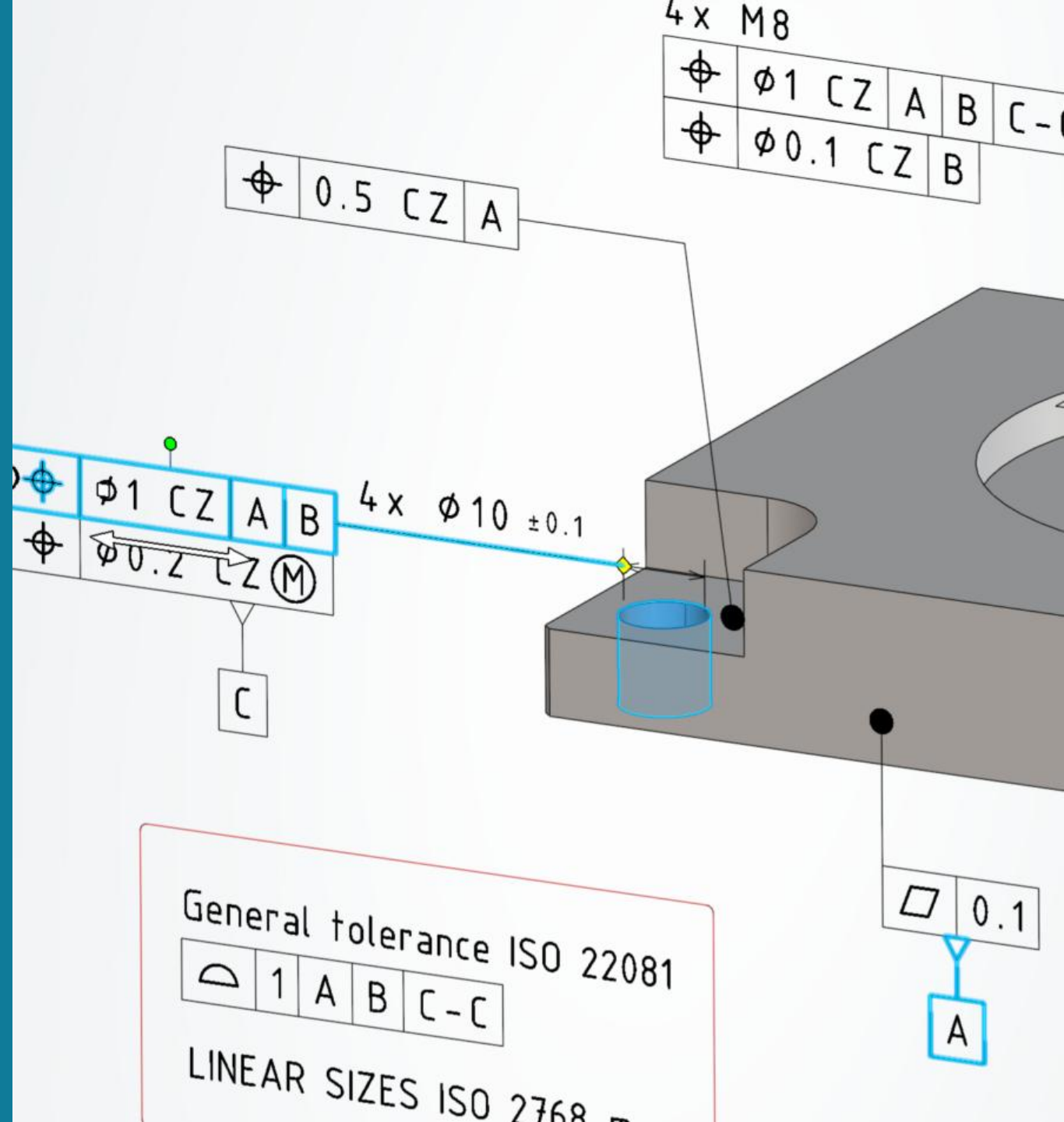


METSTA

Supporting the
industrial adoption of
Model Based Definition
through a national SFS
standard

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International landscape in standardization

ISO (International standard)

- ISO 16792 MBD practices
- ISO GPS system supports MBD:
 - ISO 8015 General rules
 - ISO 1101 Geometrical tolerances
 - ISO 5459 Datums
 - ISO 14405 Linear size
 - ISO 22081 General tolerance
 - ISO 21920 Surface texture
- ISO 10303-242 STEP
- ISO 23953 QIF
- ISO 23247 series on Digital twins

ASME (North American standard)

- ASME Y14 standard family:
 - ASME Y14.5 GD&T
 - ASME Y14.41 MBD practices
 - ...

