Better Living with ICT

ETSI

World Class Standards

A Connected World

Technologies that improve peoples' lives and environment

Digital living for the benefit of society and individuals

Better Living with ICT

While technological progress has improved the way we communicate for both social and business purposes and opened up exciting new opportunities, we are careful to minimize any adverse social consequences.

Part of our work therefore involves making products and services simpler to use, safer and more efficient. We are also committed to identifying energy efficiency solutions that mitigate the impact on climate change of the growing use of Information and Communications Technologies (ICT).

We are working to define the best environmental practices for telecommunication equipment and infrastructures in different situations. Many of the standards and specifications produced by our Environmental Engineering committee (TC EE) are aimed at improving the energy efficiency and the environmental impact of ICT equipment. We are also contributing to a number of global initiatives launched with these aims.

ETSI has also been defining the complete life cycle for ICT goods, networks and services, from its development to the end of its life. This definition is useful in making assessments of the environmental aspects of a product in the various phases of its life cycle. Operational needs are also being addressed; these include power optimization for broadband equipment, energy control and monitoring, alternative energy for telecommunication installations, etc.

Although our environmental activities are concentrated in a number of specific committees, our environmental policy affects all aspects of our work. For example, before work is started on any new standard or specification at ETSI, environmental aspects must be considered and documented by the technical committee concerned.

ETSI also addresses the user experience in a variety of ways. ETSI defines 'Quality of Service', i.e. the characteristics of the telecommunications service that reflect its ability to satisfy stated and implied needs of the user of the service, as well as 'Quality of Experience', i.e. the overall acceptability of an application or service, as perceived subjectively by the end-user.

Our Human Factors committee has a long and internationally respected record of championing eInclusion and Design for All, ensuring that developments in technology are accessible to all in our society, including the elderly, the young and those with disabilities. This approach helps give everyone the same access to goods and services.

In addition, by widening access, European industry expands its market and thus improves its competitive position globally.

ETSI's work in Human Factors deals with issues relating to ease of use of ICT products and services, and accessibility for all users. In order to provide the necessary guidance to designers and developers, ETSI has identified particular user needs related to special domains like public Internet terminals and needs related to eHealth; novel emerging user interface technologies; individual requirements related to factors such as age, language or disability and personalization.

ETSI Groups in the Better Living with ICT Cluster

- **ATTM** (Access, Terminals, Transmission and Multiplexing)
- **EE** (Environmental Engineering)
- **HF** (Human Factors)
- **OEU** (Operational energy Efficiency for Users)
- **ORI** (Open Radio equipment Interface)
- **Safety**
- **STQ** (Speech and multimedia Transmission Quality)
- **User Group**

The cluster co-operates with various fora, consortia and organizations, including:

- **ATIS**
- **Broadband Forum**
- **CEN**
- **CENELEC**
- **GeSI**
- **GSMA**
- **HGI**
- **IEC**
- **ISO**
- **ITU-T**
- **OMA**
- **W3C**

Standardization Activities

Energy efficiency for ICT

Our Environmental Engineering committee (TC EE) is working to define the best environmental practices for telecommunication equipment and infrastructures in different situations. These include environmental conditions (climatic, thermal, active substances, acoustic etc.) and eco-environmental issues, including energy efficiency, environmental impact analysis and alternative energy sources.

A recent focus has been the development of standards in support of European Commission (EC) Mandate 462 on energy efficiency in fixed and mobile information and communication networks, done in cooperation with our ATTM committee and CEN and CENELEC. This is in addition to standardization in support of the regulations related to the EC Directive on energy-related products such as the regulation on network standby mode power consumption.

Recently developed standards include an ETSI Standard (ES) on the 'Green Abstraction Layer', the power management capabilities of fixed network nodes, which was developed in co-operation with the EU Research Project ECONET, an ES on methodology to assess the energy efficiency of wireless access networks, and ESs on measurement methods for the energy efficiency of, respectively, wireless access network equipment and core networks.

Together with the ITU-T, ETSI has developed a joint specification which provides industry with a uniform way to measure the environmental impact of ICT, based on ETSI's methodology for the Life Cycle Assessment (LCA) of ICT goods, networks and services. The LCA methodology allows manufacturers and operators to determine the environmental impact of a telecommunication product from its raw material or components until the end of its life, as well as how to measure the environmental impact of a complete telecommunication network or service.

Our Access, Terminals, Transmission and Multiplexing committee (TC ATTM) develops and maintains a series of standards on Global Key Performance Indicators (KPIs) to support the deployment of eco-efficient networks and sites and to monitor the energy management of deployed broadband. This work is being undertaken in close co-operation with our Industry Specification Group on Operational energy Efficiency for Users (ISG OEU) in order to take into account users' operational needs. These KPIs provide ICT users with tools to monitor the energy management of networks and sites in full compliance with the Kyoto Protocol on climate change and the reduction of greenhouse gas emissions. ISG OEU also produces reference specifications on sustainable data centres and ICT sites.

Access for all

ETSI's Human Factors committee (TC HF) has always championed the importance of the user experience in ensuring that developments in technology are usable and accessible to all people in society, including the elderly, the young and those with disabilities.

A 'Design for All' approach helps ensure that everyone has the same access to devices, systems and services. ETSI has taken steps to systematically identify and treat accessibility aspects related to any new standard or specification under development.

In response to EC Mandate 376 on the "European accessibility requirements for public procurement of products and services in the ICT domain", we have published a European Standard (EN) which specifies ICT accessibility requirements and testing methods in a form that is suitable for use in public procurement. The standard was developed in collaboration with CEN and CENELEC.

We plan to focus on support for users of services and devices with cognitive impairments. The number of people in the European Union with a learning disability currently ranges between 5 and 15 million people. Cognitive impairments are often related to old age, therefore people who are currently active and ICT-literate may experience major usability problems and digital exclusion when they get older, unless action is taken now to enable ICT to support people with cognitive disabilities.

The main focus of activity in our User Group is the quality of telecommunication services from a user's perspective and the collection of users' requirements from visually impaired people. We maintain an ETSI Guide on Quality of Service (QoS) assessment methodology.

Media quality and the user experience

Our Speech and Multimedia Transmission Quality committee (TC STQ) is working on a long-term project on terminals using super-wideband (bandwidth up to 14 kHz) and full-band terminals for conversational services for teleconferences and audio-visual applications.

In addition, we maintain a suite of specifications covering all aspects of end-to-end single media and multimedia transmission performance, Quality of Service (QoS) parameters for networks and services and Quality of Experience (QoE) descriptors and methods. This includes coverage of QoS of VoIP, speech intelligibility and improving listening quality for people with impaired hearing.

Safety

Our Safety committee (TC Safety) monitors developments in electromagnetic fields (EMF), electrical safety and safety in cable television systems, as these impact the interests of our members.

We are working with CENELEC to review current standards in the light of changes brought about by the revised EC Directive on the protection of workers from the risks related to EMF at work.

To find out more about ETSI's Better Living with ICT activities or to get involved, please contact **MARCELLO PAGNOZZI**, coordinator for the Better Living with ICT cluster: **Better_Living_with_ICT@etsi.org**

ETSI, 650 Route des Lucioles, 06921 Sophia-Antipolis Cedex, France. Tel: +33 (0)4 92 94 42 00 Fax: +33 (0)4 93 65 47 16