

How to address standardisation in EMPIR projects

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- The EU has an **active standardisation policy** that **promotes standards** as a way to better regulation and enhance the competitiveness of European industry.
- The EU recognises **standardisation as a great tool for research development and a key channel for the dissemination of innovations.**
 - **Source : EC – DG Growth – Standardisation Policy**
- The European Standardization Organisations (ESO) **CEN/CENELEC/ETSI should encourage participation of researchers in standardisation activities.**

Source : Regulation EU n1025/2012 on European standardisation

- Result of a study from AFNOR (2008)
 - **Standardisation is a tool of competitiveness of organisations.**
 - **Build standards at the earliest possible stage provide a competitive advantage to innovators.**

Standardisation and innovation

Examples of innovations brought to standardisation

Source : AFNOR



GSM



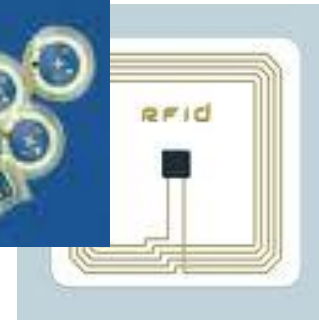
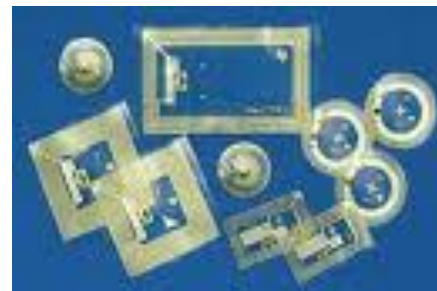
Detection of GMO



Smart card



Electric
vehicle



RFID
chip



Nanotechnologies

Standardisation - Introduction



What is a standard ?

A standard is a reference document developed by consensus , approved by a recognised body, established by all interested parties, voluntary in application, which provided common rules, guidelines, characteristics for activities and used to facilitate trade (private contract and public sector).







Who makes standard ?

Standards are created by bringing together all interested parties such as

- industry, trade federations, manufacturers, SMEs
- regulators and public authorities
- consumers organisations
- academic experts, researchers and Non Governmental Organisations

Standardisation Bodies officially recognised by EU

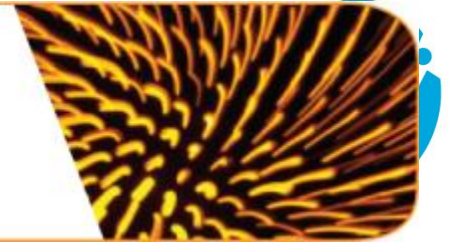
EURAMET

International level	 ISO : International Organization for Standardization	 IEC : International Electrotechnical Commission	 ITU : International Telecommunication Union
European level	<div> <div>Vienna, 1991 (>30%)</div>  CEN : European Committee for Standardisation </div>	<div> <div>Dresden, 1996 (>75%)</div>  CENELEC : European Committee for Electrotechnical Standardization </div>	 ETSI : European Telecommunications Standards Institut
Sectors	All sectors	Electricity, electrotechnical	Electronic communications
National level	The National Standardizations Bodies (NSB)		

CEN & CENELEC Standardization :

Sectors and Topics

Source : CEN-CENELEC



CEN

Bio-based products
Chemicals
Construction
Food
Heating, Ventilation and
Air Conditioning (HVAC)
Materials
Nanotechnologies
Pressure equipment
Services

CEN & CENELEC

Air and Space
Consumer products
Electric Vehicles
Energy and utilities
Health and safety
Healthcare
ICT
Machinery safety
Measurement
Medical equipment
Railways
Security and Defence
Smart Grids / Smart Meters
Transport and Packaging

