STANDARDIZATION COUNCIL INDUSTRIE 4.0

Standardization and interoperability in a German-Korean Context

German-Korean Forum on Industry 4.0 / Asset Administration Shell

KOREA-GERMANY 2020-10-13

A joint project by

bitkom VDMA DKE VDE DIN DIN ZVEI: Die Elektroindustrie PLATTFORM INDUSTRIE4.0

Current Status of Industrie 4.0 in Germany

Vision 2030 – launched in 2019

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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

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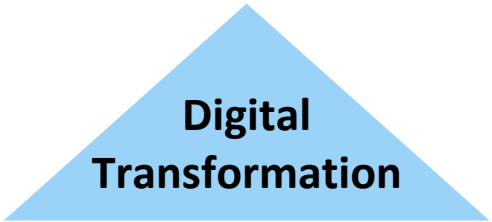
Triangle of Digital Transformation

PLATTFORM INDUSTRIE 4.0

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



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- Initiation of cross sectoral standards
- Coordination of national and international standards
- Cooperation with international fora & consortia

LNI4.0 LABS NETWORK INDUSTRIE 4.0

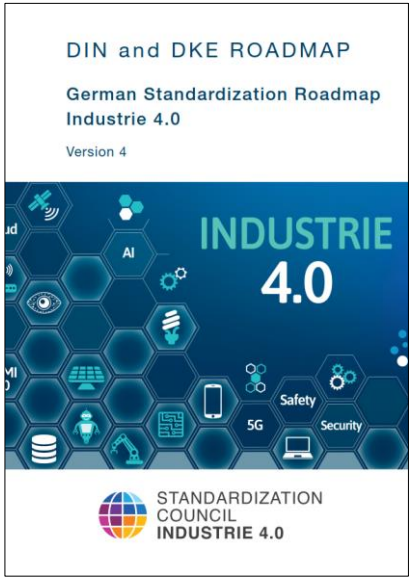
- Network of pilot projects
- Practical piloting and validation of concepts
- Validated return of results into standardization

Standardization Council Industrie 4.0

- **Collaboration**
  Industrie 4.0 requires cross-connected standards over domains. SCI4.0 connects all relevant organizations with the Industrie 4.0 Network
- **Internationalization**
  Discuss concepts from Germany in an early stage with international partners
- **Agile Standardization**
  Close relationship between SCI4.0 and LNI4.0 to enable PDCA like approach
- **Orchestration**
  Initiate and develop standards for digital production.

Standardizing Industrie 4.0

German Standardization Roadmap Industrie 4.0 – Edition 4



"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/
- Provides an overview of all activities on I4.0 - standardisation
- A total of 115 recommendations for action and application
- Over 60 Experts from Industry, Academia and Research involved under the leadership of SCI 4.0
- Central document to coordinate the German stakeholder landscape and "door opener" for SMEs
- 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

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THE ASSET ADMINISTRATION SHELL

Standardizing Industrie 4.0
The Industrie 4.0 Component and Asset Administration Shell

