



European Standardization Organizations

# Digitalization and Quality Infrastructure - Standardization focus

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# Key messages

- A bit of history...
- System approach
- Facing many challenges
- Responding & evolving



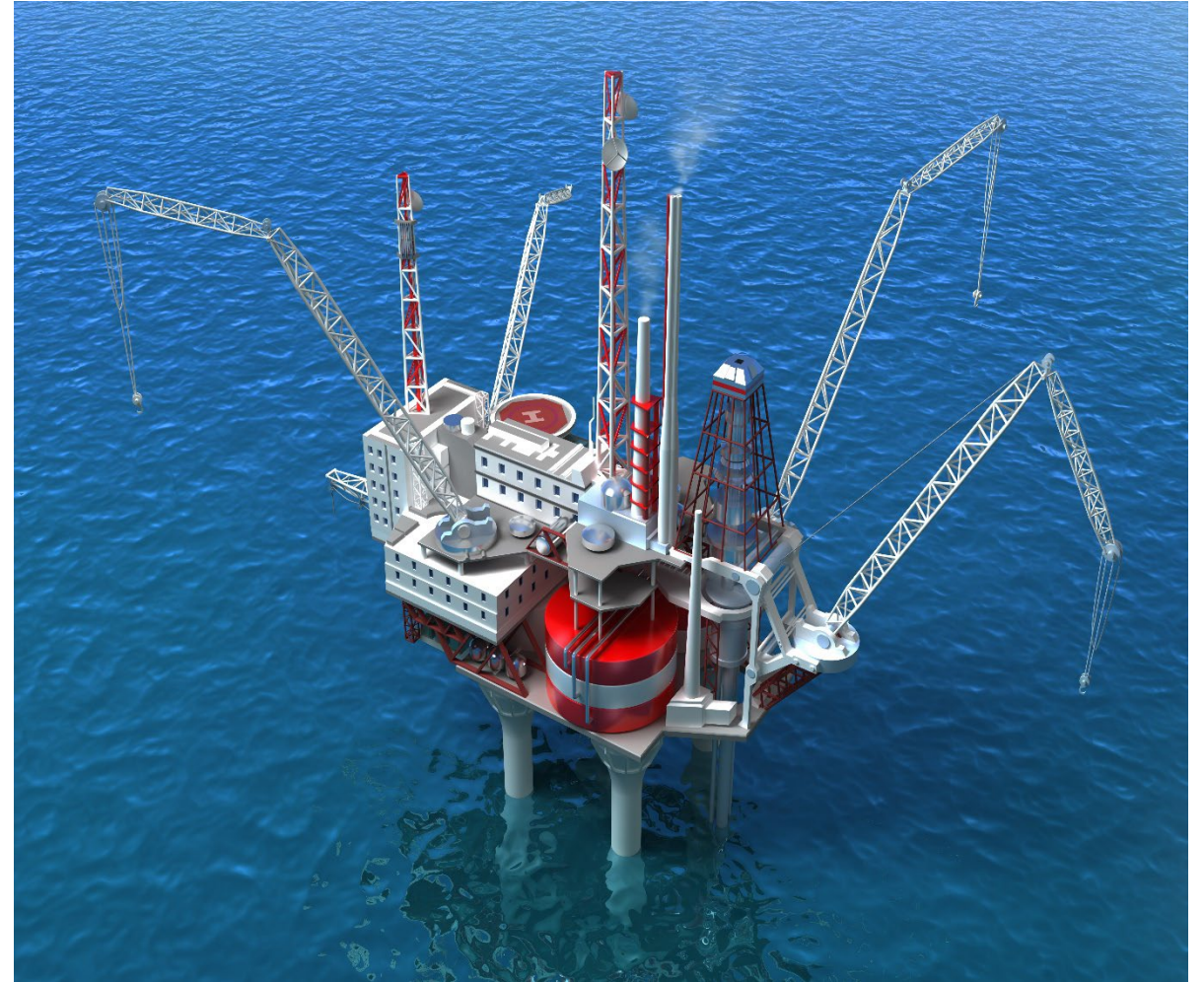


# Life used to be simple.....





# ...then a bit more complicated

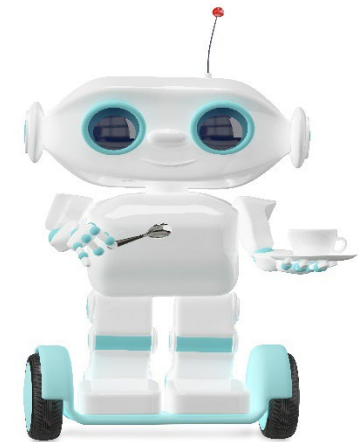




# So, industry & standardization became close...



# Today, focus on standardization comes from many angles...





# ....and perspectives...



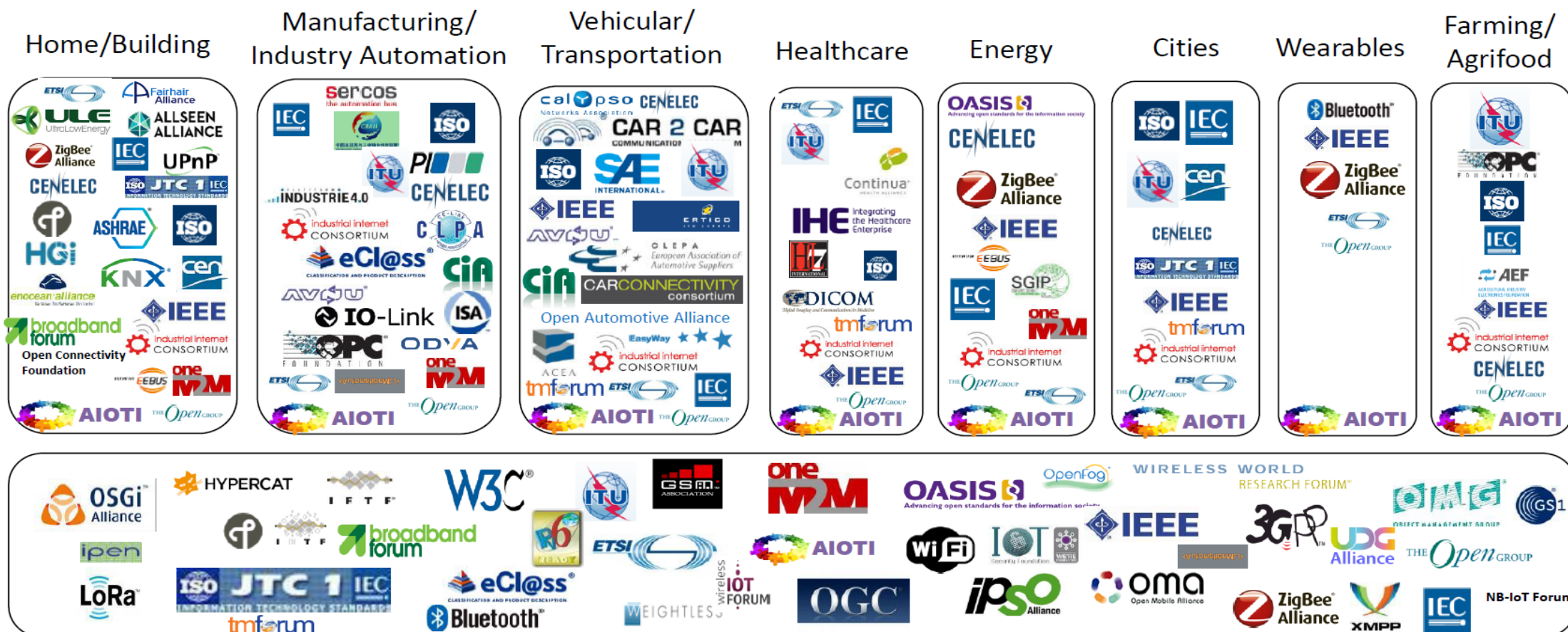


# Standards...only one part of the picture





# Standardization Bodies Supporting Digital Transformation



Horizontal/Telecommunication

Source: AIOTI WG3 (IoT Standardisation) – Release 2.6



# Many challenges....



**Ever shorter** time to market & faster innovation

**Digital transformation** of industry

Private R&D, **outstripping** publicly-funded R&D,

**Young generation** of researchers & innovators in start-ups

Companies going **direct to market**

**Competing priorities:** go green – digitize – innovate to compete – lead/keep up/catch up

**Global challenges** – security, climate change, energy, social cohesion.....



# Specific fields of competence



## Many business sectors



## Electrotechnology



## Electronic Communications



*And many common topics*

CEN, CENELEC & ETSI recognised as **European Standardization Organizations** ([Regulation EU 1025/2012](#))



