

# Standardization supporting innovation and growth



European Standardization Organizations



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The European Committee for Standardization (CEN) is a business catalyst in Europe, removing trade barriers for European stakeholders such as industry, public administration, service providers, consumers and other stakeholders. Its mission is to foster the European economy in global trading, the welfare of European citizens, and the environment. Through its services CEN provides a platform for the development of European Standards and other specifications.

CEN's 31 National Members work together to develop voluntary European Standards (ENs) in various sectors to build a European Internal Market for goods and services and to position Europe in the global economy. By supporting research, and helping disseminate innovation, standards are a powerful tool for economic growth. More than 60.000 technical experts as well as business federations, consumer and other societal interest organizations are involved in the CEN network that reaches over 480 million people.

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The European Committee for Electrotechnical Standardization is officially responsible for standardization in the electrotechnical field. In an ever more global economy, CENELEC fosters innovation and competitiveness, making technology available not only to major businesses but also to SMEs through the production of voluntary standards. CENELEC creates market access at the European level but also at the international level through its cooperation agreement with the International Electrotechnical Commission (IEC).

Through the work of its 31 Members together with its experts, the industry federations and consumers, Electrotechnical European Standards are created in order to help shape the European Internal Market, to encourage technological development, to ensure interoperability and to guarantee the safety and health of consumers and provide environmental protection.

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ETSI produces globally-applicable standards for Information and Communications Technologies (ICT), including fixed, mobile, radio, converged, aeronautical, broadcast and internet technologies and is officially recognized by the European Union as a European Standards Organization. ETSI is an independent, not-for-profit association whose 740 member companies and organizations, drawn from 62 countries across 5 continents worldwide, determine the ETSI work programme and participate directly in its work.

ETSI's complementary standards-enabling services (Interopolis and Forapolis) offer "Idea to Product" solutions. Interopolis provides testing methodology expertise, including interoperability test events. Forapolis provides a full range of support and management services to associations and fora.

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## European Standardization Organizations Innovation and strategic policy

CEN, CENELEC and ETSI, the European Standardization Organizations (ESOs), firmly believe that standardization is an integral part of R&D activities and thus is critical to innovation. The ESOs see innovation as an important standards driver and are committed to improving links between standardization and research. Indeed:

- results of research projects can be invaluable to standardizers;
- research projects need to have state-of-the-art information on standards available or under development;
- standards activity may itself generate the need for additional research, for instance into appropriate product test methods.

Standardization and standards are a means to disseminate the results of research and innovation projects, including intellectual property rights, towards marketable product and process innovation activities.

In addition, standards can have an economic impact as output and performance indicators when evaluating the outcome of research and innovation projects and programmes.

The potential of standards and the standardization process to promote the effectiveness and efficiency of research and innovation processes has not yet been fully exploited by researchers, innovators, and funding organizations.

Nevertheless, the European Standardization Organizations have already started to include innovation in their activities.

# European Standardization Organizations' activities promoting innovation

## CEN and CENELEC activities

A strong link between standardization and innovation exists: on the one hand, standardization fosters innovation by accelerating its access to both domestic and global markets, and on the other hand, innovation strengthens European industry's competitiveness, bringing new export opportunities and economic growth, hence contributing to the recovery of Europe's economy. Therefore, CEN and CENELEC strive to identify and anticipate technological needs, in setting up e.g. common activities:

### Working Group on Standardization, Innovation and Research (STAIR)

Responding to the European Council Conclusions on standards and innovation (25 september 2008), CEN and CENELEC have established the STAIR Working Group. This is a joint strategic Working Group addressing **ST**andardization, **I**nnovation and **R**esearch in order to:

- provide strategic advice to the Technical Boards in CEN and CENELEC towards an integrated approach between research & innovation and standardization;
- consider overall European Commission policies on innovation and research, and how standards can contribute as effectively as possible to their execution;
- make proposals to bridge research projects with the standards community.

For more information on the activities of CEN and CENELEC regarding innovation, please see the brochure "STAIR – An integrated Approach for Standardization, Innovation and Research" available on CEN and CENELEC websites.

## CEN-CENELEC Workshops

CEN-CENELEC Workshops are fast, relatively informal consensus-building groups. They are particularly suited to innovative "experimental" standards topics and they can even be organized as part of research project activities - to validate and publish the results in an open consensus. Some Workshops can deliver results in six months; between one-third and half of Workshops at any one time are linked to research projects.

