Industrie 4.0 Standardization in Germany

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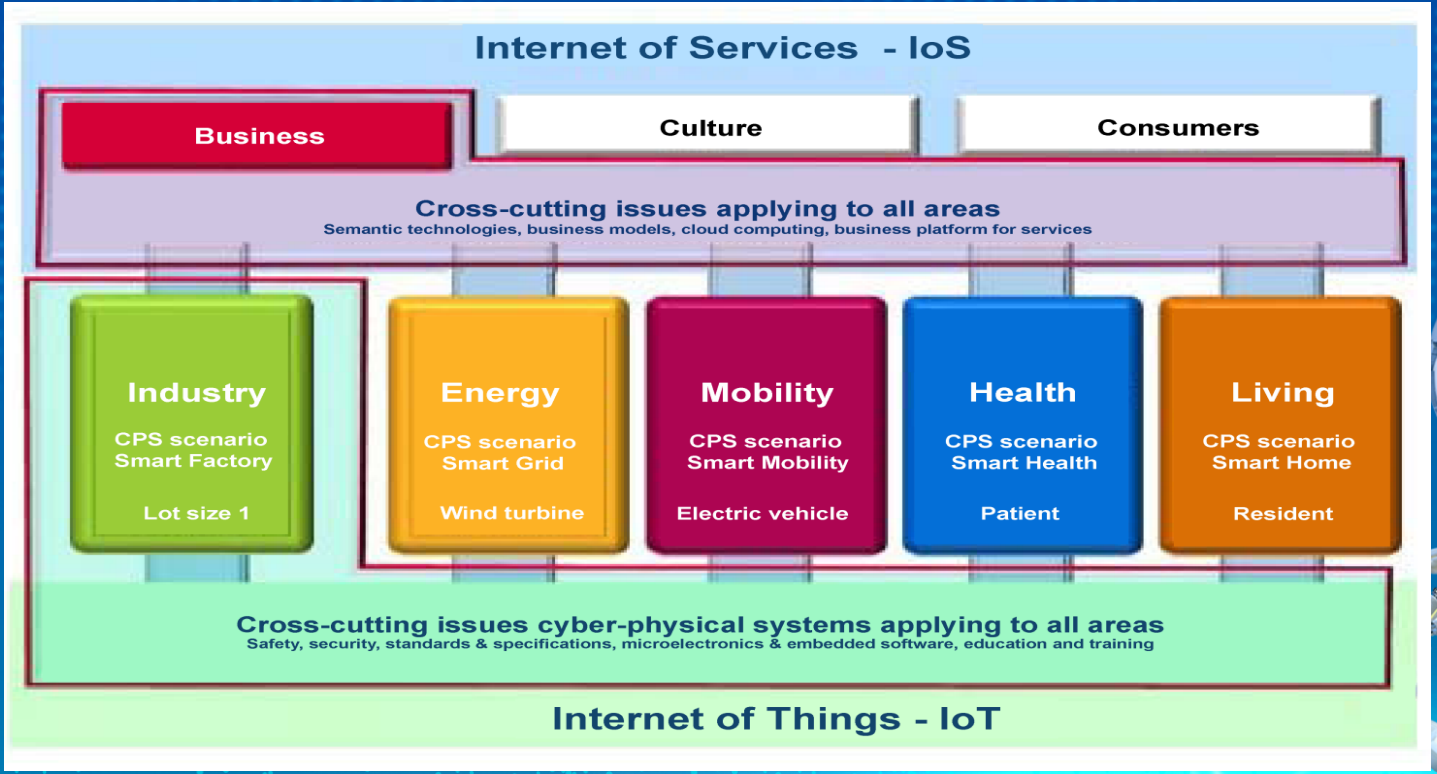