CENELEC

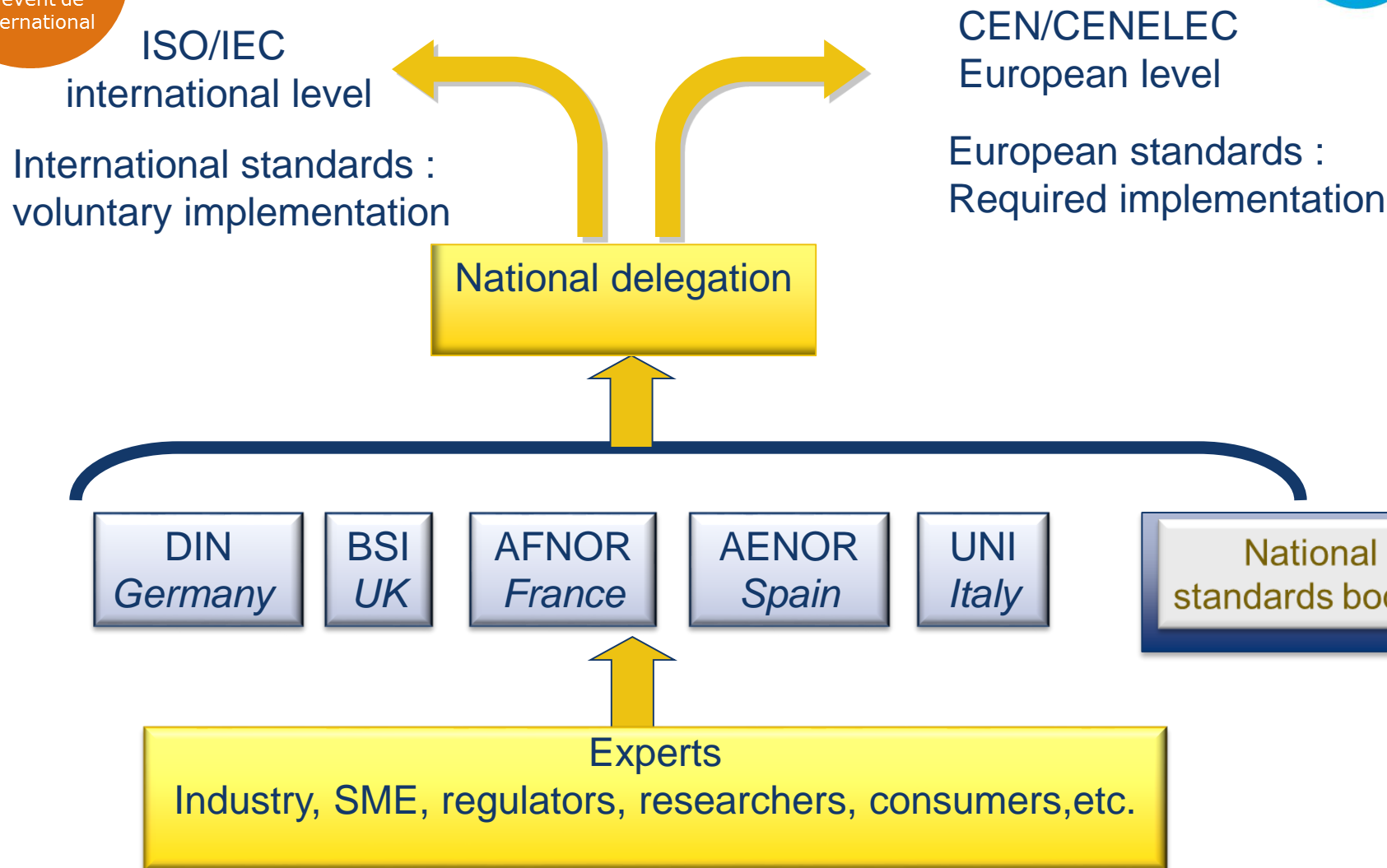
Electrical engineering
Electromagnetic
Compatibility (EMC)
Fibre-optic
communications
Fuel Cells
Household Electrical
Appliances
Solar (photovoltaic)
electricity systems

Cross-sectoral issues

Accessibility | Environmental Protection | Energy-efficiency (Eco-Design)

