Standard Norge

# The NORSOK journey

## From paper to digital standard development

**CYS Standards Roadshow, Cyprus 2024**

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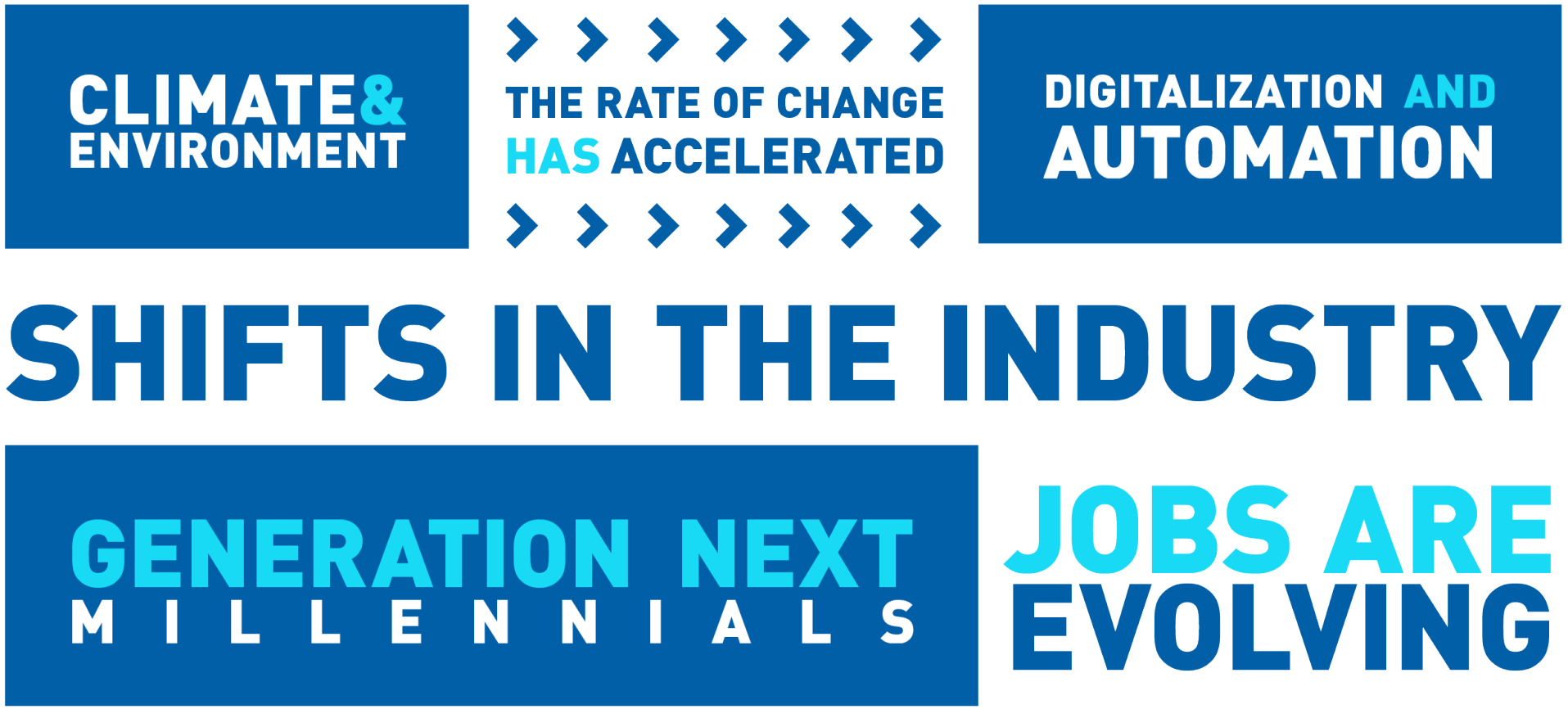
