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# New fields of standardization

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# When the wind of change blows, some build walls and others windmills



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## And what does standardization do?



# Historical steps in standardization

## 2<sup>nd</sup> Industrial revolution

- 1918: German industry standard (DI Norm 1)
- defines dimensions and materials for conical pins holding machine parts together
- **Economic advantages through standards:** mass production, greater accuracy, faster and cheaper procurement



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# Historical steps in standardization

## Strengthening Europe by single market

- 1992: New Approach
- Legislation harmonized by EU: rough framework
- Product safety requirements: **flexible standards/state of art**
  
- **Economic advantages through standards:** facilitating trade and strengthening the European economy in competition with international markets



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# Historical steps in standardization

## 4<sup>th</sup> Industrial revolution and globalization

- **Companies and contractual partners:**
  - need consistent, international (contractual) requirements
  - demand certified systems
  - offer associated services
  - need qualification
- **Innovation:** needs guide rails during development and market launch
- **Digitalization:** manufacturer-operator responsibilities cannot be clearly distinguished; safety and security/cybercrime



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# Historical steps in standardization

## 4<sup>th</sup> Industrial revolution and globalization

- **Regulation:**
  - guide e.g. new forms of work and innovation
  - needs support for (technical) details
  
- **OHS:** aims to promote health and safety



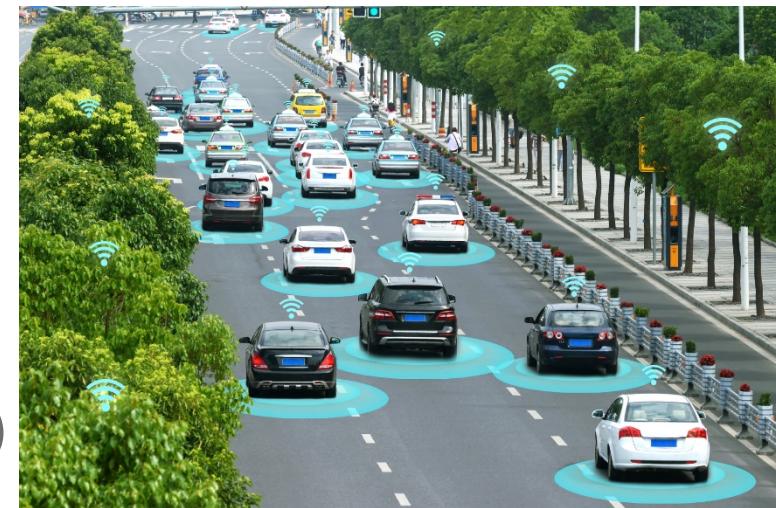
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# Wall or windmill? Management standards

Companies and contractual partners: need common basis

- ISO/TC 283 “OHS”
  - OHS management standard ISO 45001
  - SMEs: implementation of ISO 45001 (ISO 45002)
  - Psychological risks at the workplace (ISO 45003)
- Human resource management
  - Workforce (ISO 30416)
- Road traffic safety (ISO 39001)
- Good practice: commuting safety management (ISO 39002)



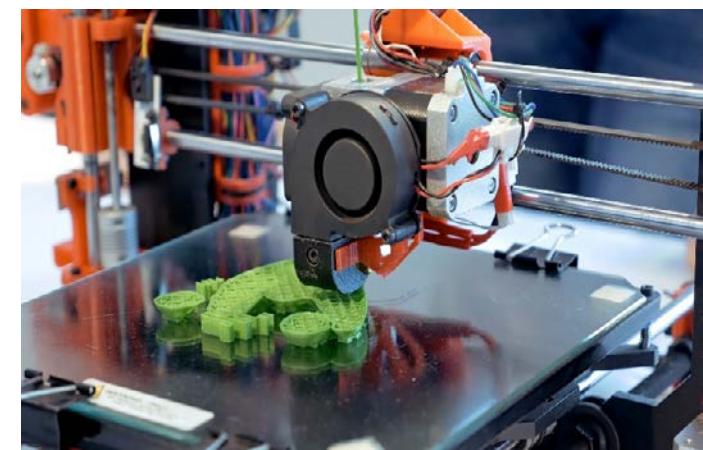
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# Wall or windmill? 3-D printer

Innovation: needs guide rails (security, investment..)

- Additive layers of hazardous plastics, quartz sand, metals
- Software/hardware: responsibility for safety?
- ISO/TC 261: Additive manufacturing – Environmental, health and safety – metallic feedstocks
- Coherence with OHS regulation (risk analysis, hazardous substances, fire/explosion risks)