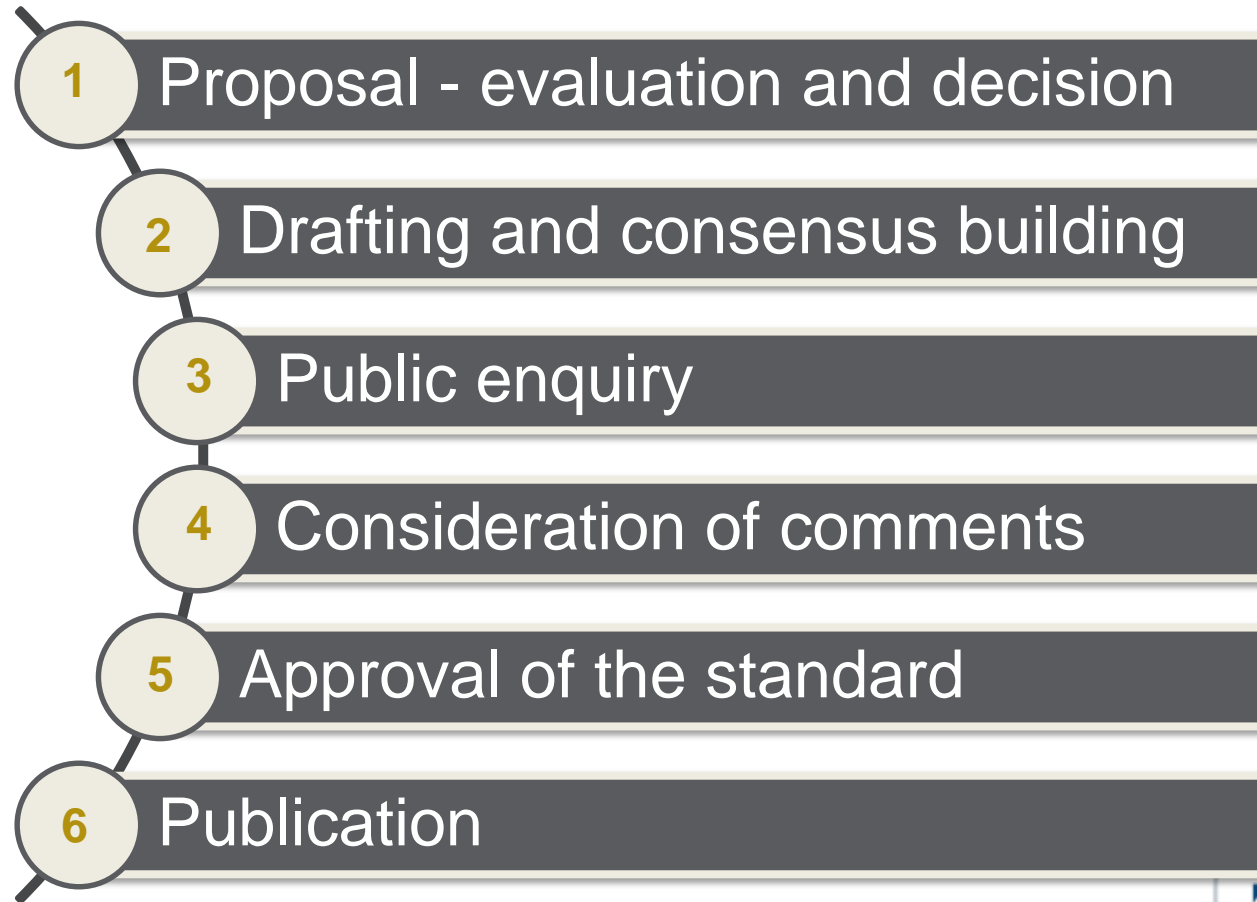
90 % des
activités de
normalisation
relèvent de
l'international

