



# Role of TEC in Standardisation in India

GLOBAL ICT STANDARDIZATION FORUM FOR **INDIA**

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GISFI Standardisation

[www.tec.gov.in](http://www.tec.gov.in)

Event

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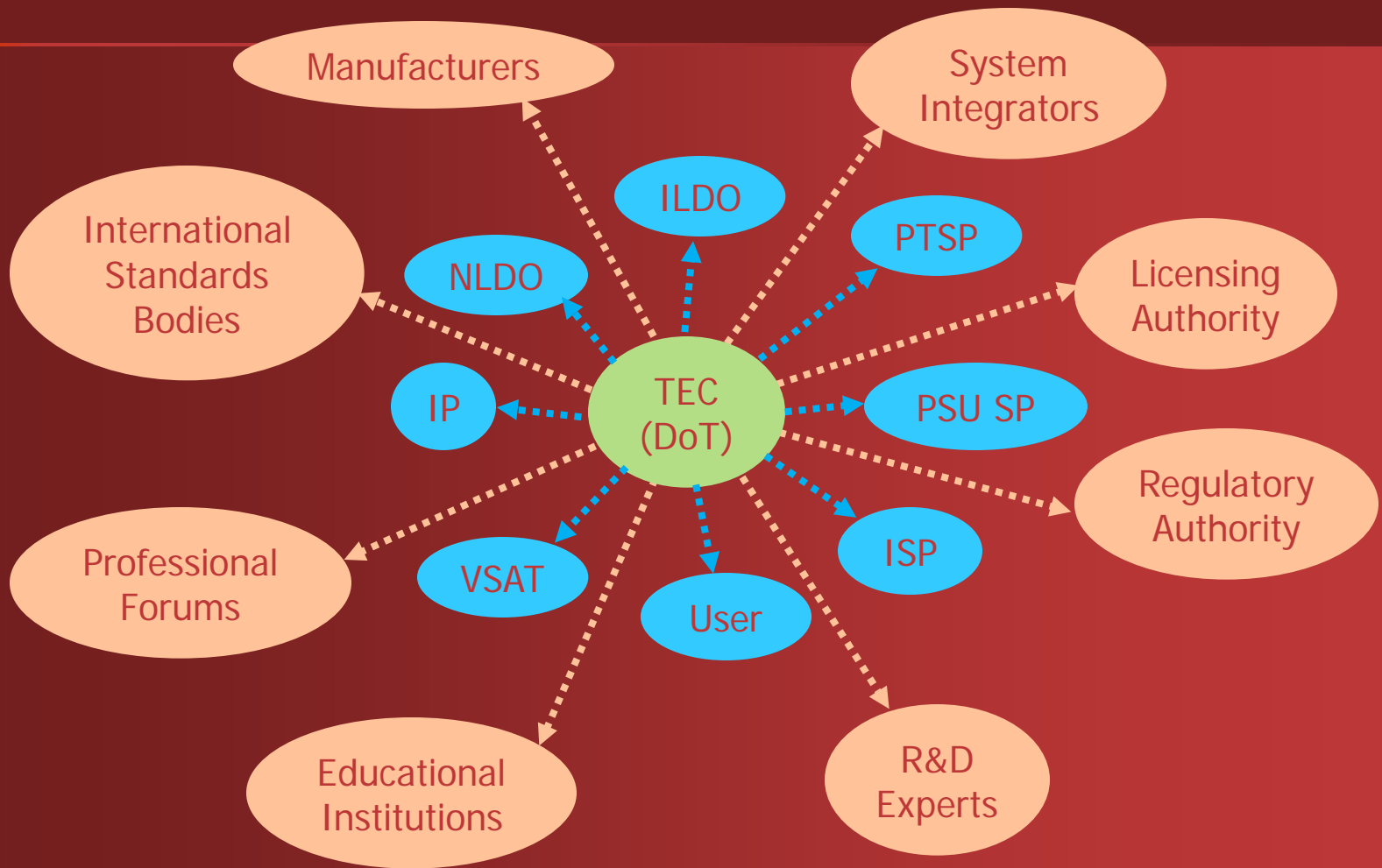
# Standardisation in India

- Creation of National Standards
- Harmonisation of International Standards
- Bureau of Indian Standards (BIS)
  - All products, except telecom
- Telecom Engineering Centre (TEC)
  - All telecom products