# CEN and CENELEC National Members



**43** National  
Standardization  
Organizations  
from **34**  
countries



# Standardization landscape

► International



► Regional (European)



► National





# SECTORS



Chemicals



Construction



Consumer



Defence and Security



Digital society



Electrotechnology



Energy and Utilities



Food and Agriculture



Healthcare and  
Health and Safety



Household appliances  
and HVAC



Mechanical and machines



Mining and metals



Services



Transport, vehicles  
and packaging

# TOPICS



Accessibility



Artificial Intelligence



Ecodesign /  
resource efficiency



eMobility



Energy efficiency  
and Management



Environment and  
sustainability



Personal Protective Equipment



Public Procurement



Smart grid



Smart house



Smart metering



Quantum Technologies

# A unique system

European Standard (EN)

1x



=

34x

National standards (XX EN)

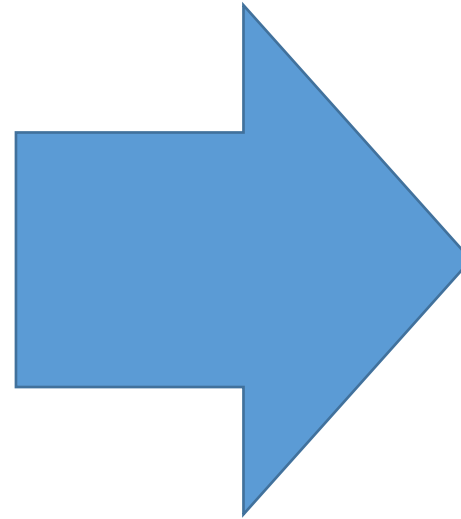


Standards supporting free circulation of goods in the EU and beyond  
(600 million consumers)



# Markets & Quality Infrastructure

Standards  
Certification  
IPR  
Technology  
conformity  
Measurement  
Training  
Policy  
funding



**MARKET**

## Standards define

- Terminology
- Assessment methods (testing, measurement)
- Product & system requirements
- Design Services

## Supporting

- Metrology
- Conformity Assessment





# Digital transformation – what is it?

- Major change in how we live, interact, work & do business.
  - Gathering & conversion of data into countless digital solutions
- ➔ unprecedented opportunities for businesses to become more efficient, develop innovative products & services.

## But...

- Digital transition of societies & economies does not come without costs and risks
- many applications raise concerns: transparency, privacy, security, trust, bias....