The standardisation process



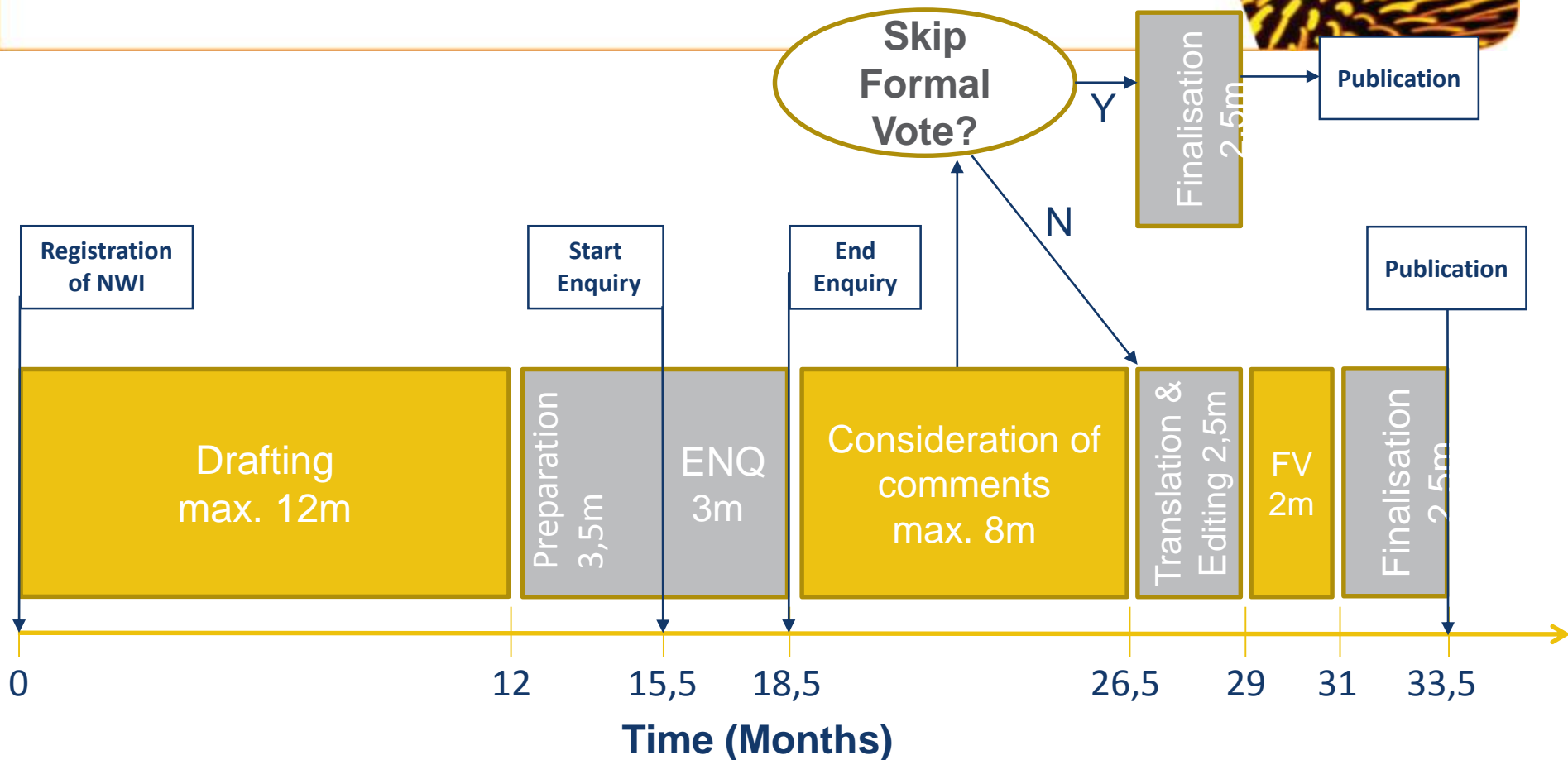
European Standard

Source : CEN-CENELEC



Detailed Timeframe

Source : CEN-CENELEC



What are the benefits of standardisation for researchers ?

Standardisation enables:

- The dissemination and exploitation of research results
- The transfer of knowledge and technologies into products and services placed in the market
- The increase of recognition and reputation of researchers
- The networking with other researchers, industrials, institutions to initiate future research

Source: CEN CENELEC STAIR; an Integrated Approach for Standardization, Innovation and Research

EMRP projects already had important impacts to standardisation and highly contributed to development of European and International standards.

EMRP outputs from EURAMET impact analysis :

- 739 inputs to 379 standards committees
- Contribution to 122 draft or published standards

Main contributions to standardisation reported are :

- Disseminating information about the JRPs to a standardisation committee :
- Contributing to ongoing standardisation work, to the development of new or revised existing standards.
- Developing new standardisation activities : proposing new standards/documents based on the research findings.

NMI/DI involved in EMRP JRPs identified some best practice to disseminate research results to standardisation :

- Consider needs of international standardization, industry, policy makers rather than focusing on your own objectives.
- Develop an extensive interaction with standard bodies at the earlier stage
- Get involved in standardisation : presence of NMI/DI in standardisation facilitates the design of the project and the transfer of results
- Think to the deliverables: white-paper/good practice guides rather than scientific papers.