# From paper to digital standard development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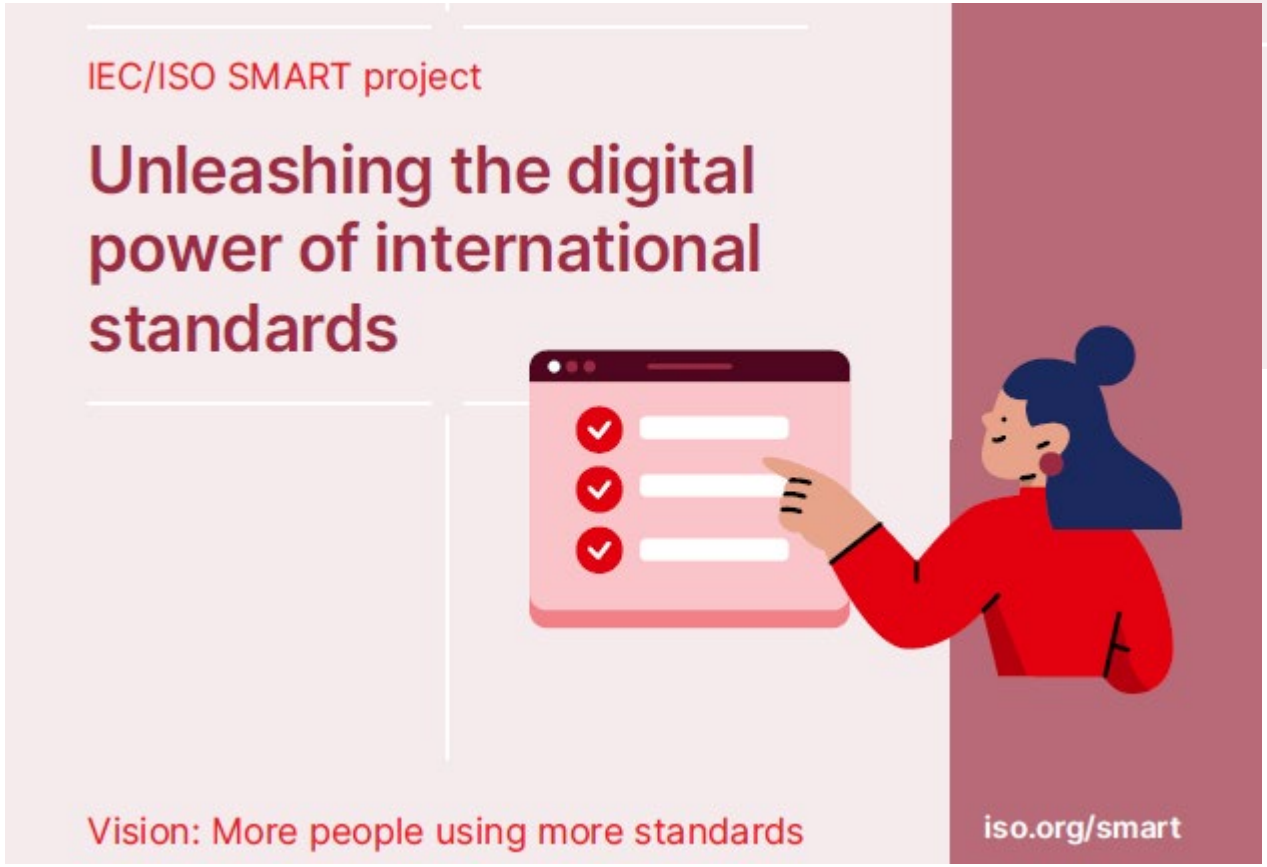
ENVIRONMENT
THE RATE OF CHANGE
HAS ACCELERATED
DIGITALIZATION AND
AUTOMATION
SHIFTS IN THE INDUSTRY
GENERATION NEXT
MILLENNIALS
JOBS ARE
EVOLVING