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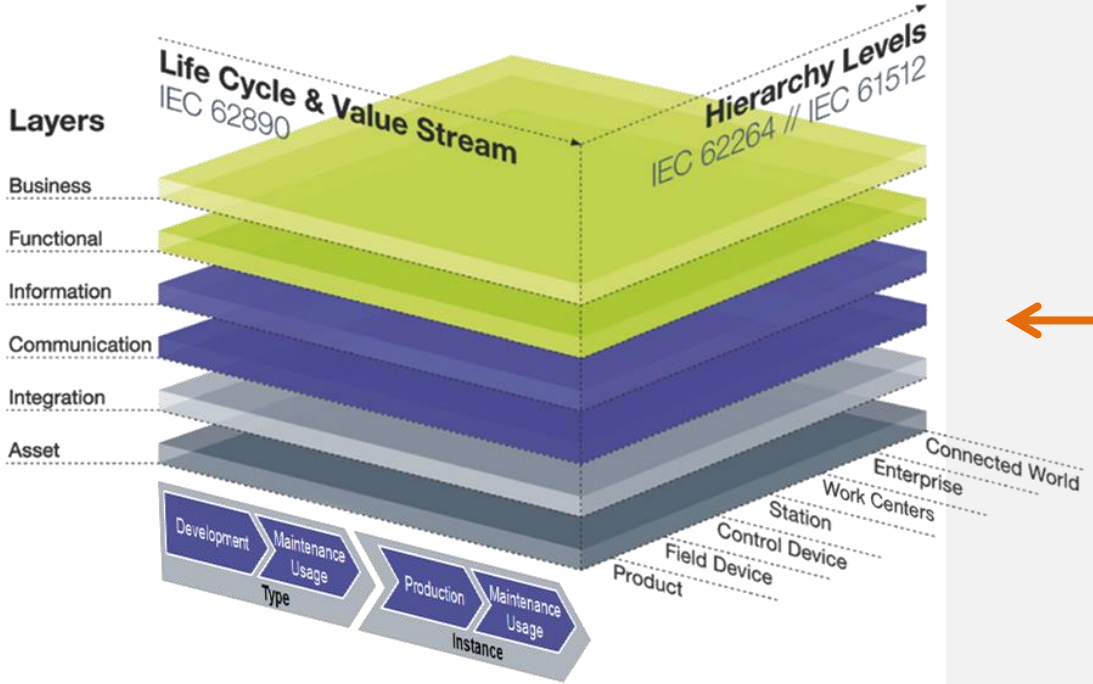
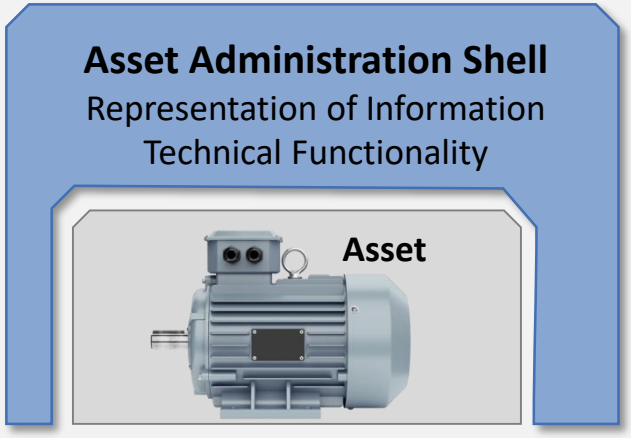
RAMI4.0