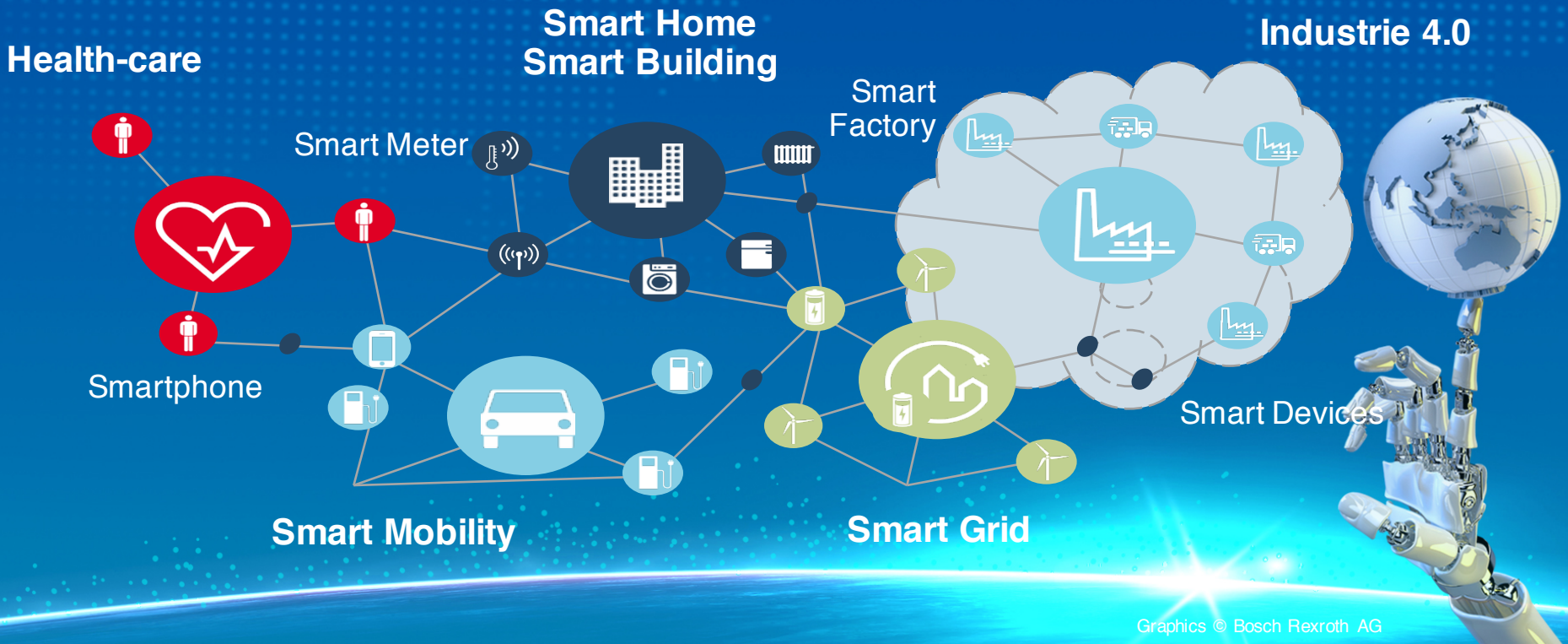
Digitisation increasingly affects all areas of society



