



Plattform Industrie 4.0 and the Industrial Internet Consortium: Perspectives from a Global Company

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EVP DIGITAL ASSETS & IOT | SAP SE

Industrie 4.0 and the Internet of Things are facing **global market challenges**



Heterogeneous devices standards

Large variety of proprietary interfaces, protocols, and data formats



Security, safety, privacy concerns

Heterogeneity of attack points with lack of end-to-end standards; safety relevant areas



Lack of skills in the market

Expensive specialists for data intake, data scientists, security experts



Scenario-specific algorithms

Customer landscape for IoT applications have little commonality, requiring data scientists



Many market players

Customers face offerings from different parts of the stack; most vendors only address parts



exp. with digital transformation

Businesses are subject to transformation –digital and platform models. Few companies have experience with that.

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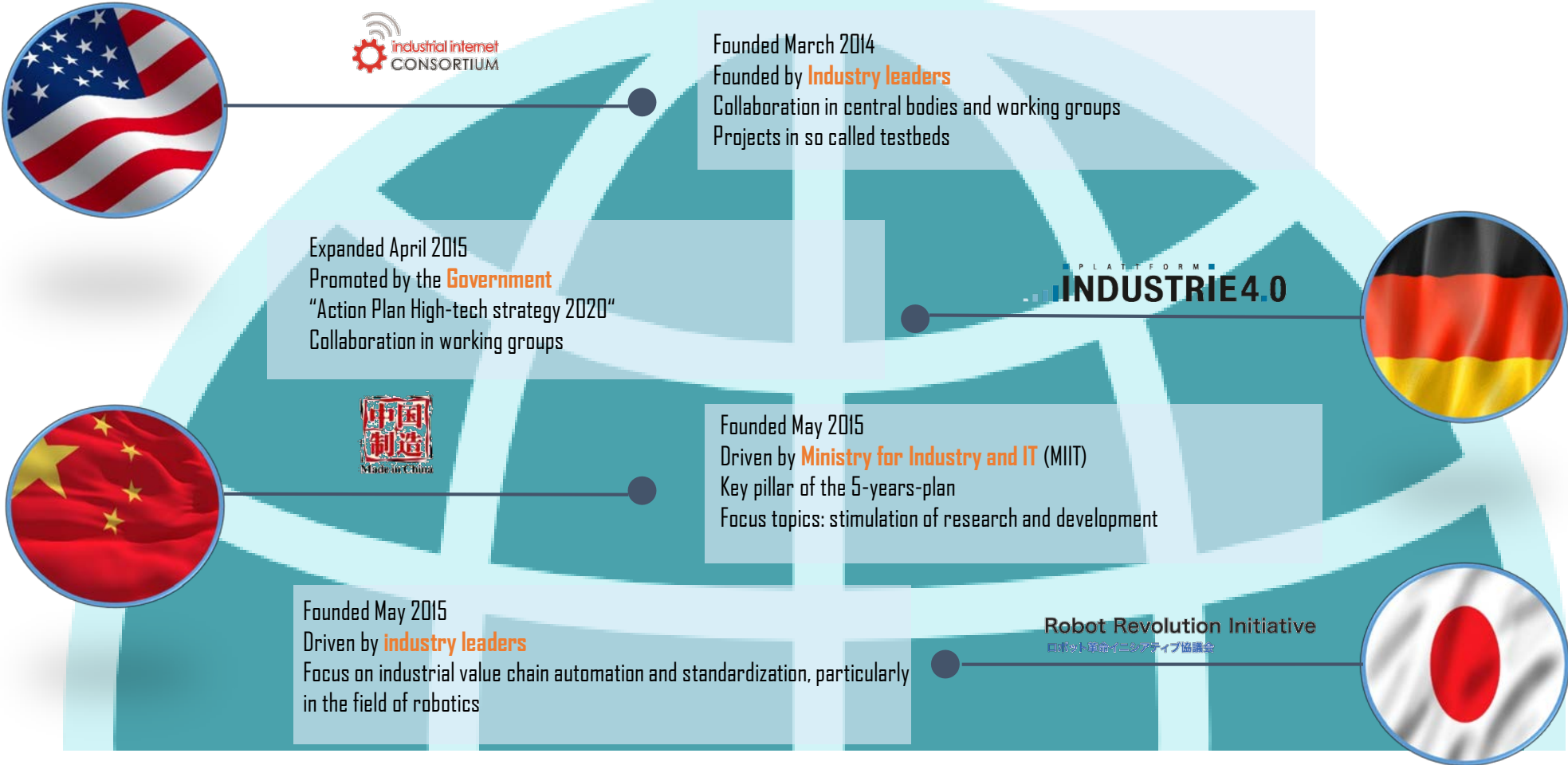
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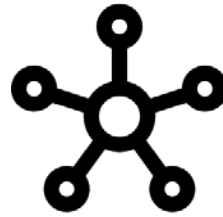
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Multiple **initiatives** have been triggered globally to solve Industrie 4.0 and the Industrial Internet challenges