# Telecom Engineering Centre (TEC)

- Technical arm of Department of Telecom (DoT)
- Functions
  - Formulate standards
  - Formulate fundamental plans
  - Test and Certify
  - Provide technical support
  - Interact with ITU

# Stakeholders



# Evolution

- Telecommunication Research Centre (TRC) established in 1956, as an R&D wing of DoT
- C-DoT formed as an autonomous society, in 1984, to design digital switching systems suitable for Indian environment
- TRC bifurcated into TRC Society & Telecom Engineering Centre (TEC), in 1988
- TRC Society, entrusted with the work of developing transmission systems, merged with C-DoT
- TEC continues the activities for
  - Formulation of technical requirements
  - Testing and certification of telecom products, interfaces, and networks
  - Provision of technical support to DoT

# Bridging the Standardisation Gap

- Formulate technical requirements for all telecom equipment and networks, to ensure seamless functioning and inter-operability in Indian telecom network
- Formulate Fundamental National Telecom Plans, and provide technical support to service providers in implementing them
- Formulate standards to limit harmful electromagnetic interference to ensure proper functioning of equipment, as well as to ensure safety for human beings
- Formulate norms to ensure optimal utilisation of scarce resources
- Test and certify equipment, interfaces, and networks
- Monitor, for compliance to the laid-down norms and standards on need basis
- Provide technical support to DoT, WPC, USOF, TRAI, TDSAT

# Bridging the Standardisation Gap (contd.)

- Provide technical inputs to MHA, and other law enforcement agencies regarding lawful interception
- Provide technical inputs to NDMA for developing telecom network
- Participate in the meetings of standards development organisations, viz., ITU, IEEE, APT, ETSI, WRC, etc., for standardisation activities, as well as for safeguarding India's telecom interests
- Interact with other forums, viz., 3GPP, WiMAX, MEF, IETF, etc., for harmonising the standards
- Interact with stakeholders and associations, viz., COAI, AUSPI, ISPAI, VSAI, TEMA, FICCI, CII, etc., for implementation of standards and overall coordination
- Provide technical assistance to TSPs on specific issues
- Interact with other governmental bodies, viz., DoS, ISRO, MI&B, BIS, DIT, TDB, DST, DSIR, Planning Commission, etc., for provision of technical inputs

# New Major Activities

- Setting-up NGN Test-bed
- Facilitate migration from IPv4 to IPv6
- Facilitate indigenous development of Rural GSM
- Ensure conformance to EMF regulations
- National Numbering Plan
- MNP Acceptance Test Procedure
- Centralised Monitoring System (CMS)



# Organisational Structure

## ■ Core Divisions

- Fixed Line Access
- Information Technology
- Mobile
- Network & CPE
- Radio & Satellite
- Services & Applications
- Spectrum
- Switching
- Transmission
  
- Documents Formulation & Other Technical Activities

## ■ Other Divisions

- CAB & Training
- NGN Lab
- NGN Coordination
- T & C and Infrastructure

## ■ Regional Centres

- Northern, New Delhi
- Eastern, Kolkata
- Western, Mumbai
- Southern, Bangalore
  
- Testing & Certification



# Documents

- Requirements
  - Generic Requirements (GR)
  - Interface Requirements (IR)
  - Service Requirements (SR)
    - Conformance
    - Interoperability
    - EMI/EMC
    - Security
    - Safety
    - Health
- Testing & Certification
  - Test Schedule & Test Procedure (TS/TP)



# Formulation of Documents

- Multi-stage, consultative, transparent process
- Preparation of white paper/study paper
- Formulation of initial draft documents by TEC, based on international standards, field requirements, and developments in relevant technology
- Discussions in Sub-Development Coordination Committee (Sub-DCC), comprising technical representatives of various stakeholders, viz., users, select academia, R&D institutions
- Discussions in Manufacturers' Forum, comprising manufacturers, vendors, manufacturers' associations
- Discussions in Development Coordination Committee (DCC), comprising top technical representatives of stakeholders
- Formulation of final draft documents by TEC, based on all outcomes of different meetings



# Issues for GISFI

- Stress on development of standards and not for promoting any specific technology
- Specialised Standardisation, IPR and Legal Groups
- Approval of the government
- Participate in ITU Study Groups
- One of the item for standardising could be the chargers for the batteries at the customer premises



# Conclusion

- Certification of all telecom equipment to common standards
- Communication
  - Any Time
  - Any Body
  - Any Where
  - Any Screen

# Thank you

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