Buildings in rural, semi-urban, remote and hilly areas, etc. where MBBL is not directly applicable, the Authority recommends that the Government may work with State Governments/ UTs for incorporation of suitable

provisions for DCI development in the respective bye-laws or other relevant laws of the State Governments/ UTs.

(Para 2.2.7)

DoT's Views on the Recommendation No. 3

May be forwarded to MoHUA and Ministry of Rural Development for their consideration.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 3

May be forwarded to MoHUA and Ministry of Rural Development after acceptance by DoT.

5. Recommendation No. 4

As RERA act protects the interests of the consumers of the real estate sector and provides platform for speedy disposal of their disputes, the Authority recommends that provisions for mandating DCI inside the Buildings, its maintenance, timely upgradation, etc. should be incorporated in the builder-buyer agreement for covering it under the jurisdiction of RERA act and its enforceability by the RERA.

(Para 2.2.7)

DoT's Views on the Recommendation No. 4

May be forwarded to MoHUA for their consideration**.**

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 4

May be forwarded to MoHUA after acceptance by DoT.

6. Recommendation No. 11

On standards for products and procedures for DCI, the Authority recommends that:

a) the BIS should prescribe and update standard templates which will be used by Property Managers for collecting building-related information and connectivity requirements of users. In case of non-availability of data from the users, the Property Manager shall use the data available for similar Buildings. Data collected through such templates shall be used by the DCI Designers.

b) the standards and procedures framed, and templates prescribed for DCI by BIS should be made part of the National Building Code (NBC).

c) TEC should continue to work as the equipment standardization and certification agency for standard products and equipment required for DCI.

d) TEC should prescribe necessary specifications in respect of new products required for upgradation of DCI.

e) TEC should also ensure that the certified products for DCI are shareable and interoperable.

f) TEC should enlist and publish such DCI products and equipment which require certification.

(Para 2.4.8)

DoT's Views on the Recommendation No. 11

(a) and (b) may be forwarded to BIS for their consideration.

(c) to (f) – May be accepted

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 11

(a) and (b) may be forwarded to BIS after acceptance by DoT.

7. Recommendation No. 12

The Authority recommends that BIS should prescribe different standards for different classes of Buildings for DCI.

(Para 2.4.8)

DoT's Views on the Recommendation No. 12

May be partially accepted keeping in view the amended definition of DCI.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 12

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above. The modified definition of DCI includes apparatus, appliance, instrument, equipment, and system capable of extending seamless digital connectivity inside buildings or areas. The requirement of different components of DCI varies for different classes of Buildings depending upon their usage i.e. residential/ commercial/ educational/ industrial/ business etc. and end user requirements. The DCI

needs of a residential Building would be different from that of a commercial or office Building. Accordingly, there is requirement of prescribing different set of standards for different categories of the Buildings.

Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above.

8. Recommendation No. 13

Further, the Authority recommends that BIS should also prescribe such provisions of DCI that would be mandatorily required (essential requirements) to be completed for issuance of completion/occupancy certificate for Buildings.

(Para 2.4.8)

DoT's Views on the Recommendation No. 13

May be partially accepted in view of the amended definition of DCI.
Recommendations be sent to BIS.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 13

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above. Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above.

9. Recommendation No. 14

a) The Authority recommends that the Property Manager shall be the owner of the deployed DCI whether created by himself or through his agent and shall be responsible for maintenance, expansion and upgradation of such DCI. The Property Manager shall allow access of DCI to all service providers in fair, non-chargeable, transparent and non-discriminatory manner and shall not have any exclusive arrangements or agreements with any infrastructure/ service provider.

b) Provided that in case active wireless equipment is installed by a licensee, the licensee will be responsible for maintenance, expansion and upgradation of such DCI and to that extent, the ownership lies with that

licensee. However, this installation of active wireless equipment will be carried out on behalf of the Property Manager and Property Manager shall be responsible for ensuring that the licensee compulsorily gives access of such active wireless equipment to all service providers on fair, transparent, non-discriminatory, and nonexclusive manner.

(Para 2.5.6)

DoT's Views on Recommendation No. 14

a) May be accepted with the amended definition of DCI.

b) May not be accepted keeping in view the amended definition of DCI and the extant licensing framework.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 14

The Authority has discussed, in detail, the need and the context of definition of DCI at para 1 of this response. The ownership of DCI by the property manager is an important requirement for creation and management of digital infrastructure in the properties to provide good quality digital connectivity. However, considering the view of DoT on definition of DCI i.e. "*2. The Government is of the view that the definition of the DCI needs to be reconsidered in the backdrop of the extant legal, licensing and regulatory framework as it discusses about both i.e. active and passive elements. It also needs to be reconsidered in view of the mandatory provisioning of DCI in the buildings.",* the recommendation 14 may be read as under:

"The Authority recommends that the Property Manager shall be the owner of the deployed DCI whether created by himself or through his agent and shall be responsible for maintenance, expansion and upgradation of such DCI. The Property Manager shall allow access of DCI to all service providers in fair, non-chargeable, transparent and non-discriminatory manner and shall not have any exclusive arrangements or agreements with any infrastructure/service provider."

(Para 2.5.6)

10. Recommendation No. 15

Further, the Authority recommends that, an amendment to the present Unified license conditions with a proviso for compulsory sharing of active wireless equipment in the buildings may be carried out.

(Para 2.5.6)

DoT's Views on the Recommendation No. 15

May not be accepted keeping in view the amended definition of DCI and the TRAI recommendations on 'Introduction of Digital Connectivity Infrastructure Provider (DCIP) Authorization under Unified License (UL)'.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 15

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above. Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above.

11. Recommendation No. 17

For existing Buildings where DCI is partly created, the Authority recommends a collaborative approach among stakeholders to decide ownership i.e., Property Manager for development, upgradation and expansion of DCI. However, in cases where DCI is developed by a service provider/ IP-I(s), till no suitable arrangement is worked out to transfer the DCI to the Property Manager, such service providers/ IPIs shall be governed by the mandatory provisions of the license/ registration conditions.

