

# Digital in Standards:

**Supporting the  
Digital Transition through standardization**

# Introduction

The **Digital Transition** is an opportunity for Europe to boost its competitiveness in global markets.

European Standards play a key role in this ambition, seeing as they:

- 1) promote security and safety for products and services
- 2) build trust in emerging technologies
- 3) work to find consensus and enable state of the art solutions for Europe

The following materials are meant to highlight not just what exists for the future of standardization in the digital transition, but to take a look at the new and exciting fields that standardization plans to explore.

Let's first start by introducing the future of standards...



# Emerging technologies and the digital transition

The CEN and CENELEC communities are committed to help Europe reap the benefit of new technologies such as Digital Skills, Industrial Data, Artificial Intelligence, Blockchain and DLT, and Cybersecurity.

In the case of emerging technologies, the focus must be on the hyper-connectivity of products, services and systems (through IoT notably), as well as the deployment of artificial intelligence and blockchain, and the advent of quantum technologies. All these technologies challenge individual and collective approaches to the management of cybersecurity risks.

## **What is the impact of emerging technologies?**

Companies are undertaking broad digital transformation efforts, while relying on strong interdependencies in/between vertical sectors, supply-chain and shared infrastructures. These objectives, which can be achieved through standards will show results if there is a shared global ecosystem of trust.



# Digital Skills

The lack of highly qualified ICT labour affects the productivity growth, competitiveness, innovation, employment and social cohesion in Europe. Despite restructuring and job cuts in the ICT manufacturing industries in recent years, demand for ICT professionals for software development, consulting and the ICT user industries has continued to grow.

Digital and ICT technologies are critical components to ensure the continued progress of the European economy and society. Closing the gap between job seekers and vacant digital opportunities is among the main priorities of the Europe Union.

CEN has been working for some time now to identify benchmarks for the ICT professionals skills through competence frameworks and description of job profiles.

CEN/TC 428 'ICT professionalism and Digital competences' is responsible for all aspects of standardization related to developing ICT skills in all sectors, public and private. This includes activities related to the four major building blocks of ICT professionalism: competences, education, ethics, and body of knowledge.



# Industrial Data

Industrial Data supports core process or delivers insights that are used to improve the overall efficiency. This has led to many organizations saving, using, and sharing data in their own way, while they could benefit greatly from a common approach without technical barriers that would allow them to share their data with other organizations. The EU has made it clear that this field is of ever-increasing importance, stating that industrial data will be the foundation of the next wave of digitization in Europe. Nevertheless, for many industry stakeholders, it is not entirely clear how they can contribute to this.

Standards have a key role to play in contributing to the European vision of a Single Market where data can flow freely and across sectors, supporting the trustworthy development of innovative technologies, such as AI and trends like Industry 4.0, and creating a shared European infrastructure where data is a key element for success.



# Industrial Data

## Standardization in support of EU Industrial Data Strategy

There are currently several European Standards (ENs) that specifically address data or data-related topics. The development of ENs on topics such as data interoperability, data access and data security will allow CEN, CENELEC and ETSI to determine the landscape of industrial data standards in a global context.

For this reason, CEN, CENELEC and ETSI decided to initiate the discussion around European Standards supporting Industrial Data by organizing a dedicated Stakeholders' engagement workshop on the topic. Information on these results will be released after the workshop in September 2021.



# Artificial Intelligence

Even though Artificial Intelligence (AI) has existed since the 1950s, the rapid developments in the past years have turned it into one of the most promising sectors within ICT. There has been an enormous growth in investments and use of AI systems in many sectors, such as automobile, health and aeronautics, creating new challenges for both industry and society.

To ensure the development of trustworthy AI systems that respect fundamental values and human rights recognised in Europe, standardization is needed. For this reason, the new CEN-CENELEC Joint Technical Committee 21 'Artificial Intelligence', was established based on the recommendations presented in the CEN-CENELEC response to the EC White Paper on AI.