CEN and CENELEC have a dedicated team to help research projects, research organizations and research and development departments in companies to interact with the standards community by:

- finding existing standards activities relevant for projects and proposals;
- putting innovators in touch with national standardization networks of 31 CEN and CENELEC members;
- providing advice to innovative projects, for instance to project consortia wanting to introduce a "standards work package" in research funding proposals;
- setting up new standards activities by contacting existing Technical Committees or, especially in new domains, by setting up a tailor-made Workshop;
- participating sometimes in project consortia.

## **ETSI activities Standardization – an integral part of innovation**

If innovative technologies are to generate return on investment, create jobs and have a broad impact on global society, it is vital that the technologies can access global markets early. It is now widely agreed that the best tool to ensure this is standardization, addressed at the earliest possible stage.

With today's levels of global competition, the traditional view of product development that entails a sequential process starting with research, continuing into development, through to production and distribution (with standardization somehow fitted into the chain) is no longer valid. Today, research, prototyping and standardization are very much overlapping processes. 'Time to market' is frequently critical to both the deployment of a new technology and individual commercial success, and the compression of these phases in the development process can contribute greatly.

ETSI actively seeks to interact with R&D projects and activities as they are at the forefront of ICT innovation. However, it is not always easy to create an effective interface between the R&D and standardization communities since they often have different backgrounds and mindsets. In many instances research projects still do not include standardization early enough, possibly because they are not aware of the benefits. ETSI has recently introduced the concept of Industry Specification Groups (ISGs) to address the challenge.

### **Industry Specification Groups (ISGs)**

ISGs operate alongside the existing ETSI standards development structure. Focusing on speed and inclusion, and each concentrating on a very specific activity – usually a "disruptive technology" – ISGs offer a quick and easy alternative to the creation of industry fora, plus they have immediate access to the mainstream ETSI standardization process when their work is sufficiently mature. ISGs have their own membership, consisting typically of both ETSI members and non-members, set their own voting rules, decide their own work programme, and approve their own deliverables. However, they remain subject to the highly-respected ETSI IPR Policy. Only ISG members have full access to draft documents and full information about ongoing work, and thus can be sure to work in a well protected environment.

ETSI's current ISGs are all strongly research-oriented, seeking to build industry consensus that will form the foundations of ongoing development of the Future Internet (notably the "Internet of Things") and of increasingly secure communications and transactions, much of this contributing directly to EU strategies.

Standards are valuable tools for innovative business and research and development.  
Some examples:



### Satellite systems

Satellite technology represents an important innovative domain to provide standardized services. CEN works actively in some fields linking to research activities in this area. Currently, two CEN Workshops are preparing Workshop Agreements:

- EGNOS/EDAS based services for tracking and tracing the transport of goods will develop a specification for the use of such services in the case of transport of dangerous goods by road;
- Container Security and Tracking Devices, to provide a standardized approach for key performance indicators for security requirements.

### Municipal and industrial wastewater Membrane Bioreactor technology

A CEN Workshop produced a very quick publication concerning an innovative technique for municipal and industrial wastewater – membrane bioreactor (MBR) technology. The CEN Workshop Agreement improves understanding of MBR technology by defining common terms and definitions, increases comparability and transparency of products and end-user confidence in them, and should lead to reduced investment costs by interchangeable MBR systems.

### eHealth

In the “eHealth” domain, recent CEN Workshops have produced guidance material on harmonized cross-border coding schemes and traceability issues for tissues and cells to use in transplant/organ donations and also for the electronic version of the European Health Insurance Card (the former E111), to allow travellers to obtain medical care anywhere in the EU.

Planning is advanced for a new CEN activity concerning interoperability of electronic healthcare records.

CENELEC and ETSI are also involved in eHealth issues.

### Advances in chemical engineering

Standardization linked to innovation can also take place in a more formal and traditional context. One CEN Technical Committee producing European Standards has used the results of a research group in COST (European Co-operation on Science and Technology) to start drafting standards on photo-catalytic technologies. These will facilitate the use of self-sterilising and self-cleaning photoactive materials in commercial applications.



### Solar photovoltaic energy system

For years now, CENELEC has been strongly involved in innovative standardization projects through the work of CENELEC Technical Committee (TC) 82. This TC develops standards for systems and components for photovoltaic conversion of solar energy into electrical energy and for all elements in the entire photovoltaic energy system. This is done in close cooperation with our international counterpart, the International Electrotechnical Commission (IEC).

### Home and Building Electronic Systems (HBES)

Various electronic devices are used in homes, buildings and similar environments (including their immediate surroundings) for several applications relevant to the home and/or building. Over the past years, CENELEC has produced standards to contribute to the development of Intelligent Homes.