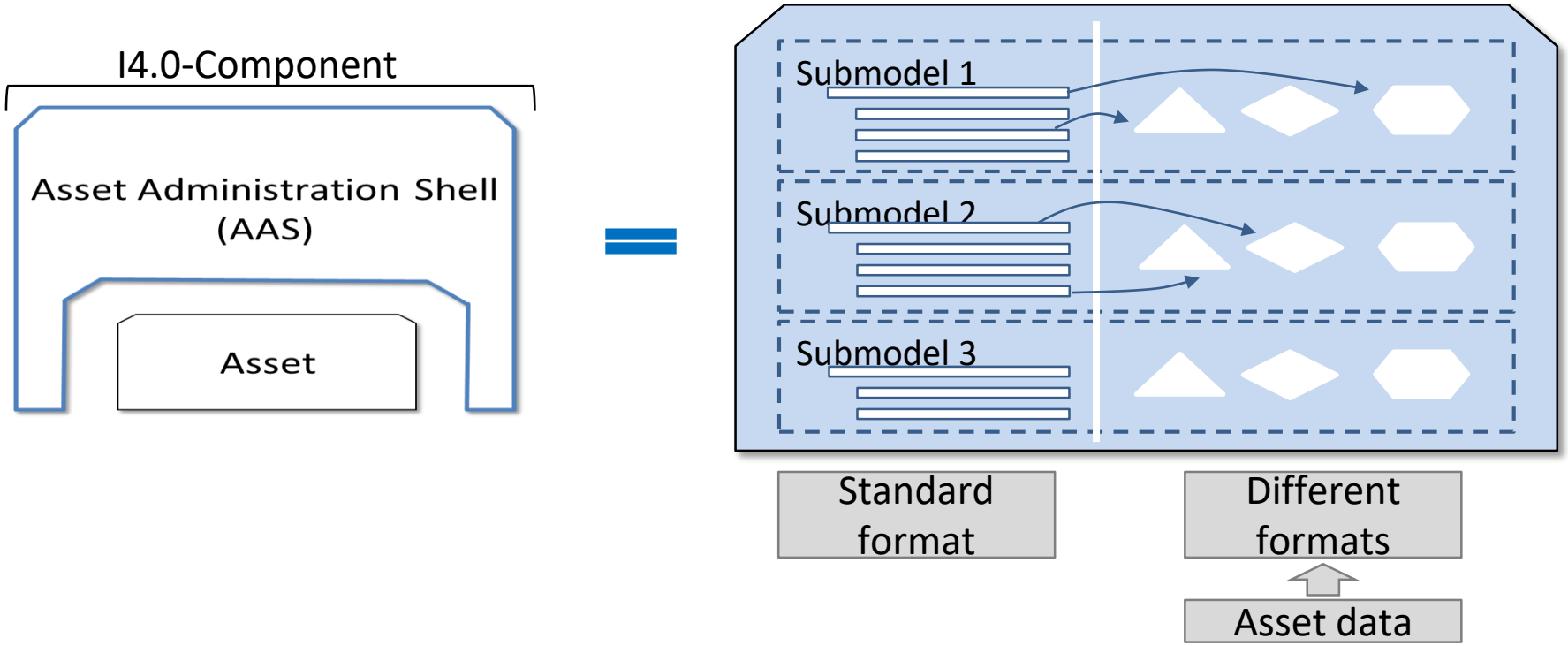


Industrie 4.0 Component



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

I4.0-Component = Asset + Asset Administration Shell



Standardization Project at IEC/TC 65

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Scope | Structure | Projects / Publications | Documents | Votes | Meetings | Collaboration Platform

Subcommittee(s) and/or Working Group(s) > TC 65/WG 24

Log in | En | Fr

WG 24 Convenor & Members

Convenor	National Committee
Mr Michael Hoffmeister	DE

Member	National Committee
Mr Jouni Aro	FI
Mr Jaewon Ban	KR
Ms Birgit Boss	DE
Mr Jan B. de Meer	DE
Mr Jürgen F. Diller	DE
Mr Marco Gamba	IT
Mr Kai Garrels	DE
Mr Oliver Hillermeier	DE
Mr Seung-ho Hong	
Mr Yun Chao Hu	
	DE

Title & Task

WG 24

Asset Administration Shell for Industrial Applications

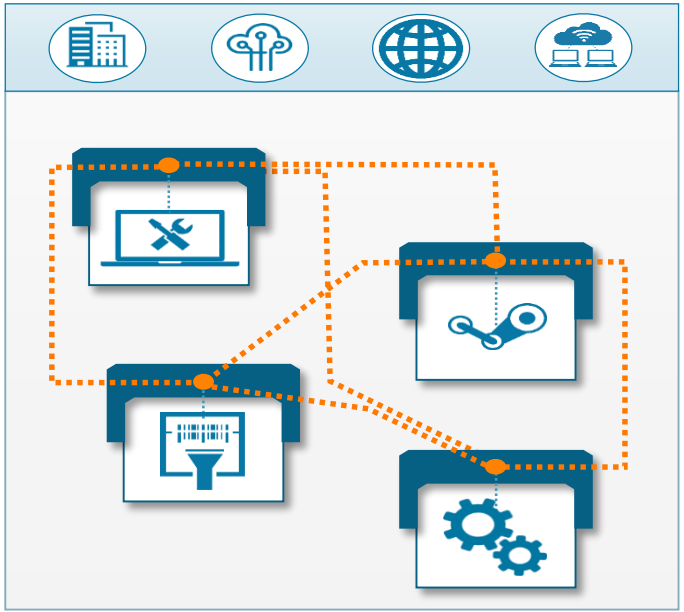
Work on Asset Administration Shell in the scope of industrial applications and especially of Smart Manufacturing. Define how to represent an asset of the real world in the information world by the Asset Administration Shell containing structures, properties and services.