(EURAMET Inquiry on 21 November 2013)

- **New activity supported in EMPIR** (Decision No 555/2014/EU)
“pre-normative and co-normative metrology research and development for priority documentary standards aiming to use the expertise of metrology institutes of the Participating States to support policy implementation and accelerate innovative products and services to market”.
- To achieve this, EMPIR introduces a new Normative call focused on R&D for standardization and a SIP call to finalise the exploitation of JRPs to standardisation.
- Standardization is expected to be included in EMPIR JRPs from :
 - TP Health, Energy, Environment, Industry.
 - TP Normative EMPIR
 - TP SIP

Focus on the EMPIR Normative Calls (2015&2016)

- To develop traceable measurement methods and metrological techniques required for standardisation, in any area
- To answer the research needs of standardisation groups
- These are JRPs (not SIPs), so they have to do research – but research aimed at standardisation.
- Participation of industry, regulators and standardisation bodies are highly encouraged in the proposals.
- First call in 2015, a NRM call is planned each year until 2020
- Same process than for the other TP calls
- Projects with fewer partners and lower eligible costs than other JRP

http://msu.euramet.org/downloads/documents/Call2016_ScopeNRM.pdf

When writing the JRP, researchers have to define the **projected early impact on relevant standards** which is **mandatory** (except for Fundamental projects).

Guide 4 « Writing JRPs » 2016 -06- 06, § 4.6.3, Section B2.c

- It concerns standards developed and published at a European or International level, by :
 - ❑ formal standards developing organisations such as ISO, IEC, CEN, CENELEC, OIML, etc.
 - ❑ or important well recognised industry standards such as IEEE.
- Specific standards : European standards developed following a standardisation request (mandate) from the European Commission (in support of an EC Directive) or standards addressing a critical need specified by an industry body .

Guide 4 « Writing JRPs » 2016 -06- 06, § 4.6.3, Section B2.c

The **early impact on relevant standards** should include:

- the dissemination activities regarding standards
- the most important relevant documentary standards for the project
- the standards bodies/committees that will receive the outputs of the project
- the existing links of the consortium with the standards bodies or the new links with the standards bodies planned to be built by the consortium.
- the partners involved in standardisation and what they plan to do.

How to include standardisation in a JRP ?

For Normative projects : actions should be undertaken the year before the call opens

For other projects : At the earlier stage of the project

- Identify existing standardisation work, screen existing standards (state of the art, etc.)
- Identify relevant TCs for your research
- Get in touch with the TC secretariat and a TC member
- Discuss with the TC the contribution from the project to feed into the TC
- Define with the TC the deliverables of the JRP

Standardisation in EMPIR

Success factors



- NMI/DI already involved in standardisation at national level, European or international level are in the best position to identify research needs and discuss ideas.
- Normative projects should be undertaken only with strong support of industrial partners and by assessing carefully the benefit for laboratory (pay attention to the costs associated when investing in this type of actions)
- Best chances to pass evaluation positively is to engage a member involved in standardisation in your consortium! (a CEN or CENELEC Member or others)
- Promote research results/outcomes of previous JRPs to standardisation group to identify opportunities to develop JRPs
- Industrial/standard community and researchers are often unaware of each other and the various options : researchers should increase their knowledge about benefits of standardization and engage discussions (attending events, training sessions, ect.)

Standardisation in EMPIR

Example of a normative project from the 2015 Normative EMPIR call

SRT-n04: [Metrology for sustainable hydrogen energy applications](#)

Objectives :

- 1. To develop hydrogen quality specifications for fuel cell vehicles, including tolerance levels for impurities in hydrogen and limits for the degradation of fuel cells performance (as per ISO 14687-2 'Hydrogen fuel - Product specification – Part 2: Proton exchange membrane (PEM) fuel cell applications for road vehicles 2012').
- 2. To develop metrological methods and validate a multicomponent instrument for hydrogen impurity analysis.
- 3. To develop and validate traceable methods for measuring the hydrogen mass absorbed in storage tanks (with reference to ISO 16111 'Developing Transportable gas storage devices - Hydrogen absorbed in reversible metal hydride'.)
- 4. To contribute to the standards development work of the key European and International Standards Developing Organisations to ensure that the outputs of the project are aligned with their needs, communicated quickly to those developing the standards and to those who will use them

A key support to prepare your normative projects :

- The STAIR EMPIR group is intended to facilitate dialogue between EURAMET and CEN/CENELEC.
- **Next STAIR EMPIR meeting** will take place on **19 October 2016 in Brussels.**
- The meeting offers a great opportunity for both communities, industrial/standardisation and researchers to come together and identify common interests.