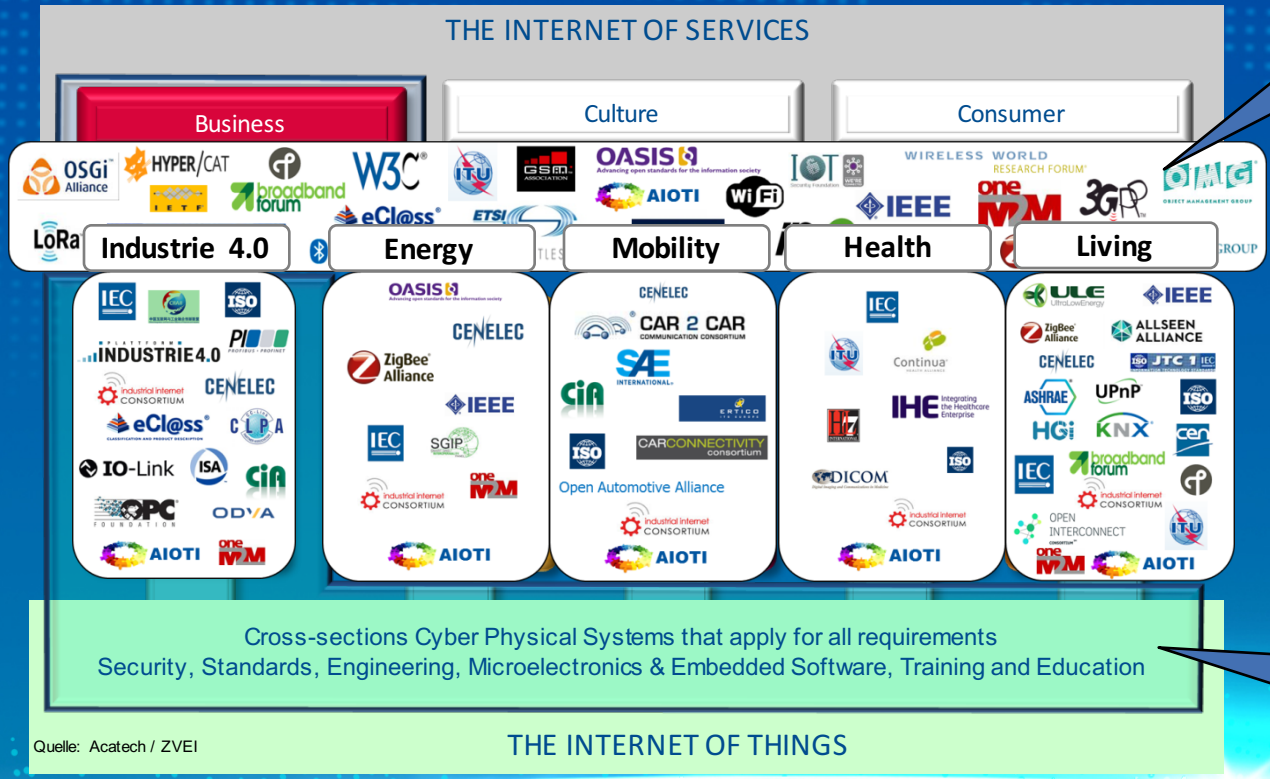
The Internet of Things and Services (IoT)