IEC 63278-1

Kick-Off WG 24: Feb. 18.-20. in Frankfurt/Main

Committee Draft (CD) under preparation

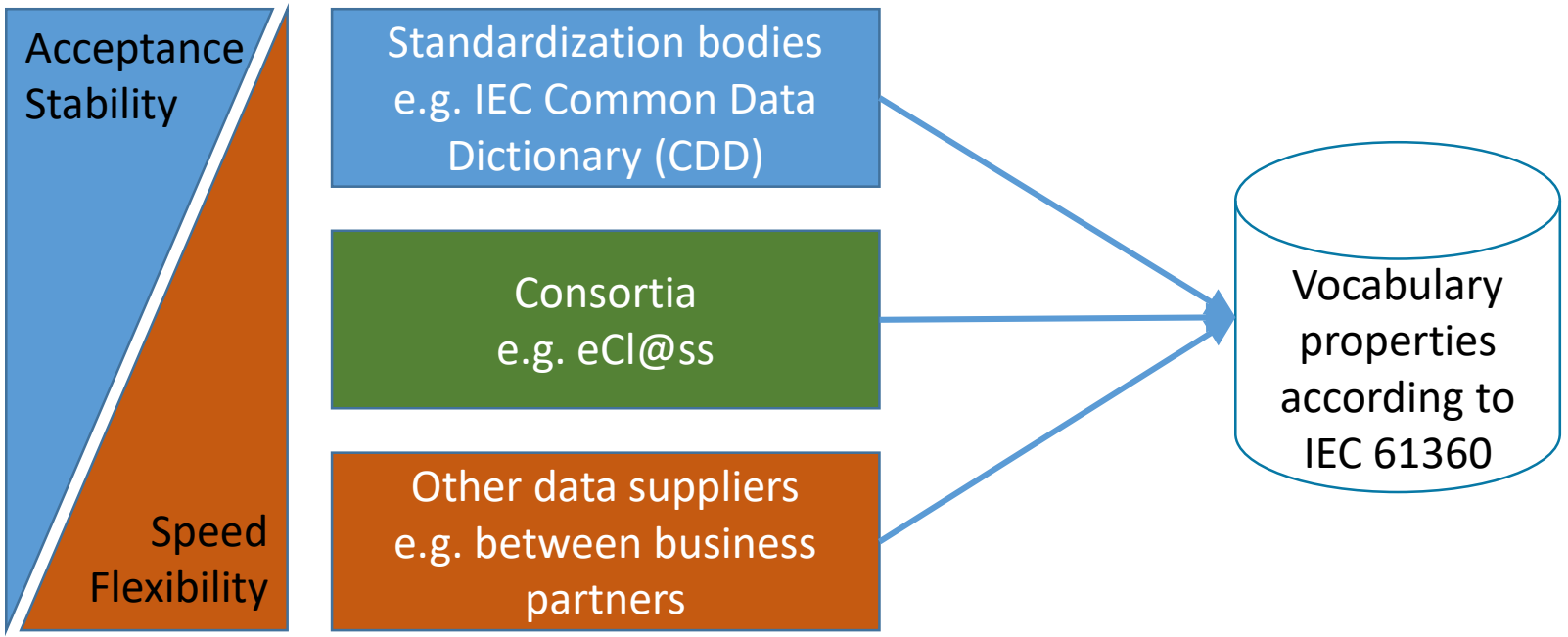
A common language for I4.0-Components



- Standardized interaction model
- Data storage of all asset information
- AAS acts as translator between the “Korean”, “German", "French", "Italian“ of the assets and the common language of the Industry 4.0
- Standardized semantic properties are the basis for semantic interoperability

A Common language with Signs, Alphabet, Vocabulary, Sentence Structure, Grammar, Semantics

