#### CONSUMER PROTECTION ASSOCIATION HIMMATNAGAR DIST. : SABARKANTHA GUJARAT



#### **Comments on**

# Draft Manual for Assessment of Digital Connectivity Under Rating of Properties for Digital Connectivity Regulation, 2024

#### **General Comments**

#### 1. Commendable Initiative

The introduction of a standardized rating system for digital connectivity in properties is a progressive step. It will improve transparency for consumers and create accountability for property developers and ISPs.

#### 2. Clarity and Simplicity

While the manual is comprehensive, the terminology and criteria might be technical for laypersons (property buyers/tenants). A simplified consumer-facing summary or scorecard format should be proposed in the manual.

#### **Specific Comments**

**1. Rating Criteria and Weightage** 

- **Comment**: The weightage assigned to various parameters (e.g., infrastructure readiness, number of ISPs, peak data speed, latency, etc.) is not fully justified.
- Suggestion: Provide rationale and evidence (consumer feedback or technical studies) for assigning specific weights. Consider revising weightage based on end-user experience rather than only technical feasibility.

#### 2. Measurement of Speed and Latency

- **Comment**: The methodology relies heavily on self-reported data by service providers or developers.
- Suggestion: Introduce periodic third-party audits or allow crowdsourced testing from residents via mobile apps to validate data speeds and latency at property locations.

#### 3. ISP Availability

- **Comment**: Merely listing ISPs available at a location doesn't guarantee performance.
- **Suggestion**: Include ISP **uptime** and **service response metrics** as sub-parameters. Consider introducing a penalty for monopolistic scenarios with only one provider.

#### 4. In-building Infrastructure

• **Comment**: There is insufficient distinction between passive infrastructure (e.g., ducts, cable trays) and active provisions (e.g., ONTs, access points).

- **Suggestion**: Define levels or grades for in-building infrastructure readiness. For example:
  - Grade A: Fiber-to-the-Home (FTTH) with multiple ISPs and redundant paths
  - Grade B: FTTH-ready ducts but no active termination

# 5. Rating Review and Disputes

- **Comment**: The process for grievance redressal, appeals, or re-rating is unclear.
- **Suggestion**: Include a section detailing the procedure for:
  - Challenging a rating
  - Re-assessment due to upgrades or service deterioration
  - Time-bound resolution of complaints

# 6. Validity of Ratings

- **Comment**: Connectivity quality can degrade or improve rapidly.
- Suggestion: Make the validity of a rating time-bound (e.g., one year) and subject to renewal, especially in rapidly developing urban zones.

# 7. Inclusion of Emerging Technologies

- Comment: The manual lacks a framework to assess newer forms of connectivity such as 5G Fixed Wireless Access (FWA) or hybrid models.
- **Suggestion**: Include forward-looking provisions to assess next-gen connectivity solutions, especially in semi-urban and rural areas.

# Legal and Regulatory Alignment

- **Comment**: The manual should explicitly reference relevant clauses under the *Digital India* vision and *Right of Way* rules for infrastructure deployment.
- Suggestion: Integrate this manual with building codes, real estate compliance norms, and smart city guidelines.

#### **Consumer Awareness and Education**

- **Comment**: Implementation success depends on awareness.
- Suggestion: Propose guidelines for how rated properties should display the connectivity rating (e.g., brochures, websites, hoardings) and recommend a public registry or portal of rated properties.

#### Conclusion

The manual forms a solid foundation for an important consumercentric initiative. By incorporating objective testing methods, transparency in review mechanisms, and forward compatibility with emerging technologies, the framework can significantly enhance digital inclusivity and consumer empowerment.

Forward looking Provisions to access Next-Gen connectivity solutions for Semi Urban and Rural areas :

1. Inclusion of Non-Wired Technologies

**Provision:** 

Include metrics and assessment criteria for **Fixed Wireless Access (FWA)** using **5G**, **4G LTE**, or **Wi-Fi 6E** backhaul, particularly where fiber penetration is low.