Existing national standards on

Japan

- JIS B 0060 series – Digital technical product documentation (DTPD)

China

- GB/T 46849 — Technical product documentation — Requirements for model-based definition

UK

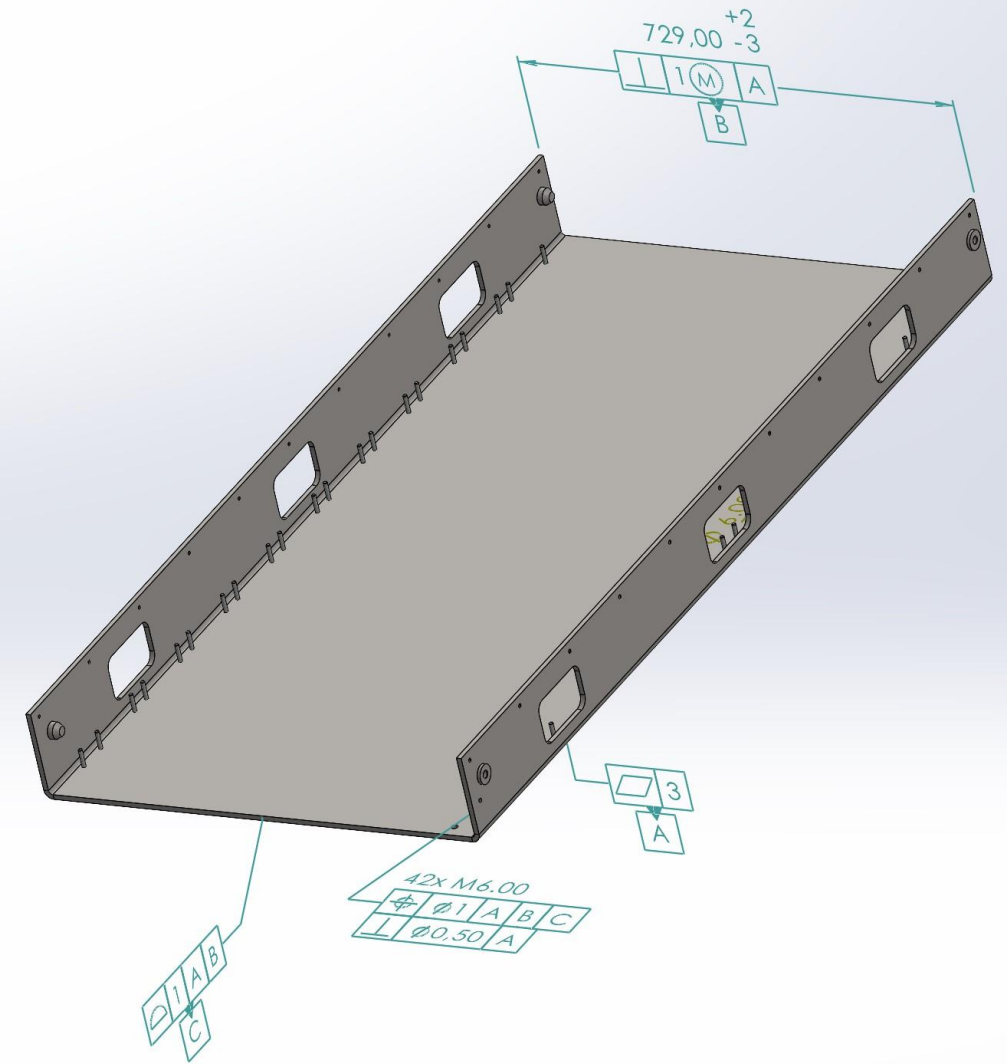
- BS 8888:2025 – Technical product documentation and specification

