

AI and Quality

Who am I?

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Convenor, ISO/IEC/SC42 Joint Working Group 2 (Testing AI)

Project Leader:

ISO/IEC 25059:2023 - Software engineering — Systems and software Quality Requirements and Evaluation (SQuaRE) — Quality model for AI systems

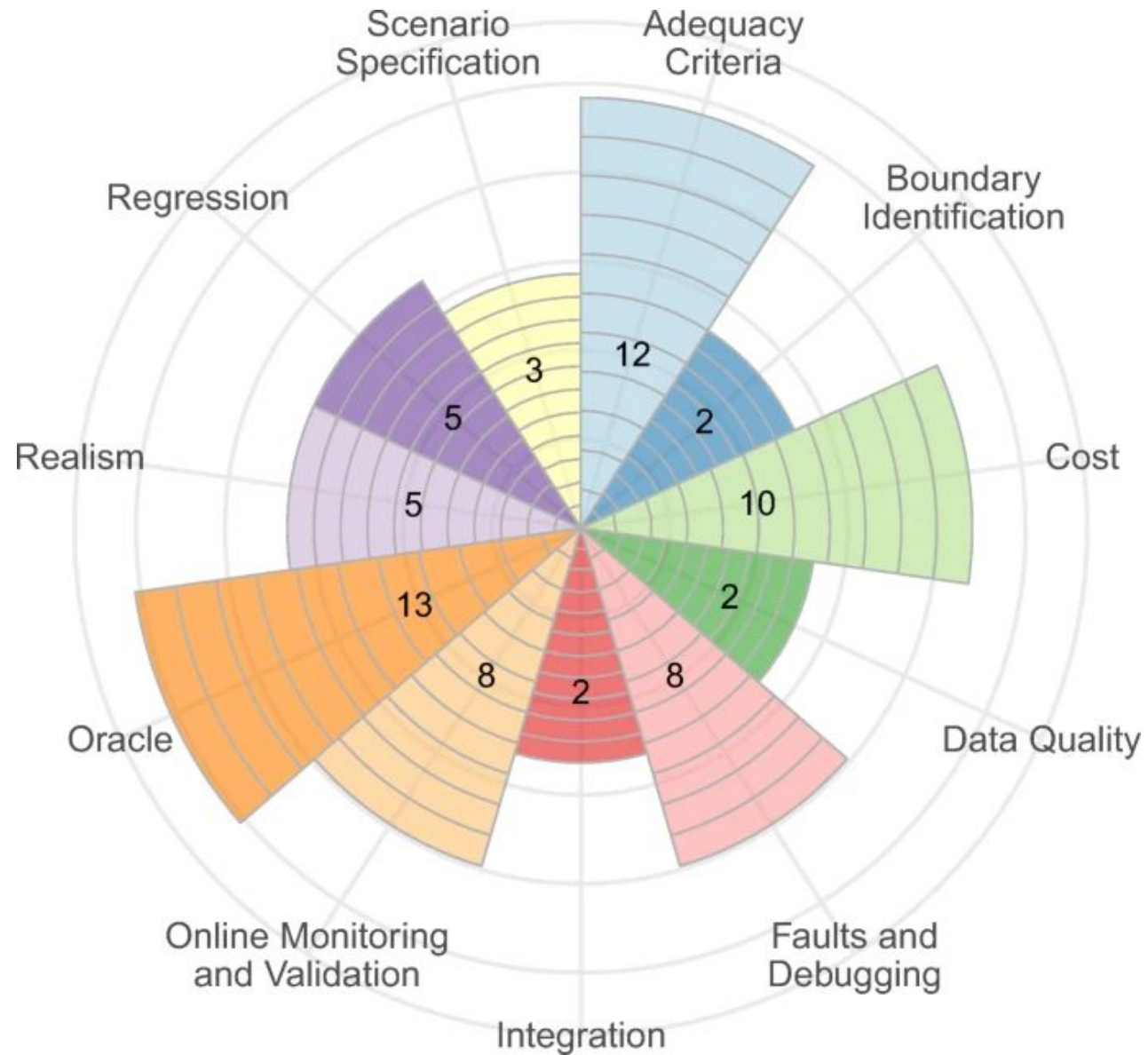
ISO/IEC TR 24027:2021 - Information technology — Artificial intelligence (AI) — Bias in AI systems and AI aided decision making

ISO/IEC 12791 - Information technology — Artificial intelligence — Treatment of unwanted bias in classification and regression machine learning tasks

artificial intelligence

- Artificial Intelligence (AI) is obviously an increasing focus
- Like many emerging areas it is full of buzz-words and jargon
- One of the areas engineers report as most challenging - is actually talking to customers about requirements and adequacy criteria
- Standardising on terminology removes a lot of ambiguity and cuts through hype
- While AI is “different” it also has a lot in common with software and systems engineering

machine learning testing challenges - research areas



SQuaRE

The series of standards ISO/IEC 25000, also known as SQuaRE (System and Software Quality Requirements and Evaluation), has the goal of creating a framework for the evaluation of software product quality.