# NORSOK standards

- NORSOK standards are industry standards for the oil and gas industry similar to API standards
- They are developed and maintained by the Norwegian oil and gas industry and used worldwide
- NORSOK standards were developed where ISO, IEC and CEN/CENELEC did not provide adequate provisions for our climate, safety and project needs
  - There are 70 unique NORSOK documents
  - Ten ISO and IEC documents are based on former NORSOK standards
- NORSOK standards were not developed where other industry standards, e.g. API and DNV, provided acceptable guidance and level of provisions
- Several NORSOK standards are referred to by regulating bodies

# ISO/IEC SMART

- 2025-01-01 – OSD for all ISO  projects
- Smartification – post processing

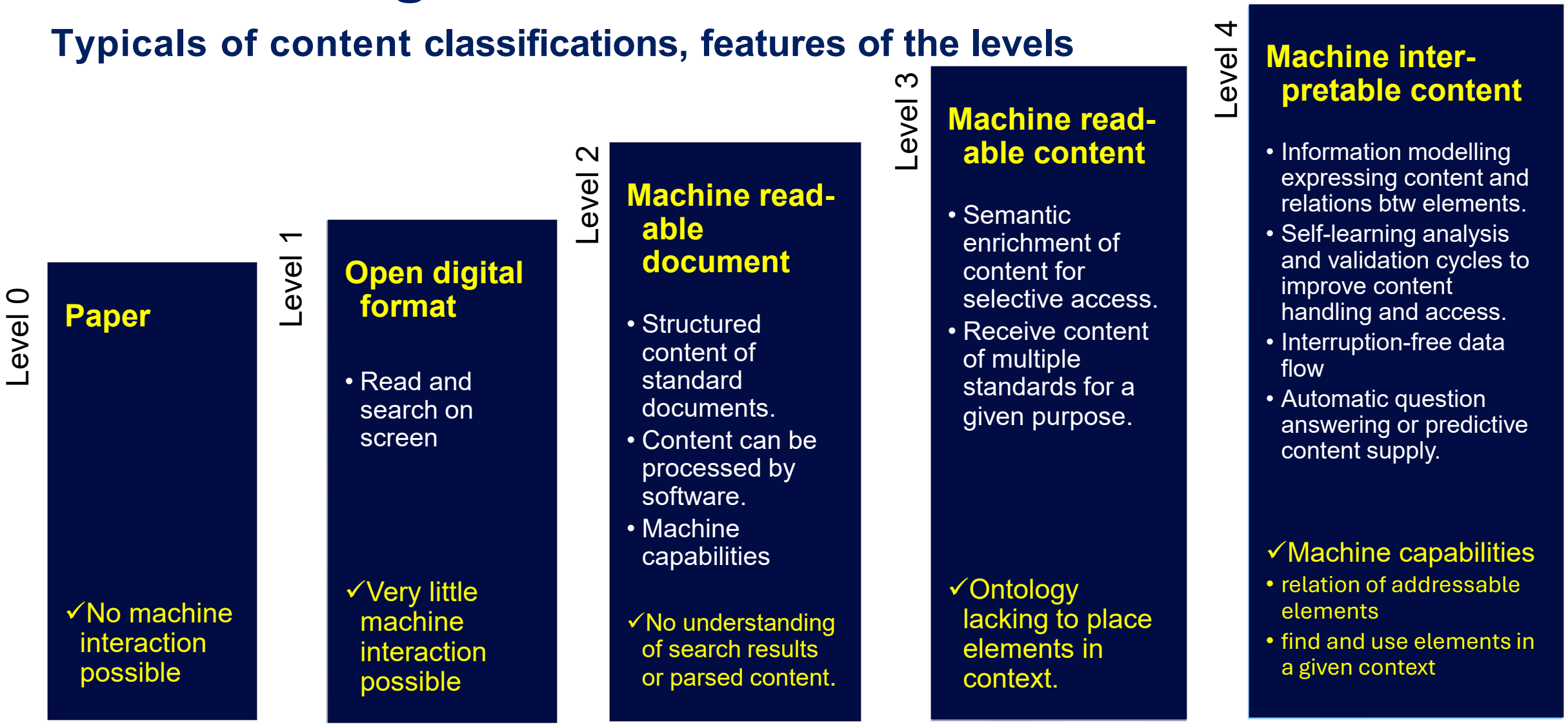

https://www.iso.org/smart

# CEN/CENELEC SMART

- CEN/CENELEC is building a layer on top of OSD
  - Marking up content
- Pilots may be granted access from November 2024
  - CEN Smart documents will not be published before 2025-Q4
- Standards Digital is developing the overlay
- Several countries has started to develop SMART content for their national documents
  - https://experts.cen.eu/key-initiatives/smart-standards/