(Para 2.5.6)

DoT's Views on the Recommendation No. 17

May not be accepted in view of amended definition of DCI.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 17

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above. Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above.

12. Recommendation No. 19

The Authority recommends that in case of introduction of new spectrum bands, change in technologies, increased users' demands etc.,

a) DoT should take up with BIS and MoHUA for incorporation of amendments in National Building Code and Model Building Bye-Laws, respectively.

b) BIS should also prescribe essential provisions that would be required to be carried out by Property Manager for upgradation and expansion of DCI.

(Para 2.6.6)

DoT's Views on the Recommendation No. 19

May not be accepted in view of the amended definition of DCI.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 19

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above.

Further, expansion or upgradation of the deployed DCI is a regular exercise to take care of challenges posed by increased user demand or introduction of new technologies. Upgradation may also be required to cater new spectrum bands if introduced by Government or service providers to enhance capacity and coverage requirements, etc. Therefore, the standards need to be reviewed on regular basis and if required, new standards should also be included as per the availability of technology and need of the end users. Further, BIS may need to incorporate the aspects of upgradation and expansion of DCI while framing standards and procedures.

Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above.

13. Recommendation No. 20

The Authority recommends that the MBBL should have appropriate provisions for the approval of upgradation and expansion of DCI.

(Para 2.6.6)

DoT's Views on the Recommendation No. 20

May not be accepted in view of the amended definition of DCI.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 20

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above. Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above.

14. Recommendation No. 21

The Authority further recommends that the Property Manager should ensure upgradation and expansion of DCI in the timeline as will be prescribed in the MBBL.

(Para 2.6.6)

DoT's Views on the Recommendation No. 21

May not be accepted in view of the amended definition of DCI.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 21

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above.

Further, as already mentioned at para 2.6.5(i) of the recommendations, many of the existing Buildings may have very high footfalls and therefore, it is required to include some mandatory provisions in building bye-laws to upgrade the existing telecom infrastructure in Buildings not covered earlier, within a reasonable time frame. This will enable users of such Buildings to access of good digital connectivity based on new technologies, similar to those who are part of development of DCI in new Buildings.

Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above.

15. Recommendation No. 22

The Authority recommends that, in all existing Buildings owned by the Government, PSUs or autonomous bodies of the Government, commercial buildings and public places such as airports, ports, railway stations, bus stations, metro stations or any other Building as may be decided by MoHUA in consultation with DoT, DCI shall be upgraded or provided to meet the requirements of state-of-the-art digital connectivity. In such cases, the Authority also recommends that the building bye-laws should prescribe a reasonable time frame so as to ensure availability and accessibility of upgraded DCI.

(Para 2.6.6)

DoT's Views on the Recommendation No. 22

May be forwarded to MoHUA keeping in view the amended definition of DCI

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 22

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above. Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above and may be forwarded to MoHUA after acceptance by DoT.

16. Recommendation No. 23

The Authority further recommends that for existing Buildings other than those mentioned in recommendation No. 22, the new building bye-laws should be issued by MoHUA within three years after due consultation with the various stakeholders. Till then, it is recommended that, the Property Managers of such existing Buildings shall implement the new bye-laws voluntarily.

(Para 2.6.6)

DoT's Views on the Recommendation No. 23

May be forwarded to MoHUA keeping in view the amended definition of DCI

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 23

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above. Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above and may be forwarded to MoHUA after acceptance by DoT.

17. Recommendation No. 24 and 25

Recommendation No. 24: The Authority recommends that, the Indian Telegraph Act, 1885 should be amended as follows:

a) The Central Government may prescribe through rules for formation of Council of Digital Connectivity Infrastructure (CoDCI).

b) The rules may specify the manner of certification of persons to design, deploy and evaluate DCI.

c) Such rules may specify the qualification of and terms and conditions subject to which, such certification may be granted, including through conduct of examinations for granting such certifications, the fees and charges to be paid thereof, and other connected matters.

(Para 2.7.6)

Recommendation No. 25: The Authority recommends that a Council of DCI (CoDCI) should be established under the Department of Telecommunications (DoT), Ministry of Communication in collaboration with the Ministry of Housing and Urban Affairs (MoHUA), All India Council for Technical Education (AICTE), National Skill Development Council (NSDC), Telecom Sector Skill Council (TSSC), and Construction Skill Development Council (CSDC) or any other organisation/institution as deemed appropriate. The CoDCI shall be responsible for taking all decisions in respect of certification, registration and capacity building of DCI Professionals.

(Para 2.7.6)

DoT's Views on the Recommendation No. 24 and 25

Recommendations No. 24 and 25 may not be accepted.

TRAI recommended for the formation of Council of DCI (CoDCI). The broad roles and responsibilities of CoDCI as recommended by TRAI (in recommendation no. 26) mostly cover the matters related to TI Professionals such as qualification, capacity building, certification, evaluation etc.

Meanwhile, a separate inter-ministerial Committee for "Suggesting procedure, norms & methodology for issuance of IBS-NOC by TERM Cell/LSA during Plan approval & completion and preparation of norms for the same" was constituted. The committee had members from MoHUA, BIS, TEC, NCA-T, Office of DG (T) and DoT HQ. After detailed deliberations, this inter-ministerial committee has recommended that the NCA-T (National Communications Academy-Technology) may be the nodal organization for all matters related to TI Professionals. Further, the Committee has also recommended that functions of TI Designer and TI Evaluator may performed by the professionals having minimum qualification as graduate engineer/ graduate architect and having completed the certification courses as applicable.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 24 and 25

Noted. The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above.

18. Recommendation No. 28

The Authority further recommends that till the time CoDCI is established, the provisions in new building bye-laws for DCI as recommended herein must be implemented by utilizing the services of the existing professionals already working in the field of design and development of Buildings and DCI.

(Para 2.7.6)

DoT's Views on the Recommendation No. 28

May not be accepted.

