Role of National Institutions in Telecom Standards- Discussion
Background

**Indian Telecom Market**
- Second largest in the world
- Telecom identified as one of the drivers of inclusive economic growth
- Large investments planned in expanding the sector

**Indian Telecom Industry**
- Fewer products made in India - large part is still imported
- High outflow of Foreign Currency
- Only country in the top telecom markets with no umbrella body focusing on standards
- No common interface to represent Indian industry and requirements in global forums
Global Scenario

- Nations are becoming increasingly aware of IPR and use their IPR reserves to position trade policy
- China - good example
  - Has pushed its IPR in major 3G/4G standards
- We need to prepare India to lead future generations of technology
  - Indian IPR
  - Indian requirements
Indian Efforts

- **Centre of Excellence in Wireless Technology (CEWiT)**
  - A PPP initiative of DIT and industry set up in 2005
  - specifically to focus on increasing Indian presence and IPR in international wireless standards

- **Telecom Centers of Excellence (TCOE)**
  - An initiative by DoT and setup in PPP mode in IITs, IISc and IIMA in 2008
  - Accelerate technology development, generate IPR and make contributions to standard bodies
Recent Contributions from India in Global Standards

- **IEEE 802.1 (carrier Ethernet)** leading the effort on 802.1Qbf
  - TCOE of IIT Bombay
  - Tejas Networks

- **IEEE 802.16m (WiMAX)**
  - India now holds some essential patents
  - More than 20 contributions by CeWiT and IIT Madras in Physical layer
    - An entire new MIMO mode to take care of high-interference scenario in India
    - An alternative to femto cells in Indian context

- 14 contributions by IIT Bombay in Bandwidth reservations, QoS, Relay
TCOE India

- Vodafone
- Essar
- Alphion
- Idea Cellular
- IIT-KGP
- IIT-K
- IIT-M
- IIT-D
- BSNL
- Airtel
- Reliance Communication
- TATA Teleservices
- IISc
- COAI
- AUSPI
- DOT
- TEC
- TRAI
- C-DOT
CEWiT

- Supported partly by industry
- Extensive Collaboration with industry
Telecom Standards

- Standards are defined by industry forums, research labs and academia
- Major standards bodies
  - 3GPP/2, IEEE, IETF
  - Forums like WiMAX forum, Metro Ethernet Forum, MPLS Forum etc
- Role of ITU
  - Mostly performing consolidation task of work being carried out in other forums
Indian Presence

- **Modest (practically nil till recently)**
  - CeWIT, TICET IIT Bombay and Tejas Networks among few exceptions

- **Indian presence in major wireless standards bodies**
  - 3GPP, 3GPP2 meagre
    - Requires participant to be a member of a partner SDO of 3GPP/3GPP2 to participate
    - With no India SDO participation, CEWiT, et al have become members of ETSI or TIA to participate
      - Not a scalable model
    - Need Indian SDO which can become partner in major standards forums
### What model to adopt?

#### Example of SDOs in advanced countries

<table>
<thead>
<tr>
<th>Country</th>
<th>SDO/ Standards Body</th>
<th>Model</th>
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<tbody>
<tr>
<td>US</td>
<td>TIA (Telecom Industry Association)</td>
<td>Industry consortia (Part of Trade Association)</td>
</tr>
<tr>
<td>Korea</td>
<td>TTA (Telecommunications Technology Association)</td>
<td>A private-sector-driven international IT standardization association.</td>
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<tr>
<td>Japan</td>
<td>ARIB &amp; TTC (Association of Radio Industries and Businesses) &amp; (Information and Commn Tech Committee)</td>
<td>Association of companies.</td>
</tr>
<tr>
<td>Germany</td>
<td>DIN (The German Institute for Standardization)</td>
<td>Registered non-profit association. By agreement with the German Federal Government.</td>
</tr>
<tr>
<td>Canada</td>
<td>CSA (Canadian Standards Association)</td>
<td>Not-for-profit membership-based association.</td>
</tr>
<tr>
<td>Sweden</td>
<td>SIS (Swedish Institute for Standards)</td>
<td>Independent organization with members from public and private sector</td>
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**Recommended Model for Indian TSDO:** Member-driven non-profit PPP based autonomous organization
TSDO Structure

- India TSDO
- Academia and Research Labs
- Equipment Vendors
- Service Providers
- TEC
- TRAI
- DoT
Benefits to Industry

- Participate in the standardization activities and become members in the international standard bodies without paying for membership individually
- Can present the Indian market requirements strongly in the international fora and to the multinational vendors.
- A platform for the industry to come together and try to address common issues and India-specific hurdles.
- Get knowledge of latest developments and gain competitive advantage in the market
- Leveraging IPRs and patents that emerge from the Indian research ecosystem which get into the international standards
- Industry will be able to play an active role in the defining India’s future in Telecom
THANKS