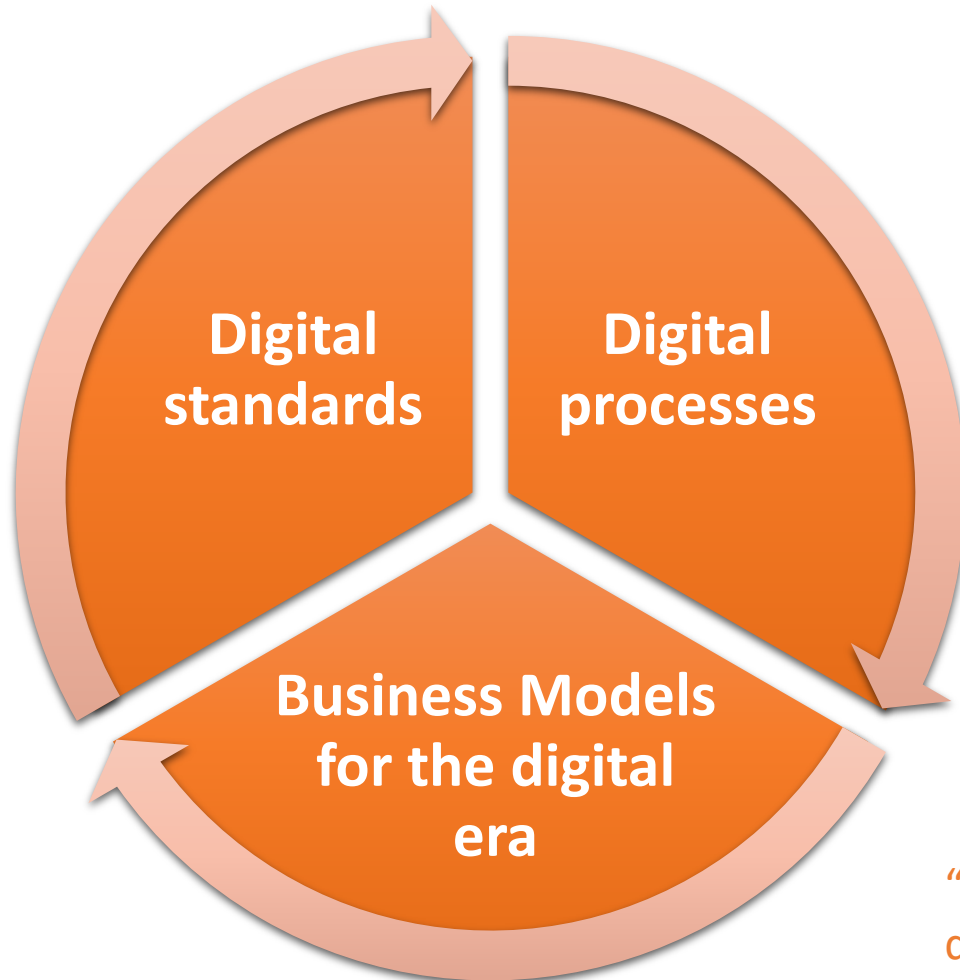
## 5 Goals

1. EU and EFTA recognize and use the **strategic value** of the European standardization system
2. Our customers and stakeholders benefit from **state-of-the-art digital solutions**
3. Increase the **use and awareness** of CEN and CENELEC deliverables
4. The CEN and CENELEC system to be the **preferred choice** for standardization in Europe
5. **Strengthen our leadership and ambition at the international level**





## Goal 2 Our customers benefit from state-of-the-art digital solutions



1. Produce standards fit for the digital economy
2. Transform our standards development processes
3. Transforming our business models for the digital era

“develop and deliver state-of-the-art digital solutions, to drive the creation and use of standards”

# Smart standards project

Aims: create standards that meet needs of users

- Break up content into constituent pieces
- 'Tag' information: definitions, tables, formulae, requirements, limits,
- Aim for Level 3 machine readable standards, defined by IEC SMART Standards Utility Model (adopted by ISO, CEN-CENELEC)
- Generic, holistic framework for Level 3 machine readable standards, including information model, tools, processes, legal & commercial

Collaborating with ISO & IEC - running similar projects - represent European interests at international level.



# Smart standards: Use cases

- Referenced standards & normative content: *to see all necessary requirements at a glance.*
- Identify changes to standards: *to adapt my own application.*
- Search directly in normative content: *to find specific types of content.*
- Identify all relevant standards for my product: *to identify all requirements applicable to my product.*
- Apply all normative requirements for my product: *to make direct use in my manufacturing environment.*
- Know which standards content supports me with legal requirements: *to ensure my product is legally compliant.*

# Project 2: Smart Standards



Document-  
centric

Document  
-centric

Paragraph  
(clause) -  
centric

Sentence  
(provision) -  
centric

Data -  
centric



ISO SMART



SG 12



# Standardization for emerging technologies

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- ▶ CEN-CLC/JTC 19 Blockchain and Distributed Ledger Technologies
- ▶ CEN-CLC/JTC 20 Hyperloop systems
- ▶ CEN-CLC/JTC 21 Artificial Intelligence
- ▶ CEN-CLC Focus Group Quantum Technologies
- ▶ CEN-CLC Focus Group Organ on Chip



# Standards & Technology Readiness Levels (TRL)

## Knowledge development

## Technology development

## Business development

### TRL 1

Basic principles  
observed

### TRL 2

Technology  
concept  
formulated

### TRL 3

Experimental  
proof of  
concept

### TRL 4

Technology  
validated in lab

### TRL 5

Technology  
validated in  
relevant  
environment

### TRL 6

Technology  
demonstrated  
in relevant  
environment

### TRL 7

Prototype  
demonstration  
in operational  
environment

### TRL 8

System  
complete and  
qualified

### TRL 9

Actual system  
proven in  
operational  
environment

## Semantic standards

*facilitate efficient  
communication in  
basic research  
investigating new  
technologies*

## Measurement & testing standards

*allow progress  
towards first  
product-related  
developments*

## Interface standards

allow the  
interoperability of  
components  
integrated into  
product or process  
technology

## Product & service specific standards

*define the  
characteristics of a  
product/service and  
their performance  
thresholds (such as  
quality and safety)*

*Thank you for your attention*

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