Reasons: Same as recommendation No. 24 & 25.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 28

The para 2.7.5 (e) of the recommendations has dealt with the need for an alternative mechanism to support the Property Managers and other stakeholders to utilize services of the existing professionals already designing and implementing such plans, till the time a mechanism is developed by the CoDCI. The relevant para is reproduced below:

"(e) Since, development of the courses and accreditation of the institutions for running the courses and conducting examinations will take a certain amount of time, the council should work out an alternative mechanism to support the Property Managers and other stakeholders to utilize services of the existing professionals already designing and implementing such plans."

The Authority noted that the above aspects have not been dealt with under DoT's view on recommendation no- 24 and 25. The Authority is of the view that utilization of the services of the existing professionals, already working in the field of design and development of Buildings and DCI, is essential for creation of DCI in the intervening period till the time the mechanism proposed by DoT under recommendations 24 to 27 is implemented. Hence, the Authority reiterates its recommendation.

19. Recommendation No. 30

The Authority further recommends that, till the time CoDCI is established, the digital platform should be created by DoT to meet immediate objectives, which can later be handed over to the CoDCI.

(Para 2.8.6)

DoT's Views on the Recommendation No. 30

May not be accepted.

Reasons: Same as recommendation No. 24 & 25.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 30

The Authority noted that the provision of the recommendation has not been dealt with under DoT's view on recommendation No. 24 and 25. Hence, the Authority reiterates its recommendation.

20. Recommendation No. 33

The Authority recommends that the BIS Panel on 'Information and Communication Enabled Installations' should develop standards in respect of DCI for the Buildings, to be included in the National Building Code as mentioned in Appendix-II to this chapter. The Authority further recommends that definitions, related to DCI, as mentioned in para 6.1 of Appendix-I, should be made part of the NBC.

(Para 4.7)

DoT's Views on the Recommendation No. 33

May be forwarded to BIS with the amended definition of DCI.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 33

The matter related to proposed amendment to the definition of DCI by the DoT has been dealt with at para 1 above. Hence, the Authority reiterates its recommendation duly incorporating modified definition of DCI as provided at para 1.3.18 above and may be forwarded to BIS after acceptance by DoT.

21. Recommendation No. 34

The Authority recommends that appropriate provisions for Rating of Buildings for Digital Connectivity should be included in the MBBL, on the lines of the provisions made in the MBBL for rating of green buildings.

(Para 3.2.6)

DoT's Views on the Recommendation No. 34

May be forwarded to MoHUA for their consideration**.**

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 34

May be forwarded to MoHUA after acceptance by DoT.

22. Recommendation No. 35 & 36

Vide Recommendation No. 35 and 36, the Authority has recommended the following:

Recommendation No. 35

The Authority recommends that to start with, the Rating of Buildings for digital connectivity should be made mandatory for all existing as well as new Buildings of public importance within two years of issue of the regulatory framework by TRAI or two years from obtaining occupancy certificate, whichever is later. The Authority further recommends that Rating of the following Buildings of public importance should be made mandatory:

a) Airports,
b) Ports,
c) Railway/ metro stations,
d) Bus stations,
e) Buildings of Central/ State/ UT Governments/ Local authorities/ Government agencies/ PSUs,
f) Government residential colonies,
g) Industrial estates including industrial parks, SEZs, multimodal logistic parks,
h) Large commercial office complexes,
i) Large commercial shopping complexes,
j) All institutes of higher education including research institutes,
k) All multi-speciality hospitals, and
l) Any other Buildings as Government may decide.

Recommendation No. 36

The Authority also recommends that, the Rating of Buildings for digital connectivity should be made mandatory for all new Buildings, excluding the class

of Buildings as may be decided by MoHUA in consultation with the States/ UTs and other stakeholders.

(Para 3.4.6)

DoT's Views on the Recommendation No. 35 and 36

May not be accepted

Rating of building may be kept voluntary

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 35 and 36

a) **The Authority, in para 3.4.5(a), has deliberated upon the need for mandatory ratings while finalizing the recommendation 35 and 36 summarized in Chapter 5. The same is reproduced below** "*As discussed above, there are certain Buildings with high public footfalls such as airports, ports, railway stations, public transport stations, bus stations, large shopping complexes, industrial estates, major market areas, office or workplaces, Government Buildings, Government residential colonies and multi-storeyed complexes (residential or office complexes) etc. In such cases it is essential to have certain framework to ensure good quality digital connectivity experience to the consumers or end users of various services. In many cases end users may be a transit passenger or short time visitor, who might not be owning a permanent space in that area but during the period of his/her stay he/she needs to have good quality digital connectivity experience so as to ensure that his/ her connectivity related requirements are fulfilled without any hassle. Thus, such Buildings are required to have a mandatory rating scheme. In case of such Buildings, Rating should be made mandatory within two years of issue of the regulatory framework by TRAI or two years from obtaining occupancy certificate, whichever is later. The Property Manager should also get Buildings rated for digital connectivity within two years of obtaining the occupancy certificate once TRAI has issued the regulatory framework. Further, it is also important to identify other classes of Buildings where rating can be introduced as mandatory in the collective interest of end-users. The Governments and their agencies should be leader in Rating of Buildings, as, maximum footfalls of the citizens are observed in the Government Buildings.*

Also, Government has digitalised their functions, delivery of services and even transfer of benefits. With new technologies, especially 5G based technologies is likely to revolutionise the way Government transacts, delivers services and interacts with citizens. It is therefore essential that all Government buildings should also have good quality of digital connectivity which not only meets current requirements but also is capable of extending new experiences using new technologies evolved later."