Detailed quality models for computer systems and software products, quality in use, and data

**ISO/IEC 2501n:
Quality Model
Division**

**ISO/IEC 2502n:
Quality
Measurement
Division**

Defines a set of recommended base and derived measures, which are intended to be used during the whole software development life cycle

**ISO/IEC
2500n:
Quality
Management
Division**

iso25000.com

**ISO/IEC 2503n:
Quality
Requirements
Division**

**ISO/IEC 2504n:
Quality Evaluation
Division**

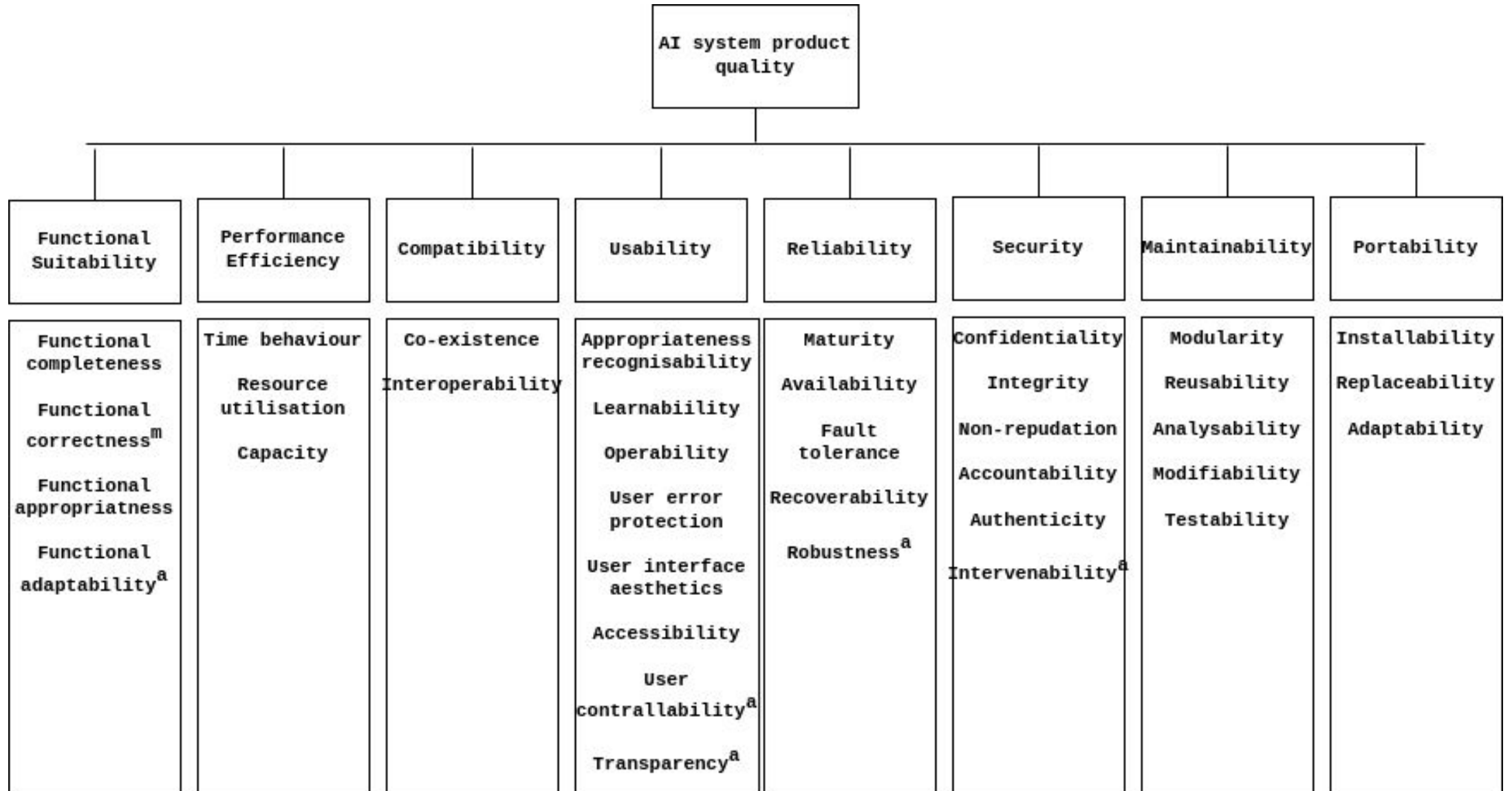
Helps specifying quality requirements for a software product to be developed or as input for an evaluation process