# Rationale:

- FWA is expected to play a major role in rural broadband delivery.
- Many rural areas have no wired infrastructure, but cellular and satellite connectivity may be available.

#### 2. Satellite-Based Internet Services

#### **Provision:**

Add evaluation criteria for **Low Earth Orbit (LEO)** satellite broadband (e.g., Starlink, Bharti-OneWeb) including:

- Latency
- Average data speed
- Service uptime
- Cost per GB

#### Rationale:

- Satellite can offer reliable broadband in geographically isolated or infrastructure-deficient regions.
- Future connectivity landscapes will include such hybrid models.

#### 3. Resiliency and Redundancy Factors

#### **Provision:**

Rate properties on the **redundancy of connectivity mediums**—e.g., fiber + FWA or fiber + satellite combo.

#### Rationale:

- Redundancy is critical in rural areas prone to natural disruptions or power outages.
- Future networks will rely on intelligent switching between mediums.

# 4. Edge Computing and Local Caching

#### **Provision:**

For large properties (e.g., industrial hubs, agri-logistics parks), assess:

- Availability of local content caching
- Edge server installations to reduce latency

#### **Rationale:**

- Reduces backhaul dependence
- Improves performance even in limited bandwidth areas

#### 5. Smart Village/Cluster Readiness

#### **Provision:**

Include a score based on whether the property is part of a **smart village initiative**, with:

- Community Wi-Fi hotspots
- Digital literacy centers
- Common Service Centres (CSCs)

# **Rationale:**

- Aligns digital connectivity with overall ecosystem readiness
- Encourages holistic rural digital empowerment

# 6. Network Virtualization and Spectrum Sharing Support

#### **Provision:**

Evaluate if local ISPs or infrastructure providers support:

- Open RAN (O-RAN)
- Network slicing
- Spectrum sharing

# **Rationale:**

• Key for cost-effective rural rollout by allowing resource pooling and dynamic management of bandwidth.

# 7. Green and Sustainable Connectivity

#### **Provision:**

Rate digital infrastructure on:

- Use of solar-powered towers
- Energy-efficient network elements

#### Rationale:

• Sustainable connectivity solutions are critical in rural areas with limited grid reliability.

• Incentivizes eco-friendly telecom setups.

#### 8. Subsidy & Public Infra Integration Readiness

#### Provision:

Include a parameter indicating:

- Whether the connectivity infrastructure leverages government
  schemes (BharatNet, PM-WANI)
- Use of Gram Panchayat-level backhaul

#### Rationale:

- Encourages synergy with public investment
- Avoids duplication of infrastructure

#### Summary Table

Provision Area	Suggested Addition to Draft Manual	Benefits
Fixed Wireless Access (FWA)	Include criteria for 4G/5G- based broadband	Covers non-fiber rural areas
LEO Satellite Internet	Define performance benchmarks for satellite providers	Enables rating where terrestrial is absent
Redundancy/Resiliency	Rating for multiple technologies used	Ensures uninterrupted access
Edge Computing Score for local caching and edge devices		Improves speed and reliability
Smart Village Integration	Rating tied to village digital infrastructure	Aligns with national digital missions

Provision Area	Suggested Addition to Draft Manual	Benefits	
Network Virtualization	Include parameters for O-RAN	Prepares for cost-	
Readiness	and slicing	effective deployment	
Green Infrastructure	Eco-friendly tech scored	Supports sustainability	
	positively	goals	
Use of Government Infra	Score for leveraging BharatNet	Avoids duplication, uses	
	or CSCs	public infra	

# Constructions developments will be in next five years and Required provisions :

Over the next five years, India is poised to witness a surge in **digitallyintegrated infrastructure** as part of the Smart Cities Mission, Gati Shakti initiatives, and the increasing push for **Tier II & III urbanization** and **techenabled rural development**. Therefore, the **Draft Manual for Assessment of Digital Connectivity under Rating of Properties for Digital Connectivity Regulations, 2024** must anticipate and accommodate **emerging types of construction and development trends**.

