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Indo-European dialogue on
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13-14th March 2014 • New Delhi, INDIA

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Energy Efficiency Measurement of Telecom Equipment : An Indian Perspective

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Agenda

- Green Telecom Initiatives in India: Regulatory Perspective
- Energy Efficiency Standards for Telecom: Indian Requirements
- Energy Efficiency Standards for Telecom: Global Scenario
- Existing Standards and Gap Analysis
- Indian Standards Activities
- Conclusions

Green Telecom Initiatives in India: Regulatory Perspective

TRAI

All telecom products, equipments and services in the telecom network should be Energy and performance assessed and certified "Green Passport [GP]" utilising the ECR's Rating and the Energy 'passport' determined by the year 2015.

Ref: TRAI Recommendation: Approach towards Green Telecommunications, April 2011

ISO 9001:2008

Core group at Telecom Engineering Center (TEC):

- Standardizing the specifications for Telecom Equipment in respect of power consumption level and to formulate the norms/ standards

- Framing of guidelines on the standards/certification to certify telecom products, equipments and services – IP Router, GSM RBS chosen first

Indian Govt. keen on developing telecom EE standards

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Energy Efficiency Standards for Telecom: Indian Requirements

IP Routers

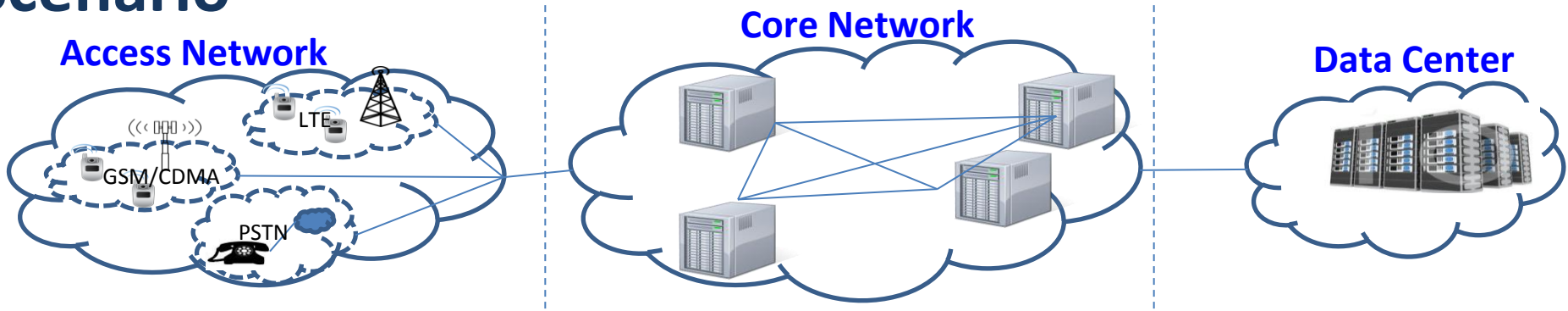
- Detailed specification on metrics and measurement methods for energy efficiency testing of IP routers
  - Support of low power states , sleep mode
  - Detailed procedure for modular equipment
  - Standardized reporting formats
- Norms and lab requirements

GSM Radio Base Stations

- Detailed specification on metrics and measurement methods for energy efficiency testing of GSM RBS
  - Equipment level EE metric with voice & data traffic
  - Support for RBS configurations deployed in India
  - Support for base stations with lower Transmit Power
- Norms and lab requirements