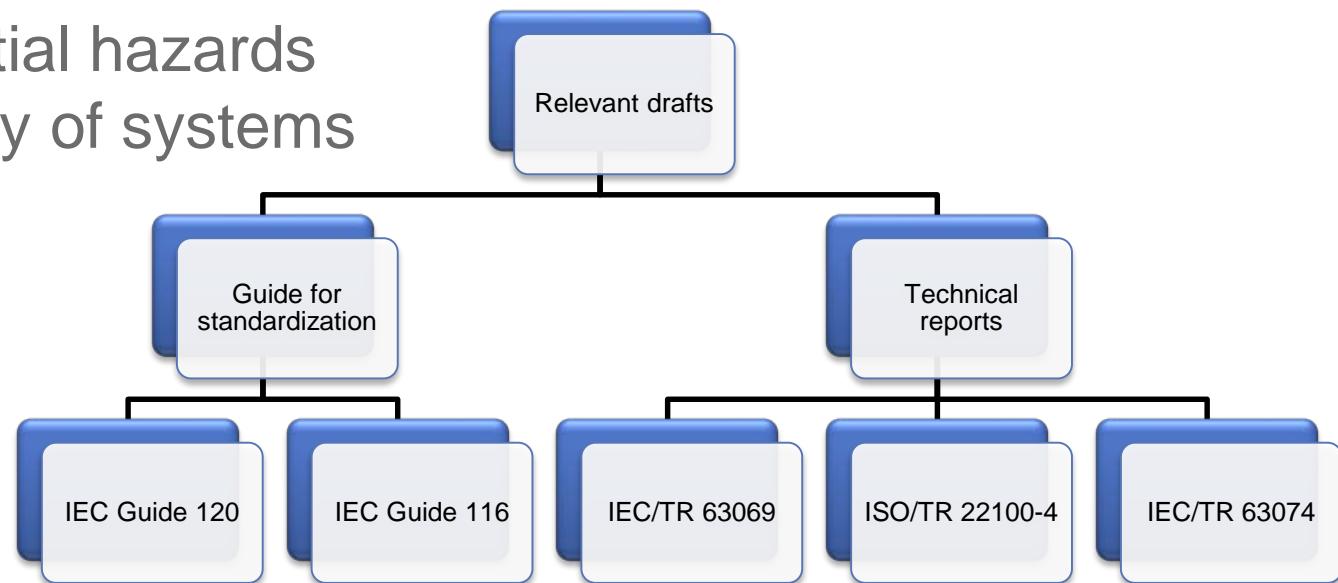


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# Wall or windmill? Safety and security

- **Digitalization:** manufacturer-operator cannot be clearly distinguished; safety and security
  - Work equipment is increasingly networked
  - strong increase in automation
  - new potential hazards
  - vulnerability of systems





# Wall or windmill? Sharing economy standards

**Regulation:** needs support; e.g. for new forms of work

- ISO/TC Sharing economy, e.g. for clickworkers, crowdworkers, flexible work arrangements
- ISO standard to support honesty, transparency, **safety, security** and healthy expansion of new forms of work



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# Wall or windmill? Ethical aspects

All stakeholders: ethical limits of digitalization

- humanoid and self-learning robots
- avatar-based software
- AI and responsibilities
- highly autonomous systems
- ...



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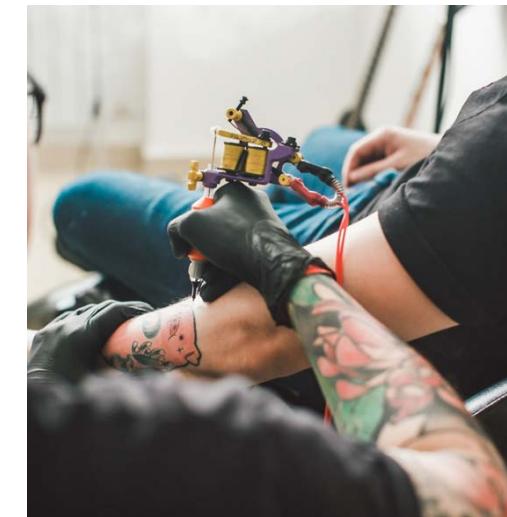
- DIN/DKE Roadmap: “Standardization Roadmap on Ethical Aspects”: [www.din.de/en/innovation-and-research/artificial-intelligence/ai-roadmap](http://www.din.de/en/innovation-and-research/artificial-intelligence/ai-roadmap)



# Wall or windmill? Service standardization

OHS: aims to promote H&S

- Tattooing – Safe and hygienic practice (EN 17169)
- Specifies hygiene requirements before, during, after tattooing
- Gives guidelines
  - for tattooists and interaction with clients and public authorities
  - procedures **to ensure optimum protection of client, tattooist and others in tattoo work area**



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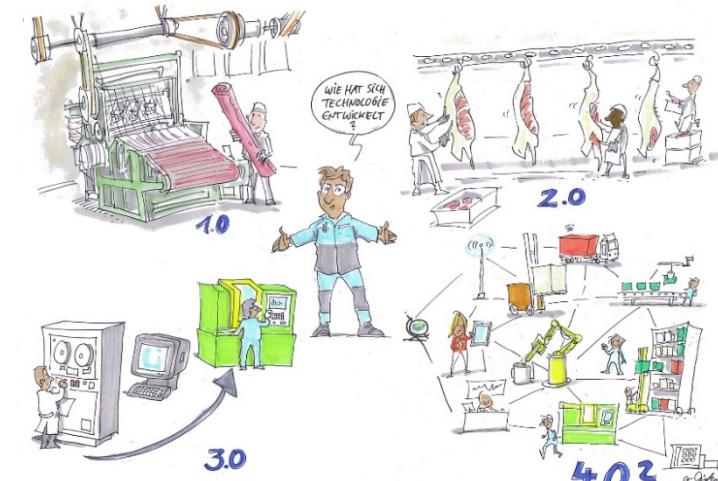


# Walls or windmills?

- New (OHS-relevant) standardization topics
- Management, services, qualification
- Ethical and social aspects
- Increasing ISO standardization

And

- Acceleration (DIN 18.0)
- Standardization deliverables (CEN workshop agreements - CWA...)
- Consortial papers



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# Walls or windmills?



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OHS must **decide** whether it wants to take advantage of standardization developments **or not.**

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