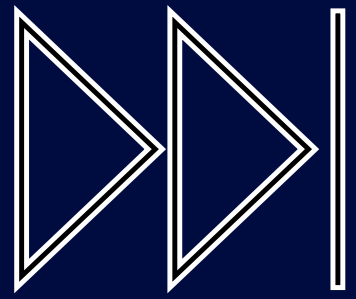
# Levels of digitalisation

## Typicals of content classifications, features of the levels



# 2

# SMART content



# Better standard development

The business goals:

- developing documents in XML editor without using MS Word!
- structure and digitalize the content providing
  - ✓ better / more consistent content
  - ✓ better publication process
  - ✓ better products
  - ✓ better use

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# What are the advantages with XML

## Editing in the XML editor

Experts focus on content and structure, not the lay-out

Improved collaboration

The editing process is faster

The experts define the content for all end users

ISO Dir 2 editing rules included in the editor

Better **content**

## Publishing directly from XML

Styling is fixed and automated

There is a single source for all formats (PDF, ePub, Online)

Not possible to serve special wishes from project teams

Better **publishing**

## Production of advanced products

Sophisticated products can be generated e.g.:

- redline versions
- online reading with commenting
- flexible access to the content

Better **products**

## Import of XML content

End-users import raw XML without risking introducing errors

Software providers can use the XML- content in their products

Changes can be identified automatically

Better **use**

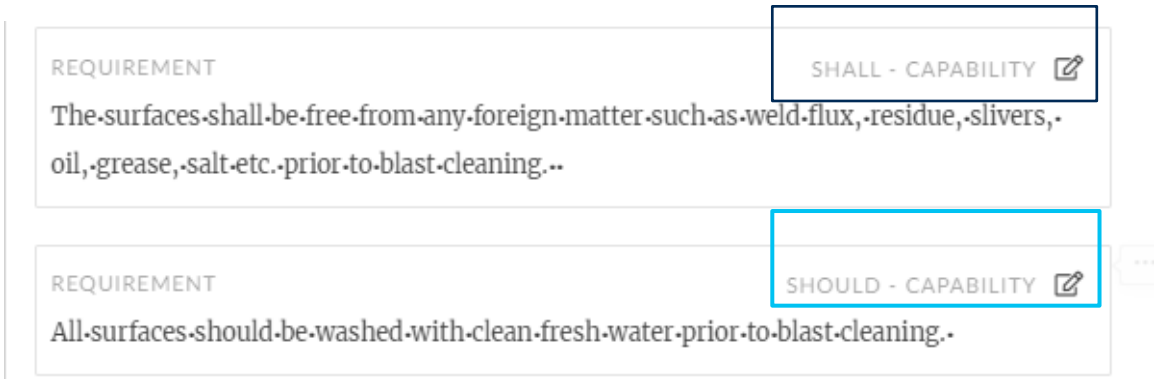
Photo: Pixabay

# The NORSOK pilot project - how

- Provisions were marked-up in Authoring
  - no modifications allowed
  - reflect the published document 1:1
- Verification of markup by committee experts

# HOW - mark up provisions

- NORSOK M-501:2012 was shared with IOGP
  - All provisions were tagged
  - Provisions are easily identified
  - *Provisions are statements with "shall, should and may"*
  - *Can be used in design tools in companies*




# Why – verification and traceability

- XML provisions gets a GUID
- Data models need
  - singular
  - measurable, and
  - verifiable provisions
- Transformed, digitalised and referred provisions
  - increased efficiency, quality and safety in project execution and operation of plants
- Traceability between revisions

Photo: Adobe Stock

Photo: Adobe Stock

# Challenges & main issues

- Content
  - written to be read by a human
  - from top to bottom
- Provisions are not singular neither measurable or verifiable
  - often related as parent- child
- Quality checks

# What is next, ontologies?

- ISO/TC 184/SC 4 provides several standards to model large scale industrial data
  - Industrial data ontologies (IDO)

- Testing if end users can benefit from systematic content descriptions
  - NORSOK M-501 *Surface preparation and protective coating* and
  - NORSOK M-004 *Piping and equipment insulation*


Photo: Adobe Stock

# Sharing digital content and IPR

Operators (and others) want to extract requirements from standards in their purchasing processes and internal management systems

All standardization bodies need to find a license model that permits content to be used legally in company systems that do not violate intellectual property rights (IPR) of the document issuing bodies

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