The international standards landscape

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December 2020

Agenda

- Why standardize
- ISO/IEC JTC1 SC42
- BSI
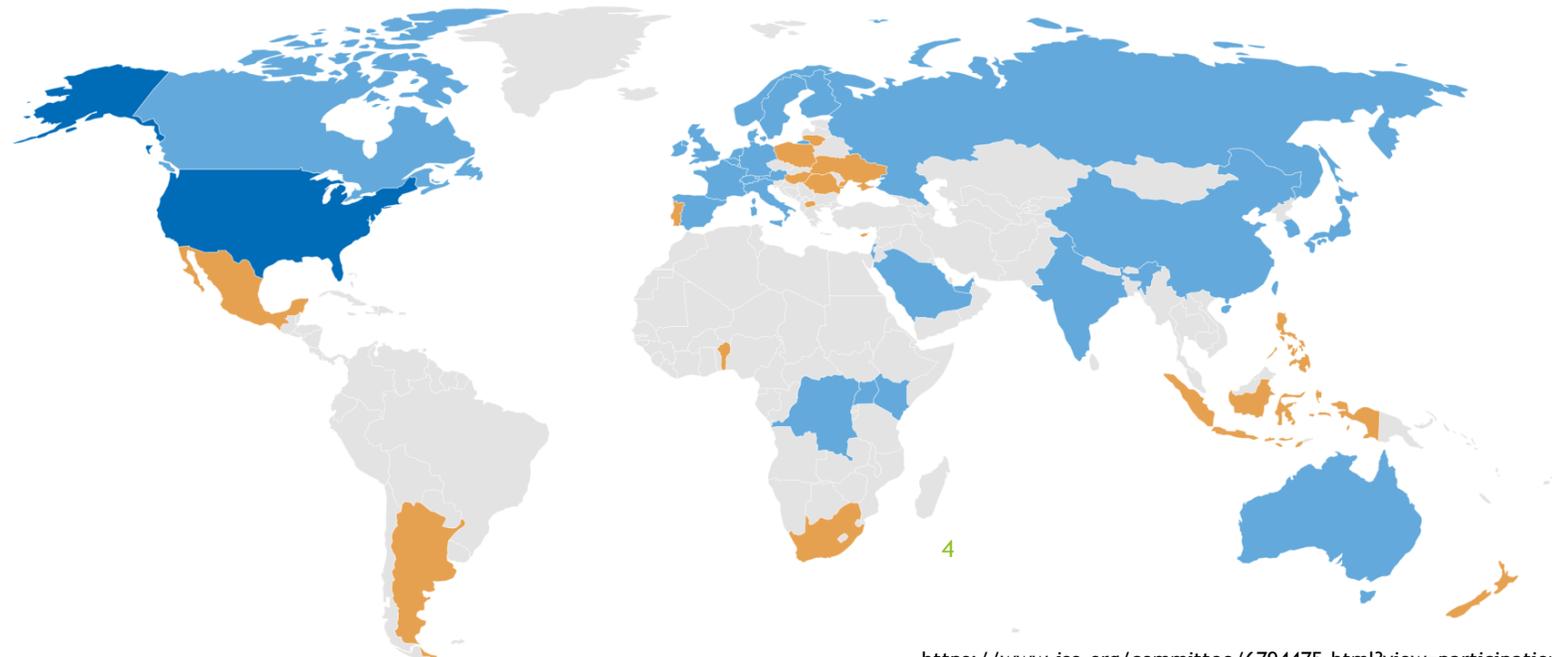- Europe

Why standardize?

- ▶ Set language
- ▶ Define good practice
- ▶ Market adoption
- ▶ Soft law/soft power
- ▶ Complement or support policy and regulation

ISO/IEC JTC1 SC42

Logo sourced from blog,iec.ch

- ▶ Established since early 2018
- ▶ 31 participating members
- ▶ 16 observing members
- ▶ 5 WGs
- ▶ 1 JWG with SC40
- ▶ 6 published standards
- ▶ 31 standards under development

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ISO/IEC JTC1 SC42 WG1

- **Foundational standards**

- Artificial intelligence concepts and terminology [22989]

- Framework for AI Systems using machine learning [23053]

- Artificial intelligence management system [42001]

ISO/IEC JTC1 SC42 WG2

- **Data**
- Big data
  - Overview and vocabulary [20546]
  - Reference architecture [20547]
- Data quality for analytics and ML [5259]
- Process management framework for Big data analytics [24668]

ISO/IEC JTC1 SC42 WG3

- **Trustworthiness**
- Overview of trustworthiness in Artificial Intelligence [TR 24028]
- Bias in AI systems and AI aided decision making [TR 24027]
- AI risk management [23894]
- Assessment of the robustness of neural networks [24029]
- Overview of ethical and societal concerns [TR 24368]
- Functional safety and AI systems [TR 5469]
- Quality model for AI systems - Systems and software Quality Requirements and Evaluation (SQuaRE) [5059]
- Roadmap group
- Objectives and methods for explainability of ML models and AI systems

ISO/IEC JTC1 SC42 WG4

- **Use cases and applications**
- AI use cases [TR 24030]
- AI system life cycle processes [5338]
- Guidelines for AI applications [5339]

ISO/IEC JTC1 SC42 WG5

- **Computational approaches and computational characteristics of AI systems**
- Overview of computational approaches for AI systems [TR 24372]
- Assessment of Machine Learning Classification Performance [TS 4213]
- Reference Architecture of Knowledge Engineering [5392]
- Ad-hoc Ontologies, Knowledge Engineering/Representation

ISO/IEC JTC1 SC42 JWG1

- **Governance implications of AI**

- Joint WG between SC42 and SC40 [IT Service Management and IT Governance]

- Governance implications of the use of artificial intelligence by organizations [38507]

Artificial intelligence management system

- 42001

- requirements and guidance for establishing, implementing, maintaining and continually improving an artificial intelligence management system within the context of an organization

- helps the organization to develop or use artificial intelligence responsibly in pursuing its objectives, and to meet applicable regulatory requirements, obligations related to interested parties and expectations from them

- Determination of organisational objectives, stakeholder involvement, and organizational policies

- Management of risks and opportunities

- Processes to address identified risks and manage issues

- Documentary evidence of its responsibility and accountability regarding use and development of AI

- Certification

British Standards Institute ART/1

- Mirror the work of ISO/IEC/JTC 1/SC 42 as well as produce independent national portfolio of work

- Multi-stakeholder committee

  - Wide ranging disciplines

  - Broad representation – start-ups, academia, consultants, large organizations, Women in AI, NPL, consumer interest group, government departments

- The UK is very active on work in concepts and terminology, data, bias, governance

- Numerous editorship roles

- The committee have a deep interest in trustworthiness

Europe

CEN/CENELEC FG AI

Establishing a Joint TC on AI