India has unique requirements for EE standards in telecom

Energy Efficiency Standards for Telecom: Global Scenario



ETSI	ITU	ATIS	ETSI	ITU	ATIS	ETSI	ITU	ATIS
TS 102 706 Wireless access network equipment ES 203 215 Wireline broadband access equipment	Recommendation ITU-T L.1310 Metrics for wired and wireless access technologies	ATIS0600015.2009/2013 General requirements	ES 203 184 Transport telecommunication networks equipment	Recommendation ITU-T L.1310 Metrics for routers and Ethernet switch, routers, small networking devices, optical transport	ATIS0600015.02:2009 Transport equipment	TS 105 174 Energy efficiency and KPIs: network sites, data centres	L.1300 : Best practices for green data centres	ATIS-060001501 2009: Server requirements
TS 102 533 Broadband telecommunication networks equipment		ATIS0600015.06.2011 Radio base station metrics	ES 203 136 Router and switch equipment		ATIS0600015:2013 Router and Ethernet switch products			ATIS-0600015.05: Facility energy efficiency
EN 301 575 Customer Premises Equipment		ATIS0600015.07:2013 Asymmetric Broadband	ES 201 554 Core network equipment					

Ref: GISFI TR GICT.105 V1.1.0

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Existing Standards and Gap Analysis

IP Routers

ETSI
- EEER metric, Traffic profile
- Environmental, electrical, metrology requirements and measurement methodology

ATIS
- TEER metric, IMIX traffic, Report format
- Environmental, electrical, metrology requirements and measurement methodology

ITU
- EER metric, Traffic profile
- Sleep and low power states support
- Environmental, electrical, metrology requirements, ATIS like methodology

Similar EE metrics, but gaps exist in measurement methods

GSM Radio Base Stations

ETSI
- Equipment, Site and Network level metrics
- Static method , Given radio configuration and traffic profile (Voice only)
- Environment, Electrical requirements
- Measurement procedure, Report format

ATIS
- TEER metric for RBS equipment, Voice traffic
- Environment, Electrical requirements
- Measurement procedure, Report format

ITU
- Recommends ETSI metrics

Does not meet identified Indian Requirements

Indian Standards Activities

- GISFI TR on Metrics and Measurement Methods for Energy Efficiency understands Indian requirements and gaps in standards
- TRs released on General Requirements, IP routers , GSM RBS
- TS on IP routers completed, GSM RBS in progress

- IP Routers – ATIS approach chosen as base document and further enhanced with GISFI TR and TS on General Requirements
- GSM RBS specification in progress

GISFI and TEC actively developing EE standards in India

Conclusion

- India has unique requirements for EE standards on telecom equipment

- IP routers and GSM RBS chosen on priority for EE standards in India
  - NEC contributed to specification on IP routers through GISFI – Accepted as Indian standard
  - Technical study in progress for GSM RBS at TEC and GISFI

- Synergy between standards, regulatory requirements and stakeholders to develop EE standards for telecom

THANK YOU

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Annex

Technical Reports and Specifications for Green Passport certification: Contributions to TEC

Technical Reports:

- GISFI_GICT_201301389 : Approach towards Implementation of Green Telecom in India, Jan 2013
- GISFI_GICT_201307393 : GISFI's comments on ECR Document-Test procedure and measurement methodology, July 2013
- GISFI_GICT_201307394 : Technical Review of Global Standards on Energy Efficiency of IP Equipments, Jul 2013
- GISFI_GICT_201311434: Recommendation on priority of equipment to be considered for Green Passport activity, Nov 2013
- GISFI Contribution on TEC_baseline_Document- IP Router Energy Efficiency-,Nov 2013

Technical Reports and Specifications on Green ICT in India : Contributions to GISFI

Technical Reports:

- GISFI TR GICT.105 V1.1.0 (2012-12) Metrics and Measurement Methods for Energy Efficiency; (Release 1)
- GISFI TR GICT.106 V1.0.0 (2013-08) Metrics and Measurement Methods for Energy Efficiency: IP Routers; (Release 1)
- GISFI TR GICT.107 V1.0.0 (2013-08) Metrics and Measurement Methods for Energy Efficiency: Radio Base Stations; (Release 1)

Technical Specifications:

- GISFI TS GICT.100 V1.0.0 (2013-01) Metrics and Measurement Methods for Energy Efficiency: General Requirements; (Release 1)
- GISFI TS GICT.101 V1.0.0 (2013-02); Metrics and Measurement Methods for Energy Efficiency: Classification of Telecommunication Equipments; (Release 1)