CEN-CENELEC/JTC 21 'Artificial Intelligence' identifies and adopts international standards already available or under development from the subcommittee of ISO/IEC JTC 1, SC 42 Artificial Intelligence. These activities are meant to mirror the standardization deliverables in order to address European market and societal needs, as well as underpin EU legislation, policies, principles, and values.



# Artificial Intelligence

Standards are relevant for the evolution of AI for a variety of reasons:

1. They put forward requirements and technical guidance for an emerging technology, ensuring safety and security for products and services;
2. They are intrinsically designed to be an inclusive and market-driven instrument in support of European regulation through the New Legislative Framework, benefitting the Single Market and reducing barriers to trade.

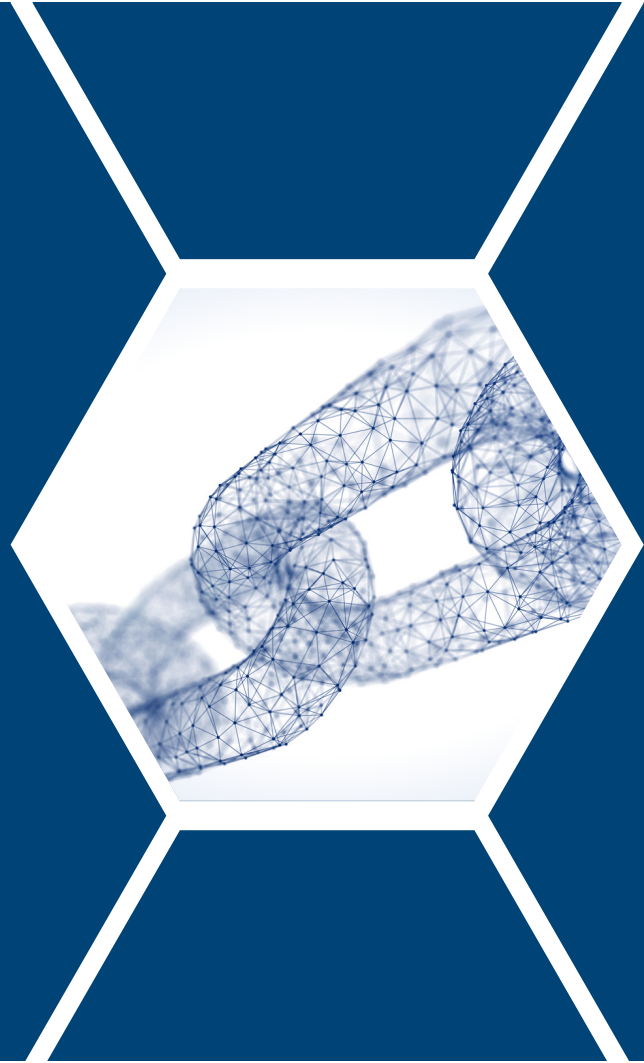
Together, standards build trust and boost innovation for all stakeholders: European businesses and SMEs, societal, environmental and policy makers. For this reason, CEN and CENELEC are ready to support the European Commission in its work related to fostering a safe and sustainable adoption of AI for the well-being of the whole EU.





# Blockchain and DLT

**CEN-CENELEC/JTC 19 'Blockchain and Distributed Ledger Technologies'** was established based on the recommendations presented in the CEN-CENELEC White Paper on 'Recommendations for Successful Adoption in Europe of Emerging Technical Standards on Distributed Ledger/Blockchain Technologies'. It identifies and adopts international standards already available or under development. The JTC works in close contact with ISO/TC 307 'Blockchain and distributed ledger technologies'. Furthermore, CEN-CENELEC/JTC 19 focuses on specific European legislative and policy requirements, in support of the development of the EU Digital Single Market.



# Cybersecurity

## Cybersecurity and Data Protection

Cybersecurity has been identified as one of the standardization priorities, since cyber-threats impact a multitude of sectors. Cybersecurity and data protection are rapidly growing and changing technical and application domains. The threats and requirements are increasing dramatically with the progress of digitalization and the rising number of critical assets digitalized and accessible online. Therefore, protection is expected from citizens but also industry and even governments.

