|  |  |
| --- | --- |
|  | **Document C25/INF/13-E** |
| **25 April 2025** |
| **English only** |
|  |  |
| Contribution by India (Republic of) |
| INDIA’S DIGITAL TRANSFORMATION SOLUTIONS PACKAGE TO DEVELOPING COUNTRIES, LEAST DEVELOPED COUNTRIES, SMALL ISLAND DEVELOPING STATES |
| **Purpose**This document serves as an Announcement for India’s ‘digital Transformation solutions package’ to Member States, especially developing countries (DCs), least developed countries (LDCs), landlocked developing countries (LLDCs), small island developing States (SIDS), and other underserved nations.**Action required by the Council**This report is transmitted to the Council for **information**.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**References***ITU Partner to Connect Pledges & ITU-ASP-RDF 2025 sessions* |

# 1 Introduction

India has been an active member of the **International Telecommunication Union (ITU)** since **1869** and a regular member of the **ITU Council since 1952**, playing a key role in shaping global telecom policies and promoting inclusive digital development. India is rapidly emerging as a global leader in digital transformation and the adoption of emerging technologies. With robust digital public infrastructure, a thriving startup ecosystem, and progressive policy initiatives such as **Digital India**, the country is leveraging technologies like **5G, AI, IoT, blockchain, and quantum computing** to drive inclusive growth and innovation.

India’s telecom sector is the second largest in the world, with a subscriber base of **1.18 billion** and a **teledensity of 84.32%**. The number of broadband subscribers has surpassed **944 million**, reflecting rapid digital adoption. Mobile data consumption has surged from **61.66 MB per month in 2014** to **21.10 GB per month in 2024**, driven by affordable data rates and increased internet penetration. These factors make India a crucial player in the global telecom landscape, offering best practices and innovative solutions.

India is hosting the **ITU Area Office and its first-ever Global Innovation Centre** in New Delhi since March 2023, positioning itself as a regional hub for advanced technologies and digital cooperation.

# 2 India’s Digital Transformation Solutions Package

India is actively supporting **developing countries (DCs), least developed countries (LDCs), landlocked developing countries (LLDCs), and small island developing States (SIDS)** through initiatives under **ITU’s Partner2Connect pledges** for global digital development. This includes support in 5G capacity building, Right of Way (RoW) policy implementation, and the deployment of homegrown digital solutions for emergency alerts, spam prevention, and mobile device security.

India’s Digital Transformation Solutions Package for ITU Member States includes:

– 4G/5G NSA core and open RAN solutions

– Disaster early warning platform (CAP) / emergency alerting solution

– Blocking of spoofed CLI calls/ SPAM to prevent potential financial fraud

– Tracing and blocking of lost or stolen handsets

– Capacity building and awareness in telecom regulatory policies (RoW / 5G rollout / spectrum utilization).

## 2.1 4G/5G NSA Core and Open RAN Solution

India’s premier telecom R&D organization, **Centre for Development of Telematics (C-DOT)**, has developed 3GPP-compliant, cloud-native 4G/5G NSA Core and Open RAN solutions to strengthen global telecom networks.

– Vendor-agnostic, scalable, and secure technologies to reduce CAPEX and OPEX

– Fully virtualized core supporting both NSA and SA architectures

– Open RAN solutions that promote interoperability and cost-efficiency

– Focus on security, resilience, and adaptability

– **Deployment**: Nationwide rollout in progress in **BSNL**, India’s government-owned telecom operator.

## 2.2 Disaster early warning platform (CAP) / emergency alerting solution

C-DOT’s **Cell Broadcast Solution** is a geo-targeted alerting system for congestion-free emergency communication over 2G–5G networks.

– **Network compatibility**: Works across 2G to 5G with major RAN vendors

– **Speed and scale**: Reaches 124 million people via 109 000+ towers over 557 000+ km2 in under 10 seconds

– **ITU-compliant**: Adheres to X.1303 CAP for global interoperability

– **Reliability**: Supports multilingual alerts with real-time monitoring and disaster recovery

– **Deployment**: Operational across all 36 states in India, with **19+ billion alerts sent**, **19+ languages supported**, and **100+ stakeholders onboarded,** successfully conducted **PoCs in Mauritius and El Salvador**.

## 2.3 Blocking of spoofed CLI / SPAM

To prevent financial fraud, the **Department of Telecommunications (DoT)** and telecom service providers have deployed a system to identify and block incoming international spoofed calls that falsely display Indian mobile number CLIs.