b) **The Authority noted that DoT is of the view that these recommendations may not be accepted, and Rating of building may be kept voluntary.**

c) **However, the Authority is of considered view that combination of mandate and incentives are necessary for the offtake of rating of properties framework. These recommendations aim to trigger the collaborative approach for creation of digitally connected public places, Government buildings, large commercial complexes and other built environment in the country. These places have high public footfalls and thus affect accessibility and digital connectivity experience of public at large. The accessibility of digital connectivity is becoming equally important for public safety and security.**

d) **Adoption of mandatory rating for the Government buildings, in the spirit of Government as a model infrastructure creator, will work as good precedence for private property development in the country. Once the digital connectivity ratings of Government buildings are made available in public domain, the consumers will start demanding ratings for properties developed by private property developers. Thus, the mandatory rating of Govt. buildings may act as a catalyst to improve digital connectivity inside the buildings in the country.**

e) **The Authority also noted that it may not be practical to enforce the mandatory ratings for the properties developed by the State Govt. or**

private developers. Therefore, in respect of projects/properties of State Govt. or private developers, it may be left to the State Govt. to decide whether to make the rating of buildings voluntary or mandatory for different category of buildings through their respective building byelaws.

f) However, in context of the discussion in preceding paras, the Authority is of the view that rating of buildings should be made mandatory for all Central Govt. projects/properties and for Central Govt. funded projects (either partially or fully) even if executed by the State Govt. or in Public Private Partnership (PPP) model.

g) The Authority also noted that the Recommendation 35 provides that'*....Rating of Buildings for digital connectivity should be made mandatory for all existing as well as new Buildings of public importance within two years of issue of the regulatory framework by TRAI or two years from obtaining occupancy certificate, whichever is later....'*. **However, TRAI has already notified the regulation "Rating of Properties for Digital Connectivity Regulations, 2024" on 25th October 2024. These regulations allow the property manager to apply for the ratings even at the stage of construction of the property. Therefore, the time frame for rating of new buildings may be reduced from two years to one year from the date of issue of occupancy certificate.**

In view of aforesaid, the Authority has decided to revisit these recommendations. The revised recommendations No. 35 and 36 are given below.

<u>Revised Recommendation No. 35</u>

The Authority recommends that to start with, the Rating of Buildings for digital connectivity should be made mandatory for all existing Central Govt. Buildings of public importance within two years of issue of the policy guidelines by the Government or within one year of obtaining occupancy certificate for all new Central Govt. Buildings or Buildings constructed under

Central Govt. funding (full or partial). The Authority further recommends that Rating of the following Central Govt. Buildings of public importance or such Buildings constructed under Central Govt. funding (full or partial) should be made mandatory:

a) Airports,
b) Ports,
c) Railway/ metro stations,
d) Bus stations,
e) Buildings of Central Governments/ Government agencies/ PSUs,
f) Government residential colonies,
g) Industrial estates including industrial parks, SEZs, multimodal logistic parks,
h) Large commercial office complexes,
i) Large commercial shopping complexes,
j) Institutes of higher education including research institutes,
k) Multi-speciality hospitals, and
l) Any other Buildings as Government may decide.

Revised Recommendation No. 36

The Authority also recommends that in respect of buildings of State Govts. or Private developers, the respective State Govt. may decide whether to make rating mandatory or keep it voluntary. The Authority further recommends that the State Govts. may consider making Rating of Buildings for digital connectivity mandatory for the categories of Buildings as may be suggested by MoHUA.

23. Recommendation No. 37 and 38

Recommendation 37: The Authority recommends that the Property Manager should get Buildings rated for digital connectivity within two years of obtaining the occupancy certificate once TRAI has issued the regulatory framework.

Recommendation 38: The Authority also recommends that for Buildings other than those mandated, the Property Manager may get their Buildings rated for digital connectivity on voluntary basis.

(Para 3.4.6)

DoT's Views on the Recommendation No. 37 and 38

The State Govt. may decide whether to make the rating of building, voluntary or mandatory for different categories of buildings. This needs to be communicated appropriately to the States through amendment in the Model Building By-Laws (MBBL).

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 37 and 38

In view of the response of TRAI w.r.t. the DoT's Views on recommendation No. 35 and 36, recommendations 37 may be read as below: -

Revised recommendation 37: **The Authority recommends that in respect of the categories of buildings notified to be mandatory for rating, the Property Manager should get Buildings rated for digital connectivity within one year of obtaining the occupancy certificate.**

The Recommendation 38 already provides for voluntary choice for rating and hence is reiterated. It may be forwarded to MoHUA after acceptance by DoT.

24. Recommendation No. 39

The Authority recommends that, a new draft chapter on DCI for the Buildings, as suggested in the Appendix-I to this chapter, should be included in the Model Building Bye Laws, in line with the recommendation No. 7 at para 2.4.8.

(Para 4.7)

DoT's Views on the Recommendation No. 39

Same as at recommendations number 7.

Recommendations be forwarded to MoHUA.

Response of TRAI w.r.t. the DoT's Views on the Recommendation No. 39

May be forwarded to MoHUA after acceptance by DoT.

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Annexures

Annexure-I

F. No. 20-1341/2023 AS-1
Government of India
Ministry of Communications
Department of Telecommunications
(Licensing Policy Wing)
20-Ashoka Road, New Delhi-110001

Dated: 19.03.2025

Subject: Back Reference on TRAI recommendations dated 20.02.2023 on 'Rating of Buildings or Areas for Digital Connectivity'

This is in reference to the TRAI recommendations dated 20.02.2023 on 'Rating of Buildings or Areas for Digital Connectivity '.

2. The recommendations of TRAI on **"Rating of Buildings or Areas for Digital Connectivity "** have been considered in the Government and the prima-facie conclusion in respect of each recommendation are given at **Annexure-A.**

3. As per Section 11(1) of the TRAI Act, 1997 (as amended), such recommendations dated 20.02.2023 on 'Rating of Buildings or Areas for Digital Connectivity ', where the Government has reached a prima-facie conclusion that these recommendations may not be accepted or needs modification, are being referred back to TRAI for its reconsideration. TRAI is requested to provide its recommendations within 15 days of receipt of this back reference.