Vocabulary of Industrie 4.0 Language
The Role of Standardized Properties



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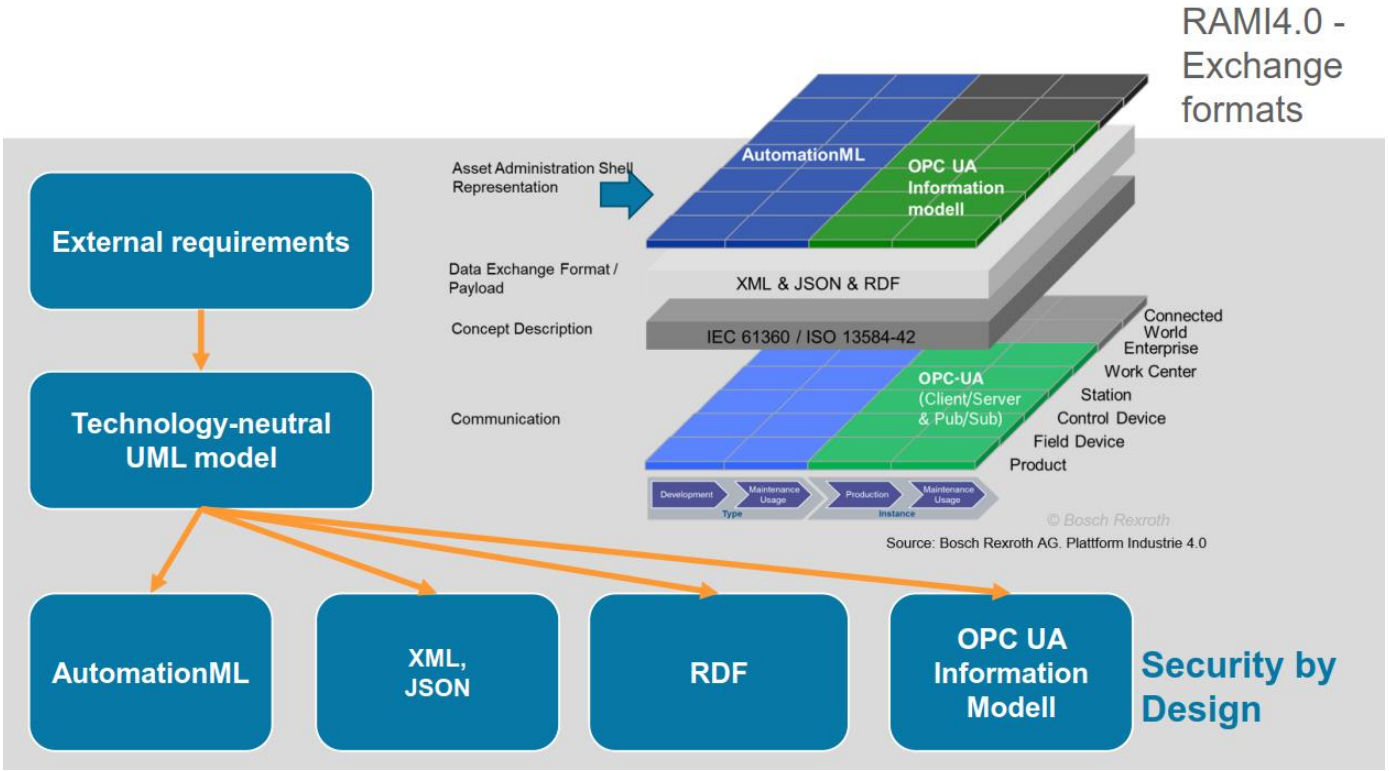
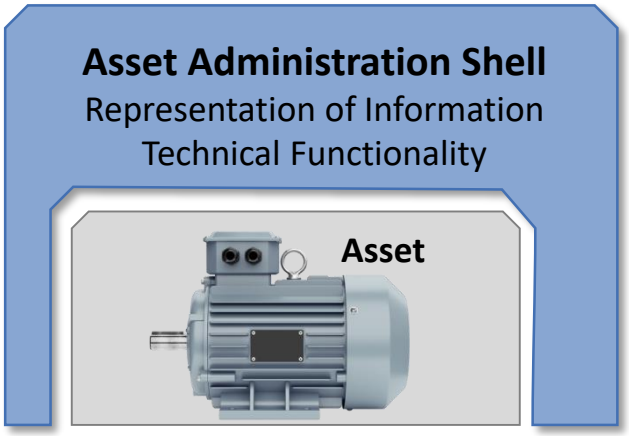
Approach for Mapping to specific Technologies



Next Steps and Ongoing Activities



1. Extension of IEC 63278-Series
   - Interaction models
   - Infrastrucutre services
   - Mechanisms for security
   - …
2. Extension of repositories for semantic properties
3. Modeling of aspects of assets / definition of sub-models
4. Mapping to different technologies
   - OPS-UA
   - AutomationML
   - …

Thank you very much

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