– **Launched**: 17 October 2024

– **Impact**: Blocked **13.5 million** spoofed calls within 24 hours

– **Results**: Nearly **97% reduction** in spoofed calls using Indian CLI

– Targeted common scams such as fake digital arrests, FedEx frauds, and impersonation of officials.

## 2.4 Tracing / blocking of lost or stolen handsets

India has developed the **Central Equipment Identity Register (CEIR)** through C-DOT to combat mobile device theft and ensure device integrity.

– Prevents use of devices with duplicate or fake IMEIs

– Curtails counterfeit devices, improving service quality

– Enables blocking and tracing of stolen mobile phones

– Supports lawful interception based on IMEI

– **Stakeholders**: GSMA (for TAC data), local manufacturers, and telecom service providers

– **Impact**: **3.0 million** devices blocked and **1.83 million** traced to date.

## 2.5 Capacity building or awareness in telecom regulatory policies (RoW / 5G Rollout)

### 2.5.1 Indian Telegraph RoW Rules (2016, Amended 2022)

The Right of Way (RoW) Rules provide a unified framework for deploying telecom infrastructure like underground cables, mobile towers, and 5G small cells.

– **Online clearance portals**: Implementation of single-window systems across the states and multiple stakeholders for faster approvals.

– **Simplified permissions**: Authorities must approve or reject applications within 60 days; lack of response implies deemed approval.

– **Low charges**: RoW fees are kept nominal to encourage rapid infrastructure development.

– **Use of street furniture**: Allows operators to install 5G small cells on public utilities like poles and traffic lights.

### 2.5.2 Indian Telecommunication Act, 2023

This new Act modernizes telecom governance in line with India's digital ambitions.

– **Unified legal framework**: Covers telecom services, infrastructure, spectrum use, and cybersecurity under a single, clear structure.

– **Ease of doing business**: Streamlines regulatory processes, improves coordination across ministries, and simplifies RoW-related approvals further.

– **Digital infrastructure as public utility**: Recognizes telecom infrastructure as critical public infrastructure, aiding smoother land access and cooperation with local bodies.

– **Spectrum reforms**: Introduces efficient spectrum management, including sharing, trading, and leasing, supporting advanced technologies like 5G and 6G.

– **National security and cybersecurity**: Strengthens safeguards, ensuring secure and resilient networks amid growing cyber threats.

### 2.5.3 Impact on 5G and beyond

These frameworks have created an enabling environment for India’s Digital Infrastructure rollout by:

 Accelerating fiber and tower deployments across urban and rural areas.

 Supporting innovation in both the private and public sectors.

 Reducing hurdles for telecom operators and startups.

 Laying a robust legal foundation for future technologies such as 6G, AI-powered networks, and IoT ecosystems.

 **Deployment:** India has achieved one of the fastest 5G rollouts in the world since the launch of 5G services in October 2022. A total of **0.469 million 5G Base Transceiver Stations (BTSs)** have been installed across the country, significantly enhancing network infrastructure. As of now, 5G services cover **99.6% of districts**, with **773 out of 776 districts**, including island provinces, having access to high-speed mobile connectivity. Notably, **0.295 million 5G BTSs** were deployed in the financial year **2023‑24** alone, showcasing the scale and speed of India's digital infrastructure expansion.

# 3 Next steps for interested Member States (supported by ITU)

## 3.1 Demos (in India)

Virtual/hybrid/in-person demo of field-deployed solutions for the interested Member States through tailor-made workshops as per country needs, involving ITU (Innovation centres)/CTO/APT as required.

## 3.2 Pilot / Small Scale Deployment (in Member States)

Live Demonstration of technology in their respective countries as a precursor to commercial scalable deployment.

## 3.3 Handholding (in Member States)

Capacity building and handholding for guided field deployment (virtual/hybrid/physical), including customization based on the country's needs

Notes:

 India will offer **Step 3.1 free of cost**. Steps **3.2 and 3.3** will be available at nominal cost based on further discussions, bilateral engagements, and the country’s economic status.

 Countries that have already expressed interest include **Maldives, Thailand, Malaysia, Cambodia, Papua New Guinea**, and others.

# 4 Support requested

The Council is requested to encourage Member States to adopt the **innovative and cost-effective digital solutions** developed and offered by India. Also, **ITU innovation Centre/s and regional offices are** also encouraged to facilitate and promote these collaborative initiatives.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_