Germany

- VDA 4953-2 — a recommendation, not a standard

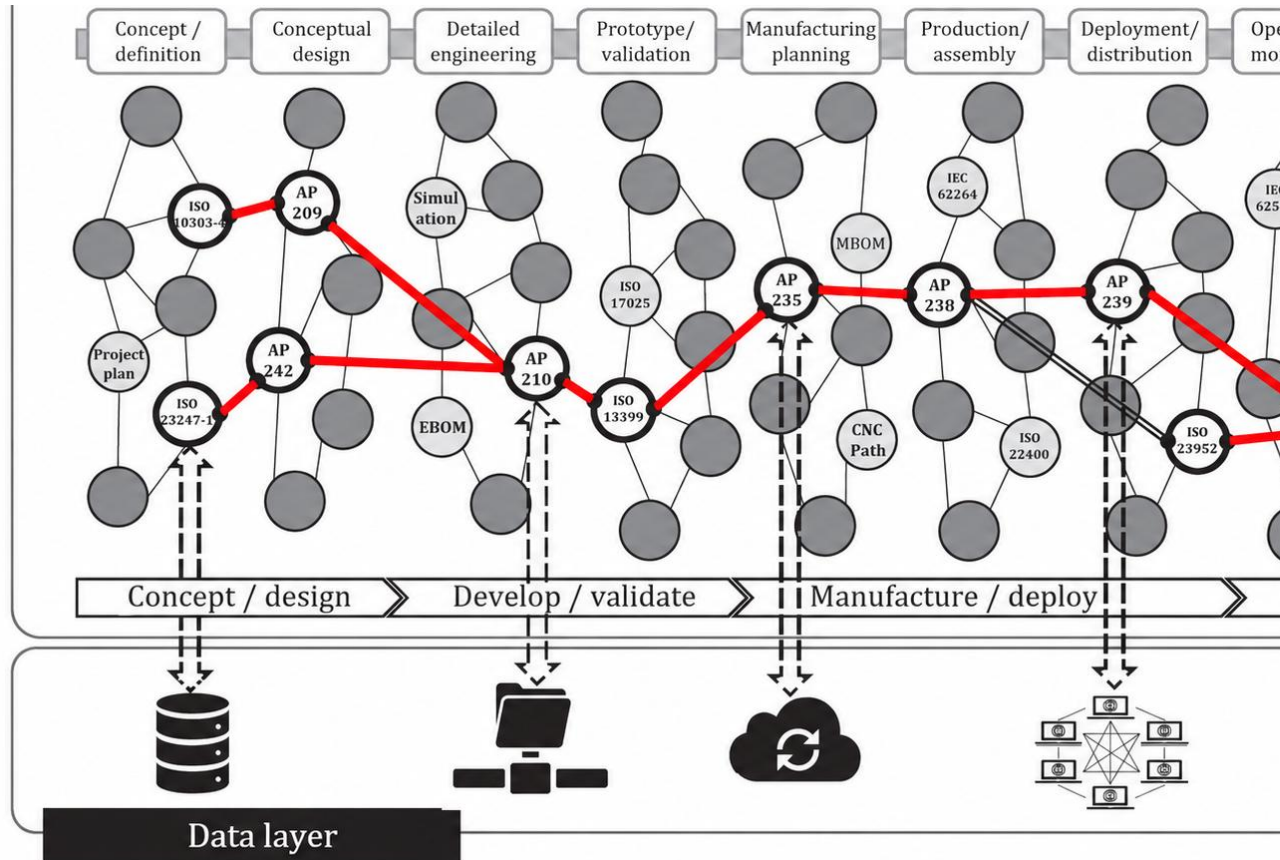
The challenges

- How can an SME adapt to ISO or ASME systems — or both?
- System boundaries between tools and partners
- Data transfer: the digital thread is not supported
- No standardized methods for applying MBD
- Limited awareness and skills
- Machine-readability and semantics
- Usability in the production environment



Finnish SFS-standard on Model-based product definition

1. METSTA is promoting a national SFS standard giving guidelines, recommendations and best practices for applying MBD
2. The core idea is a commonly agreed method for applying international standards, so that everyone in the supply chain can benefit from MBD data
 - a) No gaps in digital thread
 - b) Meaningful definition methods
 - c) Ability to cross system boundaries
 - d) Machine readability
 - e) Usability in all lifecycle stages: design, procurement, casting, sheet metal, welding, machining, assembling, verification



We do not want to invent the wheel again

- ISO standards serve as the backbone — the national standard adds application guidance, not new requirements

National working group is formed

- Working group TR 001 has been established under METSTA/SR 290
- The group currently brings together around 15 experts from various stakeholder groups:
 - SME
 - Large industry machine manufacturers
 - Component suppliers
 - CAD and CAM vendors
 - Academia
 - Metrology and verification
- A new online drafting environment will be used
- Preliminary timeline: first draft 2027, publication 2028

Summary and next steps

- MBD adoption is held back by system boundaries, a broken digital thread and a lack of shared application methods
- ISO and ASME provide the technical basis; Japan, China, the UK and Germany have already added national guidance
- The Finnish SFS standard will define how to apply those standards consistently across the supply chain — not create new requirements
- Working group METSTA/SR 290/TR 001 is active with around 15 experts from industry, vendors, academia and metrology
- First draft 2027, publication 2028
- We are just about to start; new members are welcome to join!

Join the MBD working group METSTA/SR 290/TR 001 by contacting METSTA



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