### Green Data Centres

Data centres are constructed to run as economically as possible (electrical and lightning systems must be rated for maximum efficiency). CENELEC established a technical body, which intends to align and coordinate all necessary European standardization activities. It also proposes an integrated approach concerning the design, operation and life-cycle of data centres with the focus on energy efficiency.



## Machine-to-Machine (M2M) communications

M2M will change the way people live, work and play, as wireless technologies connect billions of people and trillions of devices – ranging from remote monitoring and control to e-health, smart transportation and intelligent homes. The M2M architecture is being standardized within ETSI and will enable a broad range of M2M use cases in vertical markets such as healthcare, transportation and security. ETSI's M2M activity is attracting world-wide attention and is being supported by industry from around the globe.

## Media Content Distribution

Standardization of broadcast and telecommunications has traditionally followed different paths. Recent developments in areas such as the internet, mobile communications and broadcasting have led to a convergence of these traditional communities, in which content delivery has become common ground. Aligning the existing and diverse technical specifications is a prime requirement, as is the need to harmonize solutions for the benefit of the business communities and end-users.

ETSI's activities include producing a comprehensive set of standards and interoperability tools to enable content delivery across various distribution platforms. The work covers all major elements of the media delivery ecosystem: the networked home, the content/service provider network, the content delivery network and the media content distribution flow.

## Open Radio Equipment Interface

A new ETSI Industry Specification Group (ISG) has been created to develop an interface specification enabling interoperability between elements of base stations of cellular mobile network equipment. In general, mobile radio base stations consist of a Base Band Unit and a Radio Equipment, which, in a distributed base station architecture, is a Remote Radio Head or Integrated Active Antenna. Use of distributed Radio Equipment can lead to significant cost savings for a mobile operator, as well as offering a greater level of flexibility in network design and deployment. It can also help reduce the visual impact of the installations. The interface being defined by the ISG is an important step towards realizing these benefits through widespread deployment of distributed Radio Equipment.

## Smart Grid

The Smart Grid comprises everything related to the electric system in between any point of generation and any point of consumption.

A new informal working group was established in 2010 to respond to the European Commission expert Task Force on Smart Grids, and assess the standards aspects: the Joint CEN, CENELEC and ETSI "Working Group on standards for the Smart Grid". This group will provide an overview report including a proposed response to a forthcoming European Commission mandate.

## Electric Vehicles

The European Commission and EFTA, the European Free Trade Association, mandated the European Standards Organizations to start working on the charging of electric cars, scooters and bicycles. CEN and CENELEC have created a "Focus Group on European Electro-Mobility" – standardization for road vehicles and associated infrastructure", that will prepare an initial response to the mandate, by urgently assessing European needs and seeking to ensure that international standards meet these. The Focus Group hopes to complete its report by 31 March 2011. The Intelligent Transport community within ETSI is discussing the mandate with the Car-To-Car Consortium (C2C CC): the necessary basic communications standards are already in place but additional work may be required in response to the mandate.

# Standards facilitate innovation

The progress of innovation requires a good balance between collaboration and competition. Standardization can provide this balance.

## 10 things standards can do for innovation

- 1. Standards promote innovation**  
Standards help promote innovative products and services by building confidence among industrial users and consumers and creating a large scale market.
- 2. Standards further the creation of new markets**  
Standards can help ensure compatibility and interoperability of products and services. The end-user benefits from reduced prices.
- 3. Standards ensure quality of products**  
Standards improve the quality of products, applying state of the art technologies and techniques and at the same time ensuring safety aspects.
- 4. Standards support research**  
Standards foster competition, creating a level playing field for R&D and hence cutting R&D costs.
- 5. Standards enhance visibility**  
Standardization is essential for market penetration of R&D results, helps reduce production costs and avoids lock-in to proprietary or immature solutions.
- 6. Standards facilitate trade**  
Standards support exports by removing technical barriers to trade in the European Single Market, and globally.
- 7. Standards strengthen regulation**  
European Standards support European legislation. By implementing referenced standards, industry can meet legal requirements for placing goods on the market.
- 8. Standards increase safety and environmental protection**  
Standardizers lay down basic rules not just for safe, environmentally sound products, but also to ensure that companies make these a fundamental part of their culture in fields such as safety, consumer protection and the environment.
- 9. Standards are universally recognized**  
Standards give access to 500 million consumers. European standards align with international standards (ISO, IEC, ITU-T) as far as possible.
- 10. Standards accelerate time to market**  
Standardization is the best tool to ensure the fast introduction of innovative products and technologies at the earliest stage possible. Standardization shortens the cycle between initial concept and global market access.