**CEN-CENELEC/JTC 13 'Cybersecurity and data protection'** is the CEN and CENELEC horizontal technical committee that addresses these challenges. Its primary objective is to transport relevant international standards (especially from ISO/IEC JTC 1 SC 27) as European Standards (ENs) in the Information Technology (IT) domain. It also develops 'homegrown' ENs, where gaps exist, in support to EU regulations (RED, eIDAS, GDPR, NIS, etc.). These two streams of activities aims at creating a strategic portfolio of standards in Europe, which fits the European needs.



# Cybersecurity

**CENELEC/TC 65X 'Industrial-process measurement, control and automation'** is the other main provider of cybersecurity-related standards in the Operational Technology (OT) domain. It prepares standards for systems and elements used for industrial process measurement, control and automation. It has created the EN IEC 62443 series of standards for Operational Technology (OT) found in industrial and critical infrastructures, including but not restricted to power utilities, water managements systems, healthcare and transport systems.

The work programme of **CLC/TC 65X** is available [here](#).

## General Data Protection Regulation

In support of the GDPR, CEN-CENELEC/JTC 13 is currently developing prEN 17529 'Data protection and privacy by design and by default'. The standard will provide the component and subsystems developers with an early formalized process for identification of privacy objects and requirements, as well as the necessary guidance on associated assessments.



# Strategy2030

The Strategy2030 is a joint CEN and CENELEC Strategy for the next decade. This document will be an agile, living document: regularly evaluated, revised and adapted.

Through a systematic approach with the NLF (New Legislative Framework) and a strong public private partnership, European Standardization has become a system that enables a well-functioning Single Market.

This unique system uses the Single Standards Model, which means that one European standard replaces 34 national standards throughout Europe. European Standards are intrinsically designed to be inclusive and builds a consensus for state of the art solutions.

**Our Vision:** We build a safer, more sustainable and competitive Europe through international standardization.

**Our Mission:** We use our networks to build consensus across industry and society in order to generate trust, stimulate market access and drive innovations for a better life.



## About CEN and CENELEC

CEN (European Committee for Standardization) and CENELEC (European Committee for Electrotechnical Standardization) are recognized by the European Union (EU) and the European Free Trade Association (EFTA) as European Standardization Organizations responsible for developing standards at European level, as per the EU Regulation 1025/2012. The members of CEN and CENELEC are the National Standardization Bodies and National Electrotechnical Committees of 34 European countries. European Standards (ENs) and other standardization deliverables adopted by CEN and CENELEC, are accepted and recognized in all of these countries. European Standards (ENs) contribute to enhancing safety, improving quality, facilitating cross-border trade and strengthening the European Single Market. They are developed through a process of collaboration among experts nominated by business and industry, research institutes, consumer and environmental organizations, trade unions and other stakeholders. CEN and CENELEC work to promote the international alignment of standards in the framework of technical cooperation agreements with ISO (International Organization for Standardization) and the IEC (International Electrotechnical Commission).

## How to get involved

Participation in the standardization process allows stakeholders to have a say on the content of draft standards and enables them to be better informed about developments in standards relevant to their area of interest or sector of activity. All stakeholders, wishing to participate in CEN activities should contact their CEN Member (National Standardization Body - NSB) or CENELEC Member (National Committee - NC) in their country. By contacting the NSB or NC, stakeholders can either participate in the national mirror committee responsible for providing input to the relevant Technical Committee (TC) at European level, or be put forward by their NSB/NC to be an active member of a European Standardization Committee/Working Group.

A full list of CEN Members and CENELEC members can be found at: [www.cencenelec.eu](http://www.cencenelec.eu)  
European or international organizations wishing to participate in standardization activities at European level may apply to become a Partner or Liason Organization of CEN and/or CENELEC.

For more information, please contact: [partners@cencenelec.eu](mailto:partners@cencenelec.eu)



CEN - European Committee for Standardization  
CENELEC - European Committee for Electrotechnical Standardization  
Rue de la Science 23 - 1040 Brussels - Belgium - [info@cencenelec.eu](mailto:info@cencenelec.eu)

[www.cencenelec.eu](http://www.cencenelec.eu)