

"Japan-Germany Standardization Collaboration" 2020 RRI Symposium

TOKYO / FRANKFURT, 2020-10-14

A joint project by

bitkom

VDMA

DKE
VDE DIN

DIN

ZVEI:
Die Elektroindustrie

PLATTFORM
INDUSTRIE 4.0

Autonomy

Scope for action delivers competitiveness and control of personal data in digital business models



- Technology development
- Security
- Digital infrastructure

Interoperability

Cooperation and open ecosystems permit plurality and flexibility.



- Regulatory framework
- Standards and integration
- Decentralised systems and artificial intelligence

Sustainability

Modern industrial value creation ensures high standard of living.



- Decent work and education
- Climate change mitigation and the circular economy
- Social participation

Standardizing Industrie 4.0

Triangle of Digital Transformation



- Strategic planning / recommendations
- International cooperation strategy
- SME integration



- | | |
|---|--|
| <ul style="list-style-type: none"> ▪ Initiation of cross sectoral standards ▪ Coordination of national and international standards ▪ Cooperation with international fora & consortia | <ul style="list-style-type: none"> ▪ Network of pilot projects ▪ Practical piloting and validation of concepts ▪ Validated return of results into standardization |
|---|--|

Key Enablers for global standardization



STANDARDIZATION
COUNCIL
INDUSTRIE 4.0

A joint project by



- **Collaboration**

- Industrie 4.0 requires cross-connected standards over domains.
- SCI 4.0 connects all relevant organizations with the Industrie 4.0 Network

- **Internationalization**

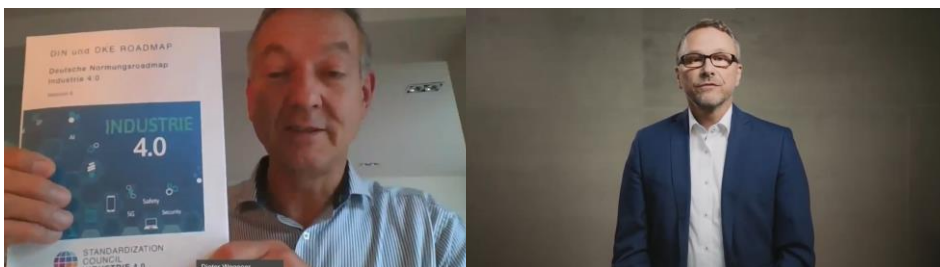
- Discuss concepts from Germany in an early stage with international partners – like **Japan**

- **Agile Standardization**

- Close relationship between SCI4.0 and LNI4.0 to enable PDCA like approach

- **Orchestration**

- Develop a **standardization** strategy / **roadmap** and implement the recommendations of the roadmap



“Standardization roadmaps on Industrie 4.0 are important blueprints to shape the digital ecosystem.”

- Available in English and German at:
<https://www.sci40.com/english/german-roadmap/>
- Also available in 日本語
<https://www.jmfrri.gr.jp/document/library/1645.html>
- Reduce complexity, and to provide recommendations for uniform descriptions and specifications
- Over 60 Experts from Industry, Academia and Research involved
- Secretariat by SCI 4.0
- *“Door opener”* for SME into standardization of digital manufacturing
- Virtually presented on 16.07.2020 to an international audience of 180 participants from 15 countries
- (English) Keynote from Michael Teigeler (Managing Director DKE): <https://www.dke.de/de/arbeitsfelder/industry/die-deutsche-normungs-roadmap-industrie-4-0>

The common strategy on international standardization in field of the Internet of Things/Industrie 4.0

PLATFORM INDUSTRIE 4.0 | ROBOT REVOLUTION INITIATIVE | STANDARDIZATION
COUNCIL INDUSTRIE 4.0

- Based on initial contacts in 2016
- Preparation of 2017 G20 meeting
- Confirmed direction:
 - Development of common use cases
 - Use of the reference models in focused areas
 - Identification of standardization requirements
 - Support of standardization work

Since 2017 there have been 37 Meetings and 4 technical publications have been prepared:

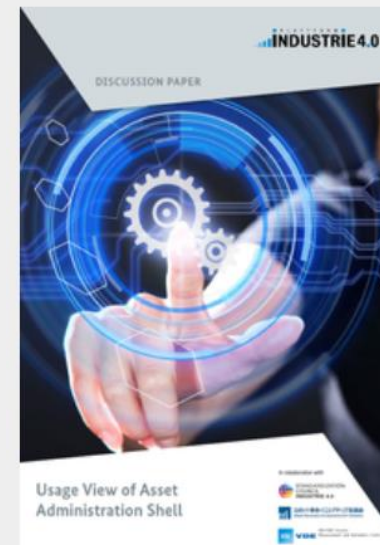
Usage Viewpoint
of Application Scenario Value-Based Service



Functional Viewpoint
of Application Scenario Value-Based Service



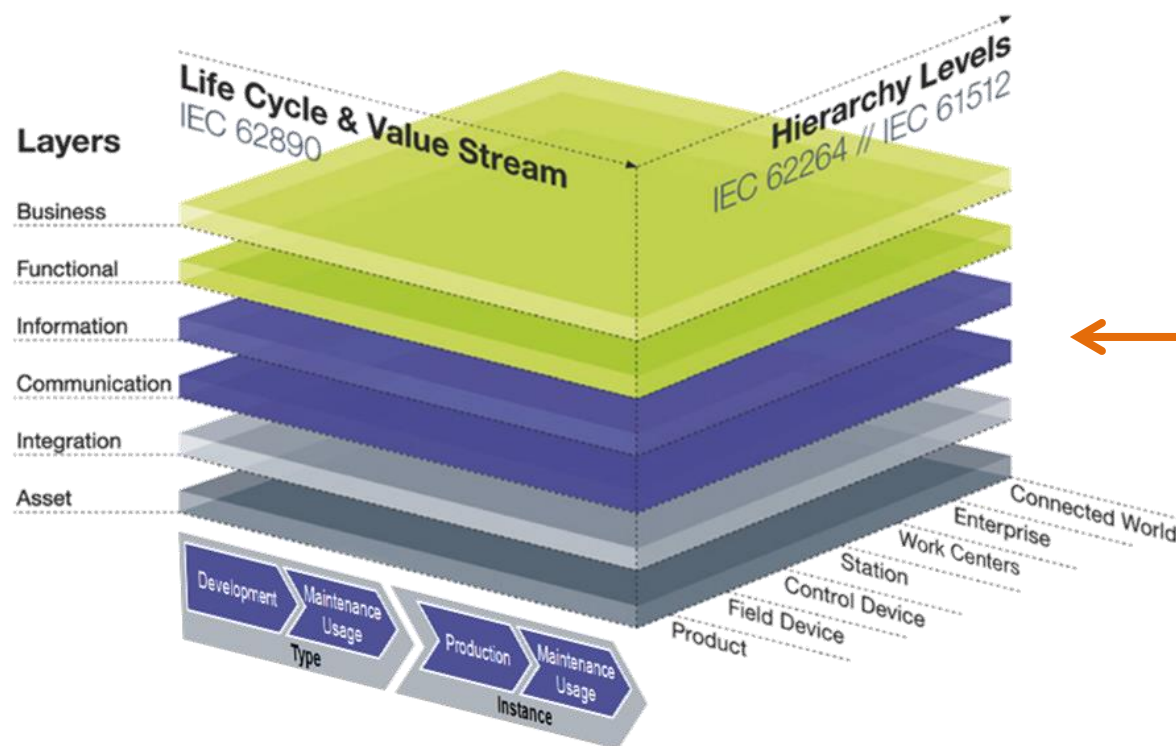
Usage View of Asset
Administration Shell



Usage View "Seamless and Dynamic
Engineering of Plants"