What is Industrie 4.0?

- I4.0 connects / merges production with information and communications technology
- I4.0 links customer data to machine data
- Machines communicate with machines
- Components and machines autonomously manage production in a flexible, efficient, and resource-saving manner

Digitalization of the Economy: The Standardization-Zoo



IoS: Internet of Services

IoT: Internet of Things

Quelle: Acatech / ZVEI

让制造更聪明
More Cooperation, Smarter Manufacturing

Standardization Strategy

PLATTFORM INDUSTRIE 4.0 AG1

Standardization Process-Support

Coordination Recommendations Support

STANDARDIZATION COUNCIL INDUSTRIE 4.0

Office DKE

Advisory Board

Steering Committee

Expert Panel

Roadmap

Use Cases
Test
Validation

LNI4.0

Standardization Implementation

Proposals for international Standards

DIN, DKE

CEN/CENELEC, ETSI

IEC, ISO

Int. standardization organizations (with mandate)

de facto standard , open source (consortial-consensus)

International standard (full consensus)

- Enhance the collaboration with international forums and consortia in order to realize interoperability in Industry 4.0
- Cooperation at international level is absolutely essential for opening up the way towards truly global standards and ensuring common understanding among all stakeholders

Standardization
Implementation

Proposal for int. Standards

DKE, DIN/NAM

ETSI CEN/CENELEC

IEC, ISO

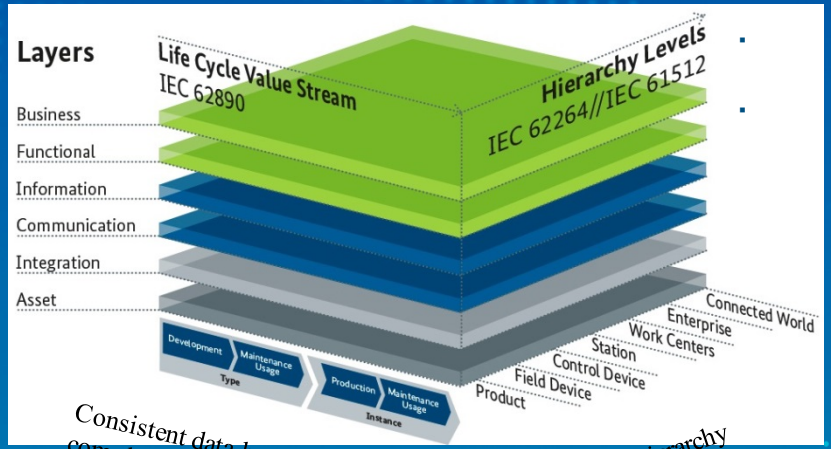
int. Standardization Organizations (with mandate)

Consortial-Consens – de facto Open source

int. standard (full consensus)

- Agreeing on a uniform reference architecture model for structuring Industrie 4.0 standards work is extremely important..

RAMI 4.0



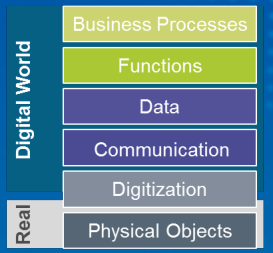
Consistent data handling during complete product life cycle

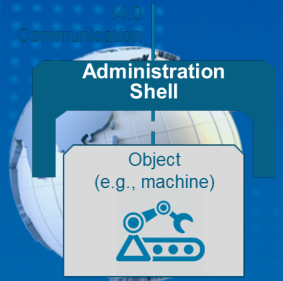
Functional hierarchy

I4.0 Component

Asset + Administration shell form the I4.0 component

Administration shell is the „digital twin“ towards the I4.0 world





Semantics – the basis for communication

For easy operability an common language (words and semantic) is needed

Basic common rules for semantic, individual definitions in the different domains

Plattform I4.0 approach at a glance

RAMI 4.0

Industrie 4.0 Component

Common Semantic

Requirements for successful I4.0

- Alignment between national and international standards
- Efficient collaboration between international standardization organizations
- Worldwide accepted reference model supported by open source reference implementation
- Network of test centers with easy access to SMEs
- Taking standardization into account from the very beginning. Integrate standardization aspects into national and international research projects

PLATTFORM INDUSTRIE 4.0

Cooperation with Testbed Initiatives and Standardization

PLATTFORM INDUSTRIE 4.0

- Recommendations for action/strategic approach
- SMEs
- International cooperations

Digital Transformation

STANDARDIZATION COUNCIL INDUSTRIE 4.0

- Initiation of cross-sectoral standards
- Coordination of national and international standards
- Strengthening German-international cooperations

LNI4.0 LABS NETWORK INDUSTRIE 4.0

- Network of testlabs
- Practical tests
- Validated feedback on results for the standardization

German approach as a blue print?

PLATTFORM INDUSTRIE 4.0

Coordination of I4.0 activities based on broad support from a wide range of stakeholders in industry, politics and academic

STANDARDIZATION COUNCIL INDUSTRIE 4.0

Interface from Plattform I4.0 towards international standardization organizations

LNI4.0 LABS NETWORK INDUSTRIE 4.0

Industry founded association for setting up and supporting various testbeds

世界智能制造大会
中国·南京
World Intelligent Manufacturing Summit
NANJING · CHINA

让制造更聪明
More Cooperation, Smarter Manufacturing

Thank you for your attention!

DKE Technical Standardization

The Power of Standardization

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