4. This has the approval of the competent authority.

Encl.: As Above

19/3/25

(Sunil Kumar Singhal)
Deputy Director General (Licensing Policy)
Phone: 23036836

To,

The Secretary
Telecom Regulatory Authority of India
7th Floor, Tower-F,
World Trade Centre, Nauroji Nagar,
New Delhi: 110029

Annexure-A

View of the Government on recommendations of TRAI on "Rating of Building or Areas for Digital Connectivity" dated 20.02.2023

1. The Government noted that the word 'Digital' is used in TRAI Recommendations on "Rating of Buildings or Areas for Digital Connectivity" dated 20.02.2023 to define the Digital Connectivity Infrastructure. However, the word 'Digital' is not defined in the Indian Telegraph Act 1885, and the Telecommunications Act, 2023. Further, the term 'telecommunication' has been defined in the Telecommunication Act, 2023, as published in the Gazette of India. Hence, the word "Telecommunication' may be used instead of 'Digital', i.e. 'Digital Connectivity Infrastructure (DCI)' may be renamed as 'Telecommunication Infrastructure (TI)'.

2. The Government is of the view that the definition of the DCI needs to be reconsidered in the backdrop of the extant legal, licensing and regulatory framework as it discusses about both i.e. active and passive elements. It also needs to be reconsidered in view of the mandatory provisioning of DCI in the buildings.

3. Accordingly, the infrastructure items and telecommunication equipment/ systems forming part of the definition of DCI (Digital Connectivity Infrastructure), as recommended by TRAI, henceforth, be referred to as Telecommunication Infrastructure (TI), could be divided into three sub-parts for buildings to be digital ready:
    - 3.1 Enabling infrastructure i.e. Entrance Facilities (EF)/ Lead-in conduits, underground conduits/pipes to FDF/ MDF room, Fibre Distribution Frame (FF)/ Main Distribution Frame (MDF)/ Equipment Room (ER), Telecommunication Room (TR), duct space, feeder cable, wired transmission links (but not wireless), optical fiber, OLTs, etc., which need to be provisioned during and after construction!-of the building but before grant of occupancy cum completion certificate, for provisioning of the telecommunication services inside the building. This enabling infrastructure, henceforth, be referred to as Enabling Telecommunication Infrastructure (ETI).
    - 3.2 Indoor network for mobile communication i.e. installation of equipment for IBS/DAS including active/passive antennas, cross connects, waveguides, fiber distribution for active IBS, etc., which needs to be provisioned for indoor mobile coverage, henceforth, be referred to as IBS for Indoor Mobile Coverage.
    - 3.3 Telecommunication Equipment (e.g. Base Stations (BTS) along with its other related equipment) for providing feed to IBS/ DAS, henceforth, be referred to as Telecommunication Equipment (TE).
    - 3.4 For making buildings ready for wireline triple play services, provisioning of 'Enabling Telecommunication Infrastructure (ETI)' during and after construction of the building but before grant of occupancy cum completion certificate, may be made mandatory.

Further, equipment like CPEs may be installed on user side based on the demand. However, provisioning of 'IBS for Indoor Mobile Coverage' and 'Telecommunication Equipment (TE)' may not be mandated as builder/ developer/ Property Manager are not authorized to install 'IBS for Indoor Mobile Coverage' and 'Telecommunication Equipment (TE)' as per extant licensing and regulatory framework. 'IBS for Indoor Mobile Coverage' can be installed, maintained and operated by DCIP (proposed) and licensed TSPs while Telecommunication Equipment (TE)' can be installed, maintained and operated by licensed TSPs only.

4. Detailed view of the Government in respect of each recommendation are summarized in the table attached in **Annexure-I.**

Annexure-I

Detailed view of the Government in respect of each recommendation of TRAI on "Rating of Building or Areas for Digital Connectivity" dated 20.02.2023

Rec. No.	Summary of Recommendations	Government's view
1	The Authority recommends that Model Building Bye-Laws (MBBL) and National Building Code of India (NBC) should be amended to incorporate necessary provisions on Digital Connectivity Infrastructure (DCI) as recommended herein.	May be accepted with amended definition of the DCI. Recommendations be forwarded to MoHUA.
2	The Authority also recommends that, DCI should be made an essential component of the building development plans, on the line of water supply, electrical services, gas supply, fire protection and fire safety requirements, etc.	May be accepted with amended definition of the DCI. Recommendations be forwarded to MoHUA.
3	In case of development of Buildings in rural, semi-urban, remote and hilly areas, etc. where MBBL is not directly applicable, the Authority recommends that the Government may work with State Governments/ UTs for incorporation of suitable provisions for DCI development in the respective bye-laws or other relevant laws of the State Governments/ UTs.	May be forwarded to MoHUA and Ministry of Rural Development for their consideration.
4	As RERA act protects the interests of the consumers of the real estate sector and provides platform for speedy disposal of their disputes, the Authority recommends that provisions for mandating DCI inside the Buildings, its maintenance, timely upgradation, etc. should be incorporated in the builder-buyer agreement for covering it under the jurisdiction of RERA act and its enforceability by the RERA.	May be forwarded to MoHUA for their consideration.
5	The Authority recommends that the actors to design, deploy and evaluate the DCI should include the Property Manager and DCI Professionals i.e., DCI Designer, DCI Engineer and DCI Evaluator, where: a) The Property Manager is the person or body who is responsible to oversee and manage the development, operation and maintenance of a Building and has the authority either as owner(s) of the Building or as an agent of the owner(s). The term "Property Manager" would include an owner or a developer or a builder of a real estate project(s) or an area(s) responsible to plan, design and build facilities like Multi-storey residential buildings, Commercial buildings or complexes, etc. b) DCI Designer is a professional who has the competence and possesses prescribed qualifications to design DCI for Buildings. c) DCI Engineer is a professional who has the competence and possesses prescribed qualifications to implement the DCI designed for Buildings. DCI Evaluator is a professional who has the competence and possesses prescribed qualifications to measure and evaluate the quality of the DCI deployed inside Buildings.	May be Accepted.
6	The Authority further recommends that any person who possesses the requisite skills, as may be prescribed, can perform the functions as DCI Designer or DCI Engineer or DCI Evaluator.	May be accepted
7	The Authority recommends that a separate chapter should be included in MBBL on comprehensive framework for development of DCI.	An addendum to MBBL 2016, on DCI has already been issued in March 2022. The same may be amended by MoHUA as per the decisions on these recommendations.

