India Evaluation Group
An Overview

Kiran Kuchi
CEWiT
TCOEs Across India

- Coordination Centre, New Delhi
- IIT Delhi
- IIT Kanpur
- IIM Ahmedabad
- IIT Mumbai
- IISc Bangalore
- IIT Kharagpur
- IIT Chennai

Govt/DoT
Public-Private Partnership Mode
Academia
Industry
Participating Entities of TCOE

- IISc
- IIT-B
- IIT-M
- IIT-D
- IIT-K
- IIMA
- IISc
- IIT-KGP
- TRAI
- Operators as Sponsors (7)
- Manufacturer as Associate Sponsor (1)

Supporting Orgns:
- FICCI
- CII
- TEMA
- DOT
- TEC
- COAI
- AUSPI
- C-DOT
- IIT-B
- IIT-M
- IIT-D
- IIT-K
- Equipment Manufacturers / Tech Company
- Other Reputed National / International Institutes
- Techno-Entrepreneurs

Academia
Supporting Orgn
Orgns expected to join
Strength of the TCOE India partners

• Top Seven Institutes of the country
• Top Seven Telecom Operators with 98% of the 470 Million subscribers
• National Government supported
• Industry Associations like COAI, AUSPI on board

Public Private Partnership (PPP) initiative
Research Areas addressed by TCOEs

- Rural Applications and Technology: 14 projects
- Energy and Telecom Infrastructure: 12 projects
- Security and Disaster Management: 7 projects
- Telecom Policy and Impact: 6 projects
- Next Generation Networks: 5 projects
- Miscellaneous: 15 projects (Capacity Building)
Motivation for Evaluation by TCOEs

• Adopt forthcoming Technologies to Indian context and environment

• Helps in its Role of Policy Advocacy to the Govt of India

• Builds a critical mass of Researchers & Students
Candidate RITs of Interest

• Our interest:
  – IEEE 802.16m
  – 3GPP LTE/LTE-A

• Both TDD and FDD modes

• India is looking to IMT-A technologies to provide cost-effective broadband connectivity to her citizens
  – Wire line penetration is modest (40M), compared to
  – Wireless cellular (430 Million)
    • Growth rate of 12-15 million users per month
Evaluation Focus

• Spectral efficiency with unity reuse
  – High population densities and limited spectrum

• Primary interest: Cell Edge performance for Nomadic users
  – Secondary interest: High mobility scenarios > 100mph

• Fixed/nomadic rural deployment
  – Not high-speed rural, Large cells

• Primary interest: 2 or 4 antenna BS and 2-antenna user terminal
  – Secondary interest: 8 antennas
Additional evaluation

- **Outage performance at cell-edge**
  - Studying alternative criteria to 5\textsuperscript{th} percentile; e.g., performance of users with SINR < 2 dB for nomadic users

- **Performance of QoS based Schedulers**
  - Response of RIT to India specific services and scenarios
Evaluation Process

- Faculty members/scientists and scholars from various IITs/IISc, being part of TCOEs, form teams
  - Each team takes up some evaluation cases
- Centre of Excellence in Wireless Technology (CEWiT) provides support for simulators, etc
  - CEWiT active participant in IEEE 802.16m and 3GPP LTE/LTE-A
- Interacting with other EGs/proponents for calibration, comparison of results, etc
  - CEWiT is the liaison
- **Single consolidated Evaluation Report** from TCOE India Co-ordination Centre
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