

Standardization: Plans and Progress

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Working Party 3 of ITU-T Study Group 5

ITU: unique public/private partnership



- **UN agency** for ICTs
- **Members:**
 - **193 Member States**
(Governments and regulatory bodies)
 - **Over 700 Private Sector**
(Sector Members and Associates)
 - **Over 45 Academia**

Mr. Ban Ki-moon, Secretary-General of the United Nations
and Dr. H. Touré, Secretary-General of ITU

Committed to connecting the world



ITU-T Study Group 5

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Terms of Reference

Study Group 5 is lead SG for:

- Environment and climate change
- Electromagnetic compatibility and electromagnetic effects

Study Group 5 is responsible for studies on:

- ICT environmental aspects of electromagnetic phenomena and climate change;
- Electromagnetic compatibility (EMC), safety and human exposure assessment connected with electromagnetic fields produced by telecommunication installations and devices, including cellular phones

Structure

Structure of ITU-T Study Group 5

ITU-T SG5 "Environment and climate change"

Q 12 Terminology

WP1/5

Damage prevention
and safety

5 Questions

WP2/5

Electromagnetic fields:
emission, immunity and
human exposure

6 Questions

WP3/5

ICT and climate
change

7 Questions

Working Party 3/5

“ICT and climate change”

WP3/5 is responsible for studies relating to ICT, environment and climate change, development of methodologies for evaluating the ICT effects on climate change and publishing guidelines for using ICTs in an eco-friendly way.

Work areas:

- **Q13/5** - Environmental impact reduction including e-waste
- **Q14/5** - Setting up a low cost sustainable telecommunication infrastructure for rural communications in developing countries
- **Q15/5** - ICTs and adaptation to the effects of climate change
- **Q16/5** - Leveraging and enhancing the ICT Environmental sustainability
- **Q17/5** - Energy efficiency for the ICT sector and harmonization of environmental standards
- **Q18/5** - Methodologies for the assessment of environmental impact of ICT
- **Q19/5** - Power feeding systems

Main achievements

Highlights on Deliverables of WP3/5

👉 Important green ICT standards that were developed in the previous study period by SG5 WP3.

- Recommendation ITU-T **L.1000**: Universal power adapter and charger solution for mobile terminals and other hand-held ICT devices
- Recommendation ITU-T **L.1001**: External universal power adapter solutions for stationary information and communication technology devices
- Recommendation ITU-T **L.1100**: A method to provide recycling information of rare metals in ICT products
- Recommendation ITU-T **L.1200** : Direct current power feeding interface up to 400V at the input to telecommunications and ICT equipment
- Recommendation ITU-T **L.1300**: Best practices for green data centers
- Recommendation ITU-T **L.1310**: Energy efficiency metrics and measurement for telecommunication equipment
- Recommendation ITU-T **L.1400** : Overview and general principles of methodologies for assessing the environmental impact of information and communication technologies
- Recommendation ITU-T **L.1410** : *Methodology for environmental impacts of Information and Communication Technologies (ICT) goods, networks and services*
- Recommendation ITU-T **L.1420** : *Methodology for environmental impacts of Information and Communication Technologies (ICT) in organizations*

Tackling E-waste with Global ICT Standards

- “Universal power adapter and charger solution for mobile terminals and other ICT hand held devices”
(Recommendation ITU-T L.1000)
- *Saves 82,000 tons of e-waste per year*
- *Saves at least 13.6 million tons of CO2 emissions annually*





Waste Management with Smart ICT Standard

The step after L.1000...

- **NEW** - “External universal power adapter solutions for ICT equipment for stationary use” (**Recommendation ITU-T L.1001**)
- Saves 300,000 tons of e-waste annually
- Reduces the energy consumption and greenhouse gas (GHG) emissions of external power supplies by between 25% and 50%
- **Approved!**
- **Contributions are needed** to develop Universal Power Adapter for portable devices (Phase 2)



Direct current power feeding interface up to 400V at the input to telecommunications and ICT equipment

- **Recommendation ITU-T L.1200** specifies direct current power feeding with interface direct current 260V to 400V at the power input to ICT equipment which can offer many potential benefits:
 - simple power chain
 - low maintenance
 - modularity and power scalability
 - high reliability
 - high energy efficiency (gain of 5 to 20% energy consumption compared to different existing best in class powering solutions)
 - low cost at same performance level

Best Practices for Green Data Centres

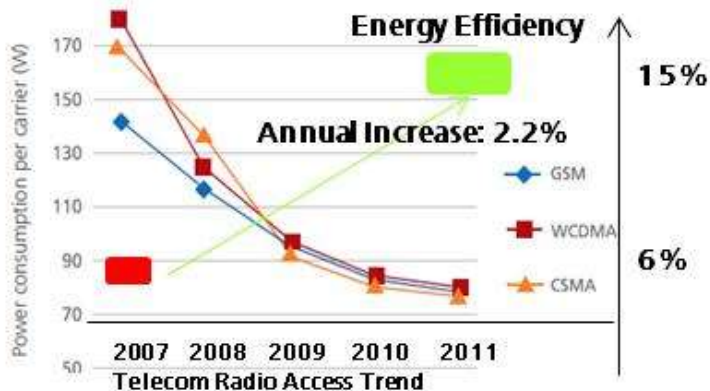
- **Recommendation ITU-T L.1300** describes a certain number of best practices aimed at reducing the negative impact of data centres on climate change. It is commonly recognized that data centres will have an ever-increasing impact on the environment in the future, considering the huge development of cloud services.
- Such best practices are related to optimum design and construction as well as to most efficient use and management of data centres, taking into account both power and cooling equipment.
 - For example, applying best practices to cooling could reduce the energy consumption of a typical data centre by more than 50 per cent.