8	The Authority recommends that the Bureau of Indian Standards (BIS) should be tasked to review existing standards and procedures of DCI for Buildings.	May be accepted. Recommendations be sent to BIS.
9	The Authority recommends that the "National Building Code Sectional Committee" constituted under NBC, also referred as Guiding Committee should include members from the Department of Telecommunication and Telecom Industry.	May be accepted. Recommendations be sent to BIS.
10	The Authority further recommends that the Panel on 'Information and Communication Enabled Installations' under NBC (Volume II, Part 8, Section 6) should be expanded to include representatives from Telecommunication Engineering Centre (TEC) and Telecommunications Standards Development Society India (TSDSI) and, experts on telecom RF planning and experts on digital modelling of Buildings. The convener of this panel should be the representative nominated by DoT.	May be accepted. Recommendations be sent to BIS.
11	On standards for products and procedures for DCI, the Authority recommends that, a)the BIS should prescribe and update standard templates which will be used by Property Managers for collecting building-related information and connectivity requirements of users. In case of non-availability of data from the users, the Property Manager shall use the data available for similar Buildings. Data collected through such templates shall be used by the DCI Designers. b) the standards and procedures framed, and templates prescribed for DCI by BIS should be made part of the National Building Code(NBC).	(a) and (b) may be forwarded to BIS for their consideration. (c) to (f) –May be accepted
	c)TEC should continue to work as the equipment standardization and certification agency for standard products and equipment required for DCI. d) TEC should prescribe necessary specifications in respect of new products required for upgradation of DCI. e)TEC should also ensure that the certified products for DCI are shareable and interoperable. f) TEC should enlist and publish such DCI products and equipment which require certification.	
12	The Authority recommends that BIS should prescribe different standards for different classes of Buildings for DCI.	May be partially accepted keeping in view the amended definition of DCI.
13	Further, the Authority recommends that BIS should also prescribe such provisions of DCI that would be mandatorily required (essential requirements) to be completed for issuance of completion/occupancy certificate for Buildings.	May be partially accepted in view of the amended definition of DCI. Recommendations be sent to BIS.
14	(i) The Authority recommends that the Property Manager shall be the owner of the deployed DCI whether created by himself or through his agent and shall be responsible for maintenance, expansion and upgradation of such DCI. The Property Manager shall allow access of DCI to all service providers in fair, non-chargeable, transparent and non-discriminatory manner and shall not have any exclusive arrangements or agreements with any infrastructure/service provider. (ii) Provided that in case active wireless equipment is installed by a licensee, the licensee will be responsible for maintenance, expansion and upgradation of such DCI and to that extent, the ownership lies with that licensee. However, this installation of active wireless equipment will be carried out on behalf of the Property Manager and	14(i) May be accepted with the amended definition of DCI. May not be accepted keeping in view the amended definition of DCI and the extant licensing framework

	Property Manager shall be responsible for ensuring that the licensee compulsorily gives access of such active wireless equipment to all service providers on fair, transparent, non-discriminatory, and nonexclusive manner.	
15	Further, the Authority recommends that, an amendment to the present Unified license conditions with a proviso for compulsory sharing of active wireless equipment in the Buildings may be carried out.	May not be accepted keeping in view the amended definition of DCI and the TRAI recommendations on 'Introduction of Digital Connectivity Infrastructure Provider (DCIP) Authorization under Unified License (UL)'.
16	The Authority recommends that the revenues earned by sharing of active wireless equipment, as part of DCI, by lessor licensees should not attract License Fee (LF). For the same, such revenues should be reduced from the Gross Revenues (GR) of the lessor licensee to arrive at Applicable Gross Revenue (ApGR) of such lessor licensee. To implement above recommendation, it is further recommended that, a new item named as "Revenue earned from other licensees from sharing of active wireless equipment, as part of DCI" should be inserted under the license provisions namely "List of other items to be excluded from GR to arrive at ApGR". It is also recommended that, appropriate modification may be carried out in UL, UL(VNO) and ISP licenses. Also, the information collected in "Format of Statement of Revenue and License Fee" that is attached with each authorization chapter in UL, UL(VNO) and with ISP licenses needs to be modified to capture information from such revenues under a separate head.	May not be accepted in view of the comments at 15 above: Further, it may be noted that only revenue from Non telecom activities and items of other income are excluded from GR to Arrive at ApGR. Revenue from permissible sharing of infrastructure is an activity allowed under the scope of the license and it is a telecom activity. Further a separate revenue item "Revenue from Sharing/Leasing of Infrastructure" is already available in UL Access, ISP, NLD, ILD, GMPCS authorizations already. Hence the TRAI recommendations for exclusion of "Revenue earned from other licensed TSPs from sharing/leasing of infrastructure" from GR to arrive at ApGR would go against the existing principle of excluding only income from non telecom activities and other income to arrive at ApGR. Definition of Gross Revenue in the License agreement does not allow for setting off any expenses. Charges paid for sharing of infrastructure service is an expenditure related to effective network operation. Costs linked to effective network functioning are taken into account while fixing tariffs by operator. These charges are paid on a fixed monthly/yearly