RAMI4.0



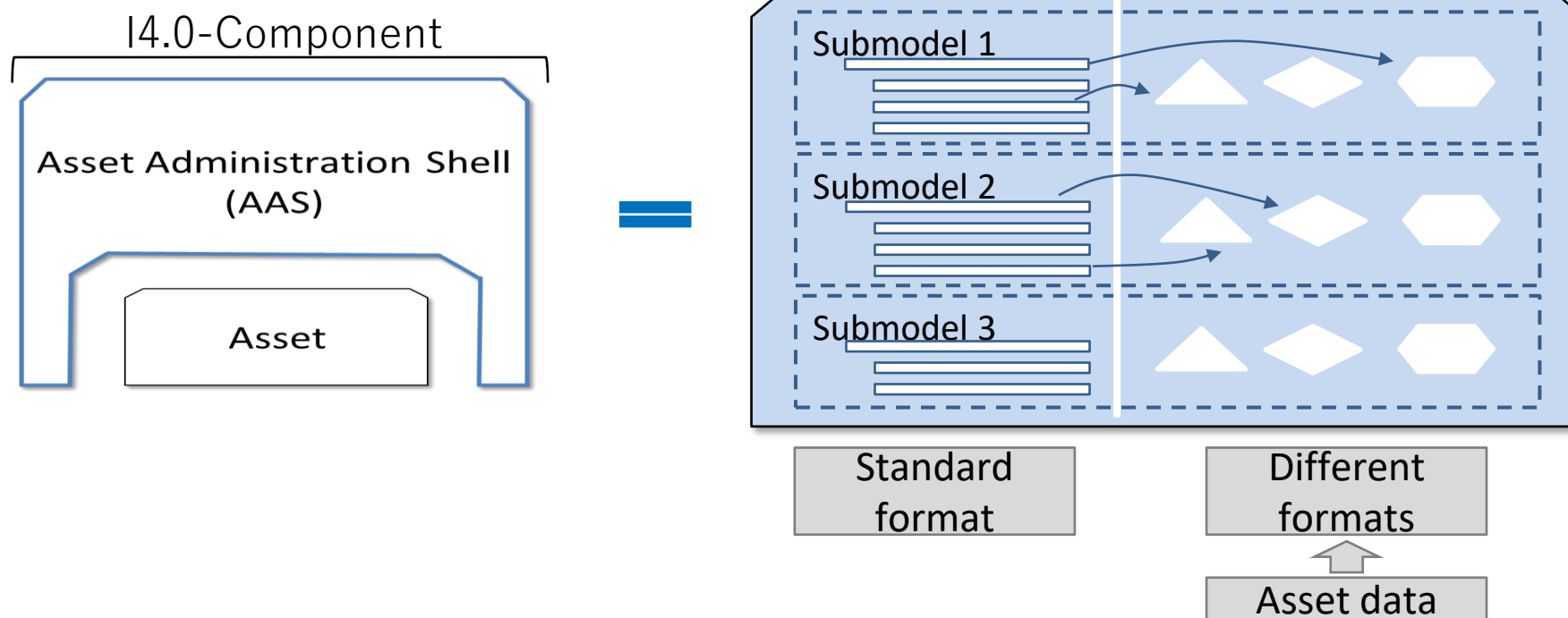
Industrie 4.0 Component

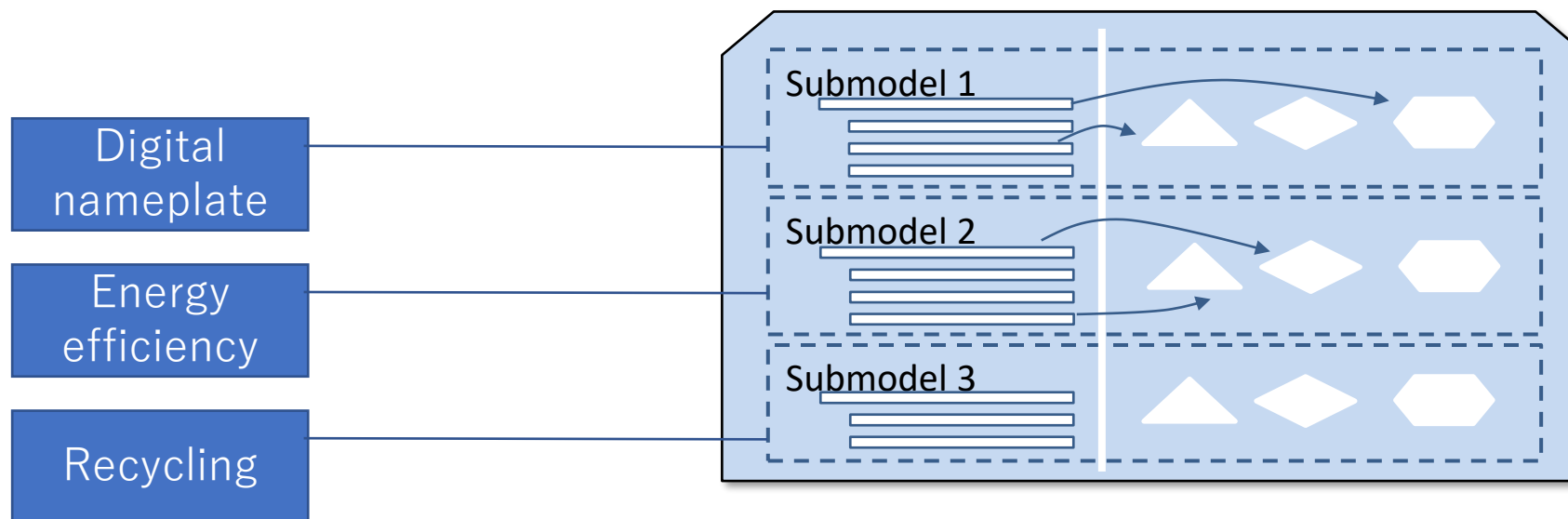


Unique description of the asset containing /linked to all relevant data

German Perspective on Interoperability

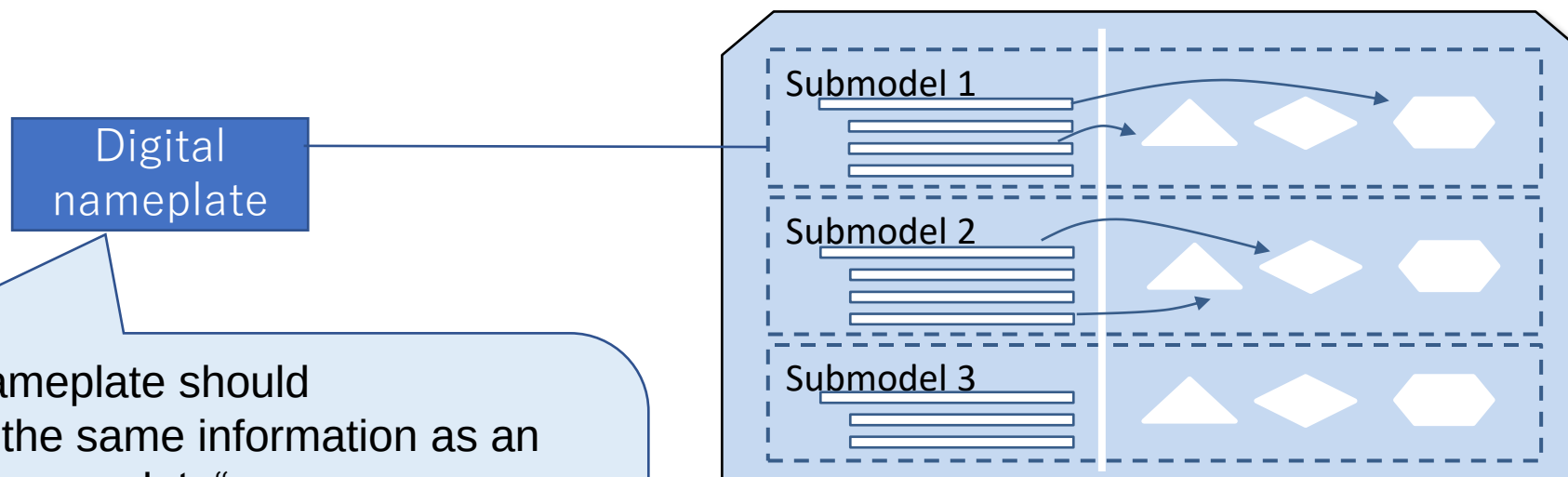