Requirements, recommendations and guidelines for software product evaluation

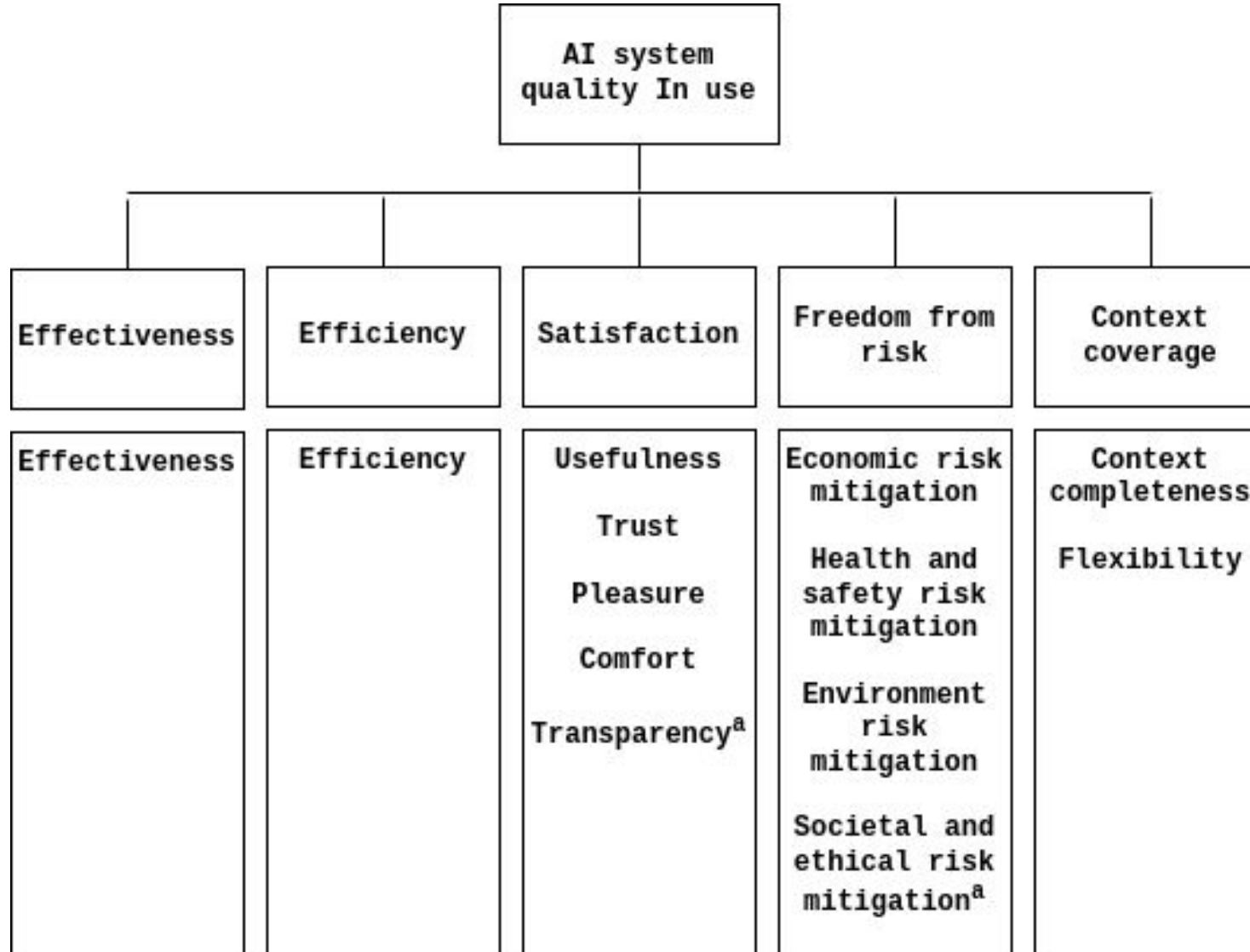
ISO/IEC 25010 - Quality model



artificial intelligence has new qualities



artificial intelligence has new qualities



next steps

- ISO/IEC 25059 about to be published - providing a quality for AI systems
- ISO/IEC 25058 (work in progress) builds upon it providing guidance for quality evaluation of AI systems
- ISO/IEC TS 29119-11 is about testing of AI systems and and similarly will build on the quality model
- Other work, e.g. in CEN/CENELEC on NLP accuracy may further build on the framework