		basis and are not incidental to the carriage of calls on per call basis like interconnection usage charges/roaming charges. Allowing set off of expenses of one kind may trigger demands for allowing other expenses to be given the same treatment in future.
17	For existing Buildings where DCI is partly created, the Authority recommends a collaborative approach among stakeholders to decide ownership i.e., Property Manager for development, upgradation and expansion of DCI. However, in cases where DCI is developed by a service provider/ IP-I(s), till no suitable arrangement is worked out to transfer the DCI to the Property Manager, such service providers/ IPIs shall be governed by the mandatory provisions of the license/ registration conditions.	May not be accepted in view of amended definition of DCI
18	The Authority reiterates its recommendation in para 2.90 of its recommendations dated 29th November 2022 on "Use of Street Furniture for Small Cell and Aerial Fibre Deployment" wherein it was recommended that "enabling provisions or suitable terms and conditions shall be introduced in all telecom licenses and IP-I registration agreement prohibiting the TSPs/IP-I providers from entering into any exclusive contract or right of ways with infrastructure owners/CAAs or any other authority".	Already accepted.
19	The Authority recommends that in case of introduction of new spectrum bands, change in technologies, increased users' demands etc., a) DoT should take up with BIS and MoHUA for incorporation of amendments in National Building Code and Model Building Bye-Laws, respectively.	May not be accepted in view of the amended definition of DCI.

	b) BIS should also prescribe essential provisions that would be required to be carried out by Property Manager for upgradation and expansion of DCI.	
20	The Authority recommends that the MBBL should have appropriate provisions for the approval of upgradation and expansion of DCI.	May not be accepted in view of the amended definition of DCI.
21	The Authority further recommends that the Property Manager should ensure upgradation and expansion of DCI in the timeline as will be prescribed in the MBBL.	May not be accepted in view of the amended definition of DCI.
22	The Authority recommends that, in all existing Buildings owned by the Government, PSUs or autonomous bodies of the Government, commercial buildings and public places such as airports, ports, railway stations, bus stations, metro stations or any other Building as may be decided by MoHUA in consultation with DoT, DCI shall be upgraded or provided to meet the requirements of state-of-the-art digital connectivity. In such cases, the Authority also recommends that the building bye-laws should prescribe a reasonable time frame so as to ensure availability and accessibility of upgraded DCI.	May be forwarded to MoHUA keeping in view the amended definition of DCI
23	The Authority further recommends that for existing Buildings other than those mentioned in recommendation no. 22, the new building bye-laws should be issued by MoHUA within three years after due consultation with the various stakeholders. Till then, it is recommended that, the Property Managers of such existing Buildings shall implement the new bye-laws voluntarily.	May be forwarded to MoHUA keeping in view the amended definition of DCI

24	The Authority recommends that, the Indian Telegraph Act, 1885 should be amended as follows: a) The Central Government may prescribe through rules for formation of Council of Digital Connectivity Infrastructure (CoDCI). b) The rules may specify the manner of certification of persons to design, deploy and evaluate DCI. c) Such rules may specify the qualification of and terms and conditions subject to which, such certification may be granted, including through conduct of examinations for granting such certifications, the fees and charges to be paid thereof, and other connected matters.	Recommendations no. 24 and 25 may not be accepted. TRAI recommended for the formation of Council of DCI (CoDCI). The broad roles and responsibilities of CoDCI as recommended by TRAI (in recommendation no. 26) mostly cover the matters related to TI Professionals such as qualification, capacity building, certification, evaluation etc. Meanwhile, a separate inter-ministerial Committee for "Suggesting procedure, norms & methodology for issuance of IBS-NOC by TERM Cell/LSA during Plan approval & completion and preparation of norms for the same" was constituted. The committee had members from MoHUA, BIS, TEC, NCA-T, Office of DG (T) and DoT HQ. After detailed deliberations, this inter-ministerial committee has recommended that the NCA-T (National Communications Academy-Technology) may be the nodal organization for all matters related to TI Professionals. Further, the Committee has also recommended that functions of TI Designer and TI Evaluator may performed by the professionals having minimum qualification as graduate engineer/ graduate architect and having completed the certification courses as applicable. Hence, recommendations related to formation of Council of DCI (CoDCI) may not be accepted. Further, NCA-T may be the nodal organization for all the functions related to CoDCI as recommended by TRAI. NCA-T may consult MoHUA and other institutions like CoA, ICE, TSSC etc. especially for training, capacity building, certification, evaluation and rating for TI.
25	The Authority recommends that a Council of DCI (CoDCI) should be established under the Department of Telecommunications (DoT). Ministry of Communication in collaboration with the Ministry of Housing and Urban Affairs (MoHUA), All India Council for Technical Education (AICTE), National Skill Development Council (NSDC), Telecom Sector Skill Council (TSSC), and Construction Skill Development Council (CSDC) or any other organisation/institution as deemed appropriate. The CoDCI shall be responsible for taking all decisions in respect of certification, registration and capacity building of DCI Professionals.	

26	The Authority recommends that broad roles and responsibilities of CoDCI are as follows: a. To prescribe the qualification, roles and responsibilities of DCI Professionals. b. To study the content of existing similar courses within and outside India and their suitability for DCI Professionals in India. c. To suggest appropriate Graduate and Diploma courses including elective/ certification courses at various levels for DCI Professionals. d. To accredit institutes and organisations for offering courses related to DCI. Considering that there are large number of Buildings in each State and UT, there may be a requirement of accreditation of institutions across all States and UTs for offering such courses and development of the workforce. e. To conduct examination and certify DCI Professionals. f. To organise training for trainers and skill upgradation of DCI professionals. g. To register qualified and certified DCI Professionals, on similar lines to the CoA. Such Professionals once engaged by Property Managers for development of DCI and declared on their plan documents shall be Persons on Record. h. To maintain a register of DCI Professionals and publish the same on online portal for access and use by various stakeholders. i. To keep a track of various activities related to capacity building and dissemination of the information to all stakeholders, the council needs to develop a digital	Recommendations no. 26 and 27 May be accepted. As far as roles and responsibilities are concerned, NCA-T may be the nodal organization for all the functions related to CoDCI as recommended by TRAI.
	platform for the cohesive implementation of DCI and linking of the same with various agencies. j. Any other work related to capacity building as deemed fit by the council.	
27	The Authority recommends that the CoDCI, within one year of its establishment or three years from the date of these recommendations, whichever is earlier, should establish a mechanism for certification, registration and capacity building of DCI Professionals including setting up of digital platform for the cohesive implementation of DCI.	
28	The Authority further recommends that till the time CoDCI is established, the provisions in new building bye-laws for DCI as recommended herein must be implemented by utilizing the services of the existing professionals already working in the field of design and development of Buildings and DCI.	May not be accepted. Reasons: Same as recommendation no 24 & 25.
29	The Authority recommends that a digital platform should be developed and maintained by CoDCI. The broad objectives of the digital platform include but not limited to the following: a) Activities related to capacity building of DCI Professionals: i. Publish details of the courses, accredited institutions and the process for admissions, and applicable fee structures if any. ii. Facility for conducting examinations for certification of DCI Professionals. iii. Registration facility for certified DCI Professionals. b) Publish the list of registered DCI Professionals and certified products and tools. c) Provide a marketplace for buying and selling of certified products. Such e-marketplace should be linked with Open Network for Digital Commerce (ONDC).	May be accepted. As far as roles and responsibilities are concerned, NCA-T may be the nodal organization for all the functions related to CoDCI as recommended by TRAI.