More information



- European Commission – DG Research and Innovation
“Standards and Standardisation - A practical guide for researchers”

<https://ec.europa.eu/research/.../practical-standardisati..>

- ISO Website <http://www.iso.org/iso/home.htm>

- IEC website <http://www.iec.ch/>



To find your national standardisation body :

- CEN Members <https://standards.cen.eu/dyn/www/f?p=CENWEB:5>
- CENELEC members: <https://www.cenelec.eu/dyn/www/f?p=web:5>

CEN-CENELEC tools

Source : CEN-CENELEC

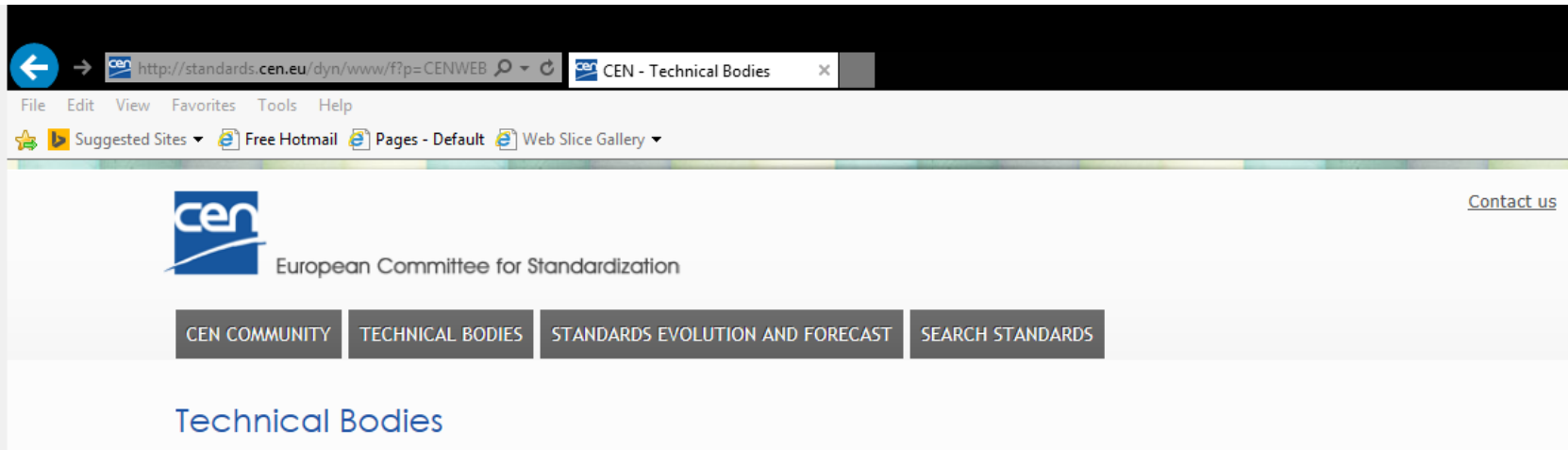


- [Horizon2020](#) guide to project proposers
- [Factsheet](#) on IPR & Standards
- Guidance [document](#) for Members on how to link with European research projects
- [Leaflet](#) aimed at the National Contact Points (NCP)
- [Brochure](#) on the role standards play in support to research and innovation
- 20 [case studies](#) highlighting successful research projects which have contributed to standardization
- 4 training videos ([How standards support innovation](#); [How standards support Horizon2020](#); [How to develop an internal strategy](#); [How to communicate with innovators](#))



Finding out about a TC's work programme – CEN - Source : CEN-CENELEC

- The technical bodies link on <http://standards.cen.eu>



The screenshot shows the CEN website interface. At the top, there is a navigation bar with the CEN logo and the text 'European Committee for Standardization'. Below this, there are four main menu items: 'CEN COMMUNITY', 'TECHNICAL BODIES', 'STANDARDS EVOLUTION AND FORECAST', and 'SEARCH STANDARDS'. The 'TECHNICAL BODIES' section is highlighted. Below the menu, the heading 'Technical Bodies' is displayed. The main content area lists several technical bodies with their respective domains and descriptions.

Technical Body	Description	Standards Count	Documents Count	Icon
CEN/SS T20	Tram- and Railway Engineering			
CEN/SS T22	Off-road vehicles			
CEN/TC 10	Lifts, escalators and moving walks	39	7	
CEN/TC 12	Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries	189	53	

Thank for your attention!

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