Concept of Asset Administration Shell





German Perspective on Interoperability

Submodels to model aspects of assets

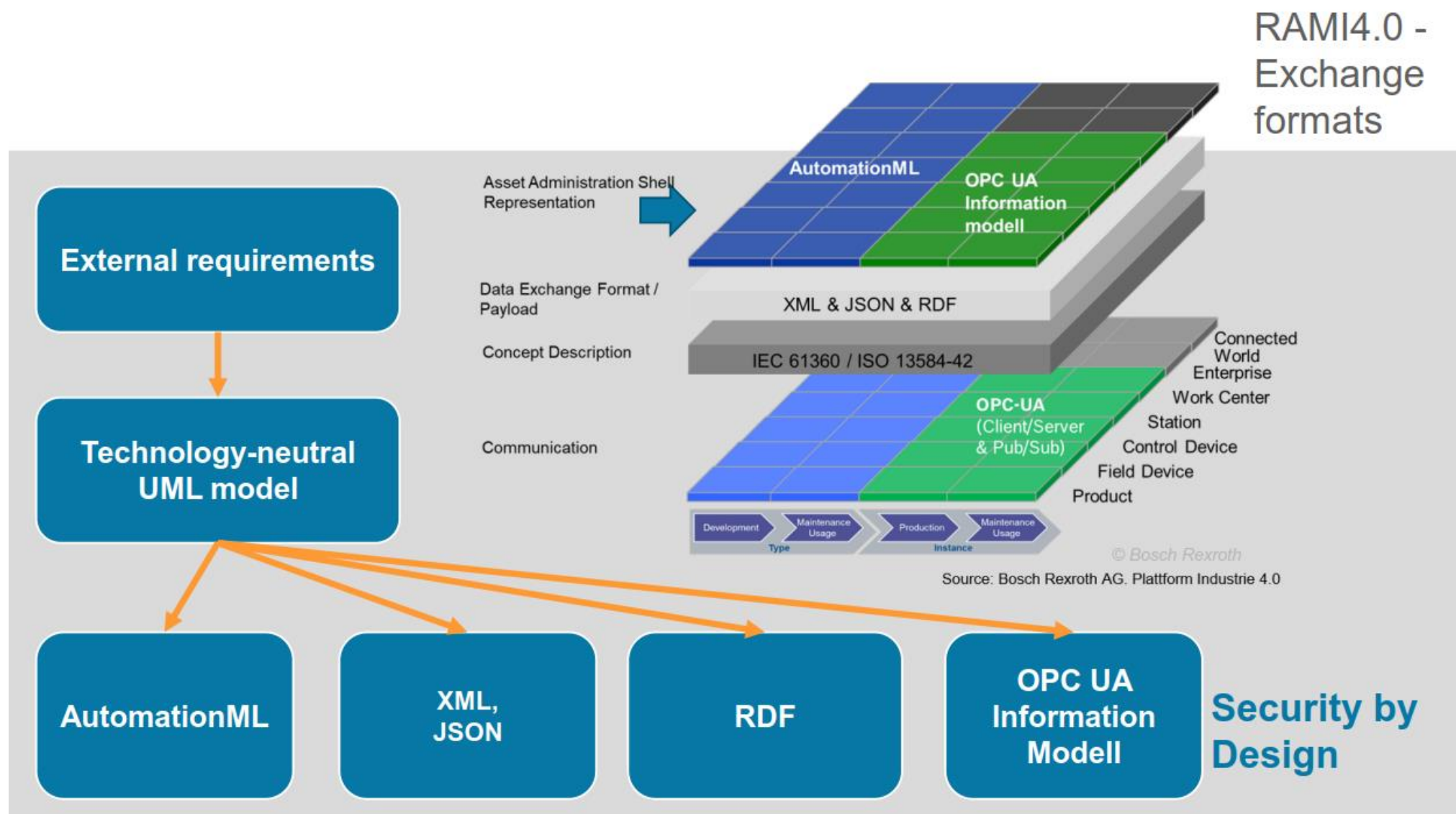


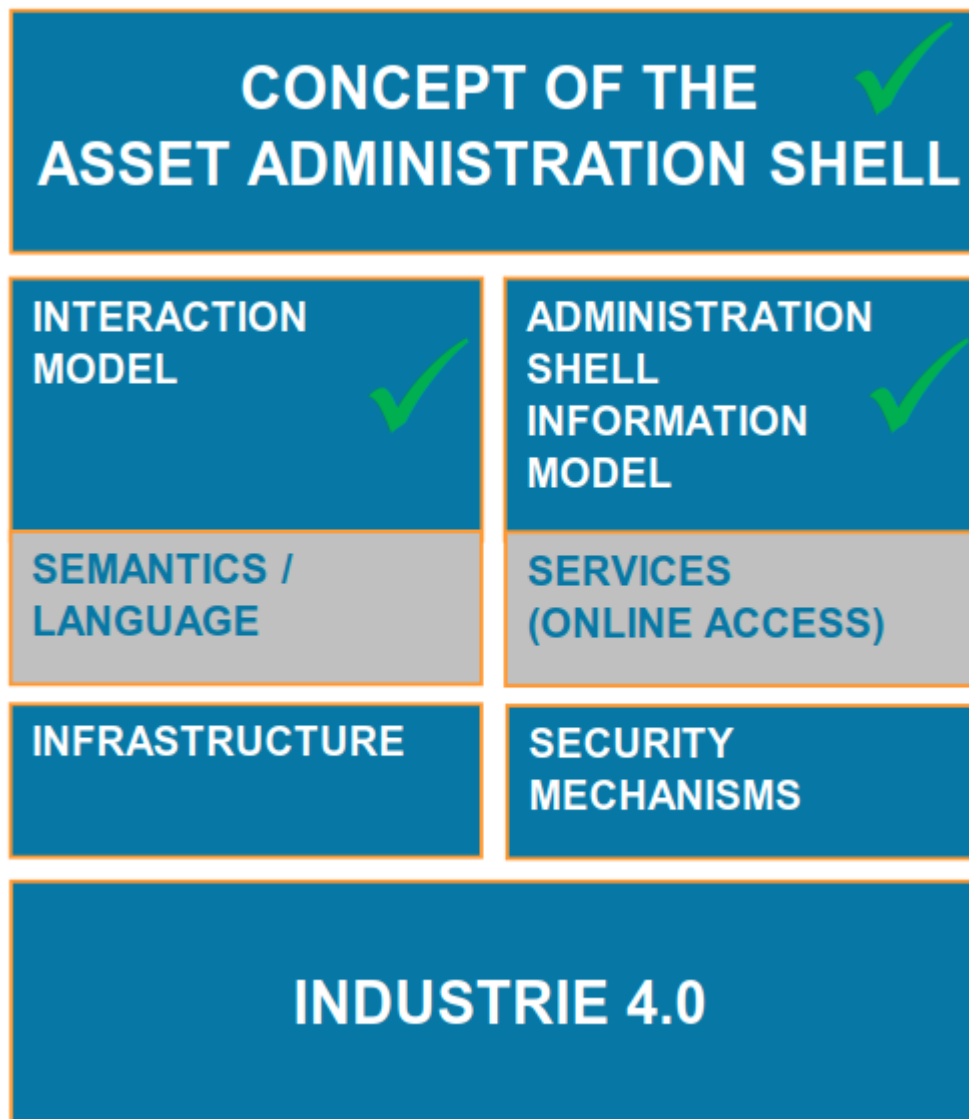
A digital nameplate should

- contain the same information as an „analog nameplate“
- be encoded in a machine readable and machine interpretable format
- use semantic properties like IEC CDD (Common Data Dictionary) to achieve semantic interoperability

German Perspective on Interoperability

Approach for Mapping to specific Technologies





- IEC/TC 65/WG 24 Asset Administration Shell for Industrial Applications
- IEC 63278-series: Asset administration shell for industrial applications
- Part 1: Administration shell structure
- Part x: t.b.d.

Thank you very much



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