	d) Enable Property Managers to hire services of registered DCI Professionals. e) Enable interaction and collaboration among various stakeholders through various technologies and tools. f) To provide a feedback mechanism for the services delivered by registered DCI Professionals and certified products used. g) To maintain details with regard to development projects/ Buildings approved -- ongoing, completed and put to use by the local bodies and other competent authorities. h) To create a repository in respect of the service providers along with technologies and spectrum bands, who are offering services in the area and update the same from time to time. i) To create a repository of knowledge based on past learning of implementation of DCI projects to support in standardisation of the processes. j) To make available on a regular basis the information on standards, technology and best practices within India and at global level related to DCI. k) To publish analytical reports/articles on DCI development and related issues. l) To make available acts/ laws/ bye-laws/ rules/ regulations related to DCI. m) To facilitate online application, clearance and approval process for service providers seeking access to DCI created in Buildings	
30	The Authority further recommends that, till the time CoDCI is established, the digital platform should be created by DoT to meet immediate objectives, which can later be handed over to the CoDCI.	May not be accepted. Reasons: Same as recommendation no 24 & 25.

31	The Authority recommends that, approval of DCI design, deployment and use of Buildings should remain with the existing institutions as per statute of State/UT Governments for the purpose.	May be accepted. Online module for approval of DCI design, deployment and use of buildings may be created and integrated with existing Online Building Permission System (OBPS) of states. States not having their OBPS portal, may continue with their existing online/offline mechanism for the same. The template design for the module is being discussed in the committee. Creation and integration of the module with OBPS or any other mechanism followed by state, may be taken care by National Broadband Mission (NBM) Division, through State Broadband Committee (SBC).
32	The Authority further recommends that, the Authorities of the States/UTs responsible for approval of DCI development plans and evaluations thereof, should hire the services of a suitable expert/agency duly registered and certified by the Council of DCI (CoDCI).	May be accepted. As far as roles and responsibilities are concerned, NCA-T may be the nodal organization for all the functions related to CoDCI as recommended by TRAI. The inter-ministerial Committee for "Suggesting procedure, norms & methodology for issuance of IBS-NOC by TERM Cell/LSA during Plan approval & completion and preparation of norms for the same" has suggested procedure for certification of DCI professionals.
33	The Authority recommends that the BIS Panel on 'Information and Communication Enabled Installations' should develop standards in respect of DCI for the Buildings, to be included in the National Building Code as mentioned in Appendix-II to this chapter. The Authority further recommends that definitions, related to DCI, as mentioned in para 6.1 of Appendix-I, should be made part of the NBC.	May be forwarded to BIS with the amended definition of DCI.

34	The Authority recommends that appropriate provisions for Rating of Buildings for Digital Connectivity should be included in the MBBL, on the lines of the provisions made in the MBBL for rating of green buildings.	May be forwarded to MoHUA for their consideration
35	The Authority recommends that to start with, the Rating of Buildings for digital connectivity should be made mandatory for all existing as well as new Buildings of public importance within two years of issue of the regulatory framework by TRAI or two years from obtaining occupancy certificate, whichever is later. The Authority further recommends that Rating of the following Buildings of public importance should be made mandatory: a) Airports, b) Ports, c) Railway/ metro stations, d) Bus stations, e) Buildings of Central/ State/ UT Governments/ Local authorities/ Government agencies/ PSUs, f) Government residential colonies, g) Industrial estates including industrial parks, SEZs, multimodal logistic parks, h) Large commercial office complexes, i) Large commercial shopping complexes, j) All institutes of higher education including research institutes, k) All multi-speciality hospitals, and l) Any other Buildings as Government may decide.	May not be accepted Rating of building may be kept voluntary
36	The Authority also recommends that, the Rating of Buildings for digital connectivity should be made mandatory for all new Buildings, excluding the class of Buildings as may be decided by MoHUA in consultation with the States/ UTs and other stakeholders.	
37	The Authority recommends that the Property Manager should get Buildings rated for digital connectivity within two years of obtaining the occupancy certificate once TRAI has issued the regulatory framework.	The State Govt., may decide whether to make the rating of building, voluntary or mandatory for different category of buildings. This needs to be communicated appropriately to the States through amendment in the Model Building By-Laws (MBBL)
38	The Authority also recommends that for Buildings other than those mandated, the Property Manager may get their Buildings rated for digital connectivity on voluntary basis.	
39	The Authority recommends that, a new draft chapter on DCI for the Buildings, as suggested in the Appendix-I to this chapter, should be included in the Model Building Bye Laws, in line with the recommendation no. 7 at para 2.4.8.	Same as at recommendations number 7. Recommendations be forwarded to MoHUA.