Below is an analysis of expected developments and recommended provisions:

#### I. Likely Construction Developments (2025–2030)

#### **1. Smart Residential Townships**

- Integrated smart homes with IoT devices, automated metering, appcontrolled infrastructure
- EV charging stations, solar rooftops, and energy-efficient buildings

# 2. Commercial Co-working Spaces & Data-driven Offices

- Cloud-based access, video conferencing hubs, remote work infrastructure
- Flexible office floors with shared high-speed internet

#### 3. Greenfield Industrial Corridors / Warehousing

- High-capacity broadband for logistics tracking, AI-enabled warehousing
- Real-time data transmission for supply chain and manufacturing units

# 4. Smart Villages / Semi-Urban Clusters

- Government-planned smart gram panchayats with Wi-Fi zones, BharatNet backhaul
- Hybrid use of fiber, 4G/5G FWA, satellite internet

#### 5. EdTech & HealthTech Hubs

- Digital classrooms in schools and telemedicine rooms in rural PHCs
- Reliable video streaming, cloud storage, and e-consultation support

#### 6. Tech Parks and Startup Zones

- High-bandwidth, low-latency networks with edge computing and 5G slicing
- Future-ready networking infrastructure

# 🛠 II. Recommended Provisions for the Draft Manual

Type of Development	Key Connectivity Requirements	Suggested Provisions in the Manual
Smart Townships	Fiber-to-the-home, mesh Wi-Fi, home automation- ready	Mandate ducting for FTTH, provisioning for in-building Wi-Fi APs, IoT-readiness
Co-working & Smart Offices	Redundant broadband, 5G- ready cabling, cloud readiness	Rate properties on enterprise-grade connectivity, Wi-Fi 6 support, multiple ISP connections
Industrial Corridors	High uptime, edge computing, leased lines	Include provisions for NLD/ILD gateway support, uptime SLA rating, latency benchmarks
Smart Villages	Public Wi-Fi, BharatNet integration, satellite support	Score for use of BharatNet or PM- WANI infra, allow hybrid rating (FWA + fiber/satellite)
HealthTech & EdTech Hubs	HD video, data privacy, cloud storage	Introduce standards for telehealth bandwidth, latency < 50ms, educational zone readiness
Tech Parks / Startup Zones	Scalable architecture, virtualized networks	Assess Open RAN support, network slicing capability, and dark fiber provision

#### **Cross-cutting Provisions Needed in the Manual**

#### 1. Proactive Infrastructure Readiness Rating

 Include "Future-ready" rating subcategory based on ducts, redundant backhaul, and rooftop LOS clearance.

#### 2. Mandatory Digital Blueprints

 Developers should provide digital connectivity blueprints as part of building approval—similar to fire NOC.

# 3. Scoring for Technology Convergence

- Score developments higher if they allow convergence of Wi-Fi,
  5G small cells, and IoT platforms.
- 4. Smart Meter & Grid Integration

 Properties should be rated on the digital compatibility of utility metering and smart grid access.

#### 5. Disaster Resilience

 Include parameter for connectivity continuity during disasters (e.g., solar-powered towers, FWA fallback).

#### 6. Digital Public Infrastructure (DPI) Integration

Rate on readiness for e-governance, Aadhaar-based systems,
 UPI terminals, etc.

# Summary

The next wave of construction in India will not just require more connectivity, but *intelligent, flexible, and resilient* connectivity infrastructure.

The Draft Manual must evolve from assessing current broadband status to *predicting and promoting digital-readiness* for 5–10 years into the future.

Thanks.

Sincerely Yours,

1half.

(Prof.Dr. Kashyapnath) President