- The application of the best practices defined in this Recommendation can therefore help owners and managers to build future data centres, or improve existing ones, to operate in an environmentally responsible manner.

Energy efficiency metrics and measurement for telecommunication equipment

- **Recommendation ITU-T L.1310** contains the definition of energy efficiency metrics, the related test procedures, methodologies and measurement profiles required to assess the energy efficiency of telecommunication equipment (*Phase 1*).
 - includes: wired as well as wireless broadband access; optical transport technologies; routers; switches; mobile core network equipment; and small networking equipment used in homes and small enterprises.



- These metrics evaluate ICT equipment's energy efficiency through a comparison between its technical performance (useful work) and its energy consumption.

Contributions are needed to develop the network level metrics (Phase 2)



ITU-T Methodologies

☞ **Common set of methodologies for the assessment of ICT carbon footprint**

- *Without, it will be impossible to provide meaningful comparisons*
- *Helps to establish the business case to go green*

3 Recommendations published - available on the ITU-T website:

- **L.1400** Overview and general principles
- **L.1410** Environmental impact of ICT goods, networks and services

L.1410 has been included by the EC in the short list of methodologies to be tested through specific pilots (conducted by the ICT industry itself). The ultimate objective is to establish a common methodological framework which could be broadly adopted by the ICT industry.

- **L.1420** Environmental impact of ICT in organizations

3 Recommendations under preparation :

- **L.1430** Environmental impact of ICT projects (consent expected in 2013)
- **L.1440** Environmental impact of ICT in cities (consent expected in 2013)
- **L.1450** Environmental impact of ICT in countries (consent expected in 2014)

☞ Developed in cooperation with UNFCCC Secretariat, EC and over 40 other organizations etc.

ITU-T L.1410: Goods, Networks and Services

- Recommendation that complements ISO 14040 and ISO 14044 and provides guidance on how to assess environmental impacts of **ICT Goods, Networks and Services**
 - Developed in collaboration with representatives from the ICT sector and governments. It has been built to be consistent with EC/JRC, ETSI, IEC and GHG Protocol ICT supplement initiatives
 - Focuses on energy consumption and GHG emissions
 - More than 100 contributions and inputs were received.
- There are **2 Parts** in the Recommendation:
 - Part I: ICT Lifecycle assessment: framework and guidance
 - Part II: Comparative analysis between ICT and baseline scenario: framework and guidance

Focus Group on Smart Sustainable Cities

Focus Group on Smart Sustainable Cities:

- Established at SG5 meeting in Geneva, 29 January to 7 February 2013
- As an open platform for smart-city stakeholders



- Main tasks and deliverables:
 - Defining the role of ICTs in environmentally sustainable smart cities, and identifying the ICT systems necessary to the development of a Smart Sustainable City;
 - Collecting and documenting information on existing smart city initiatives and technical specifications, focusing in particular on the identification of standardization gaps;
 - Identifying or developing a set of Key Performance Indicators (KPIs) to gauge the success of smart-city ICT deployments;
 - Establishing relationships and liaison mechanisms with other bodies engaged in smart-city studies and development;
 - Identifying future smart-city standardization projects to be undertaken by its parent group, ITU-T Study Group 5;
 - Developing a roadmap for the ICT sector's contribution to Smart Sustainable Cities, providing cohesion to the development and application of technologies and standards.

Partnership & Cooperation

Partnership & Cooperation

- Need for a **global concerted effort** and a strong collaboration with all key stakeholders involved **to tackle major environmental challenges**
- In order to develop standardized ICT solutions to combat climate change and protect the environment, SG5 has built **successful collaborations with different partners**:
 - national administrations,
 - regulators,
 - international organizations,
 - standards development organizations,
 - Companies
 - academia.
- SG5 works closely, inter alia, with ITU-R, ITU-D, UNFCCC, UNEP, WHO, CIGRÉ, EC, CENELEC, ETSI, ISO, IEC, GeSI, GHG Protocol Initiative and ICT4EE Forum.



Climate Change Events

ITU Events in Italy

- 8th Symposium on ICTs, the Environment and Climate Change
 - 6-7 May 2013 – Turin, Italy
 - jointly organized with the Italian Ministry of Economic Development and hosted by Telecom Italia
- 1st Meeting of Focus Group on Smart Sustainable Cities
 - 8 May 2013 – Turin, Italy
- Workshop on Human Exposure to Electromagnetic Fields (EMFs)
 - 9 May 2013 – Turin, Italy
 - jointly organized with the Italian Ministry of Economic Development and hosted by Telecom Italia

- To bring together leading specialists in the field, from top policy-makers to engineers, designers, planners, government officials, regulators, standards experts and others.
- To raise awareness of the importance and opportunities of using ICT standards to build a green economy.

Programme:

- 09/16: ITU, UNEP, UNU, CEDARE Workshop on E-waste
- 09/17 (morning): Information Session on Green ICT Standards
- 09/17 (afternoon): High Level Segment on Smart Sustainable Cities
- 09/18: Meeting of the Focus Group on Smart Sustainable Cities
- 09/19: 3rd Workshop on Submarine Communications Networks For Climate Monitoring and Disaster Warning
- 09/20: Meeting of the ITU/WMO/UNESCO -IOC Joint Task Force on Submarine Communications Networks For Climate Monitoring and Disaster Warning

SEE YOU IN MADRID, on 16-20 September 2013



Links & Additional Information

- ITU-T/SG5 “Environment & Climate Change”
<http://www.itu.int/ITU-T/studygroups/com05/index.asp>
- ITU-T and climate change
<http://www.itu.int/ITU-T/climatechange>
- ITU Symposia & Events on ICTs and Climate Change
<http://www.itu.int/ITU-T/worksem/climatechange>

Thank YOU



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