...plus many more initiatives in France, Italy, Austria, Norway, Australia and others

Plattform Industrie 4.0 and IIC have different approaches with same interests



... shares the same interests for technology, standards, security and legal aspects



Labor and education



Standards & Technology



Security



Membership



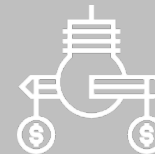
Research



Legal



Testbeds



Marketing

Plattform Industrie 4.0 and IIC – cooperation instead of competition



Zurich, 11/2015:
Exploratory
Workshop on
IIC/I4.0 Collab.



Bosch ConnectedWorld,
Berlin 03/2016: Presentation
of IIC/I4.0 collaboration,
first joint Testbed proposal



Chicago, 05/2016:
Joint Workshop on
architecture, testbeds
and standardization



Walldorf, 09/2016:
Joint IIC/I4.0 Event, hosted
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**Complementary
Domain Focus**

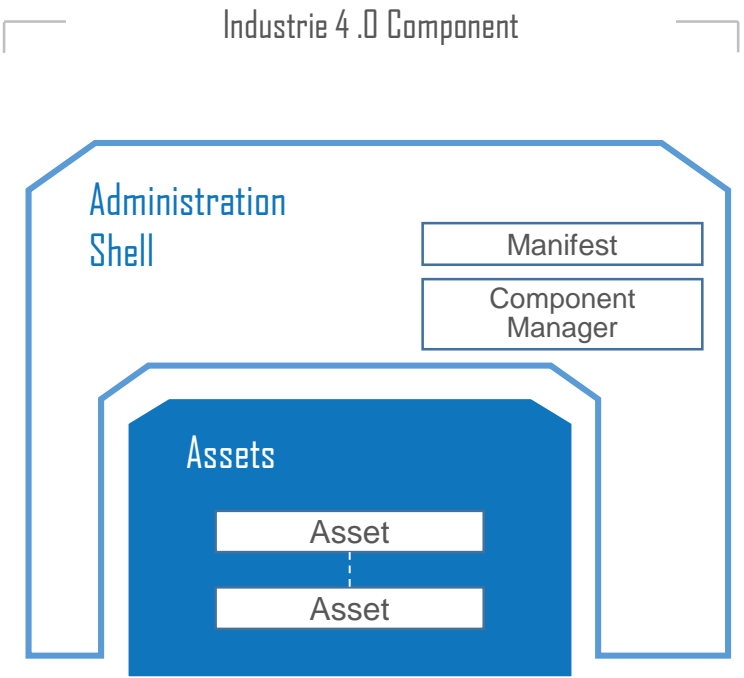
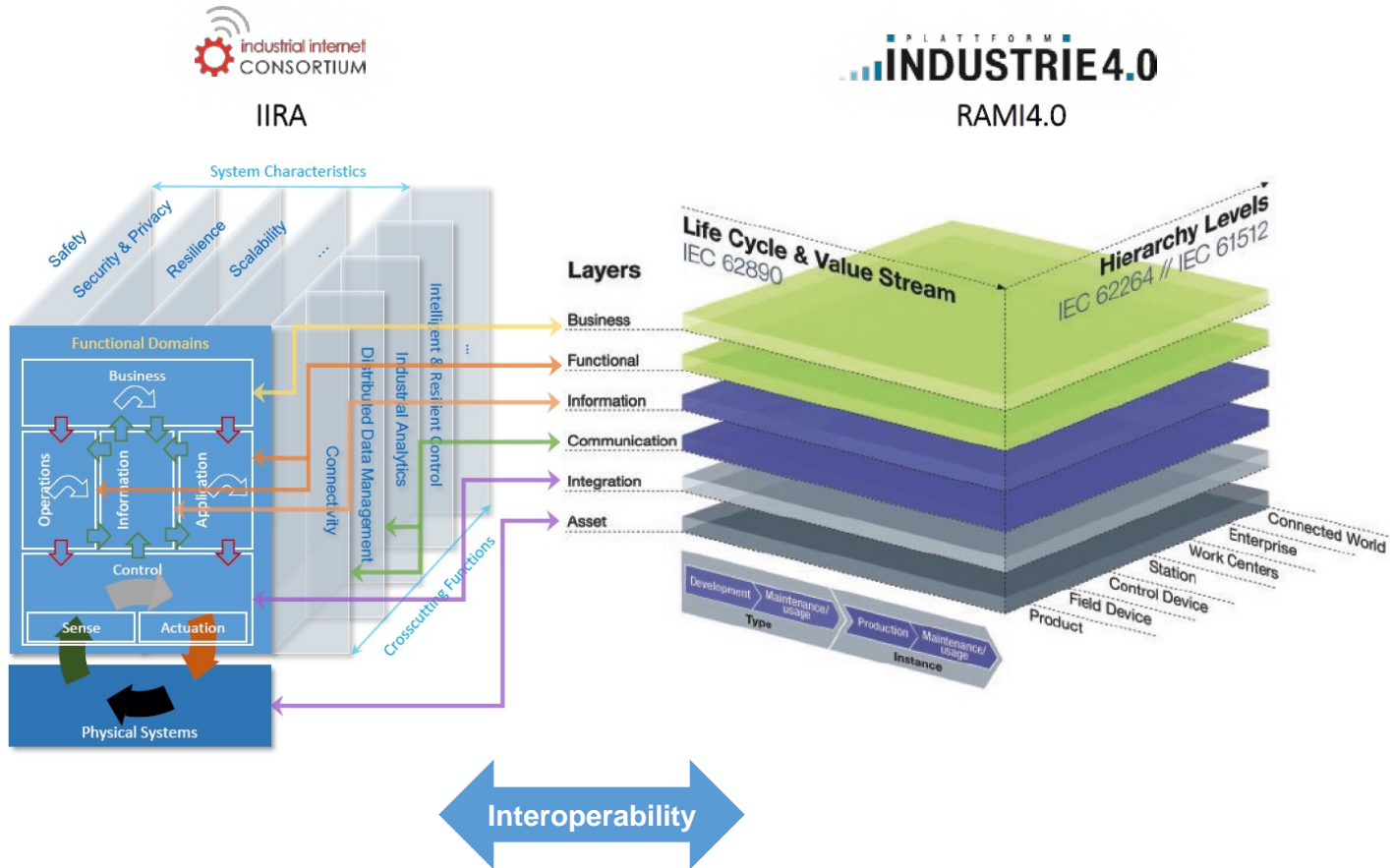
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**Cross-Domain
Interoperability**

3

**Testbed
Collaboration**

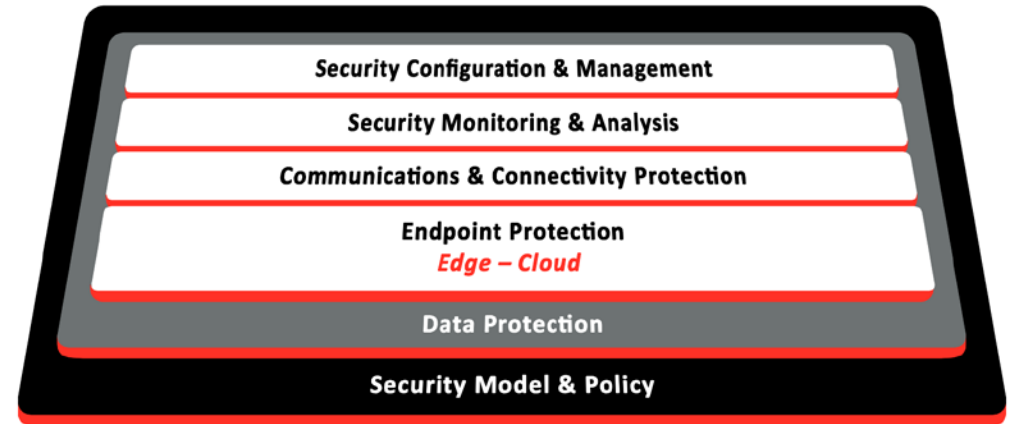
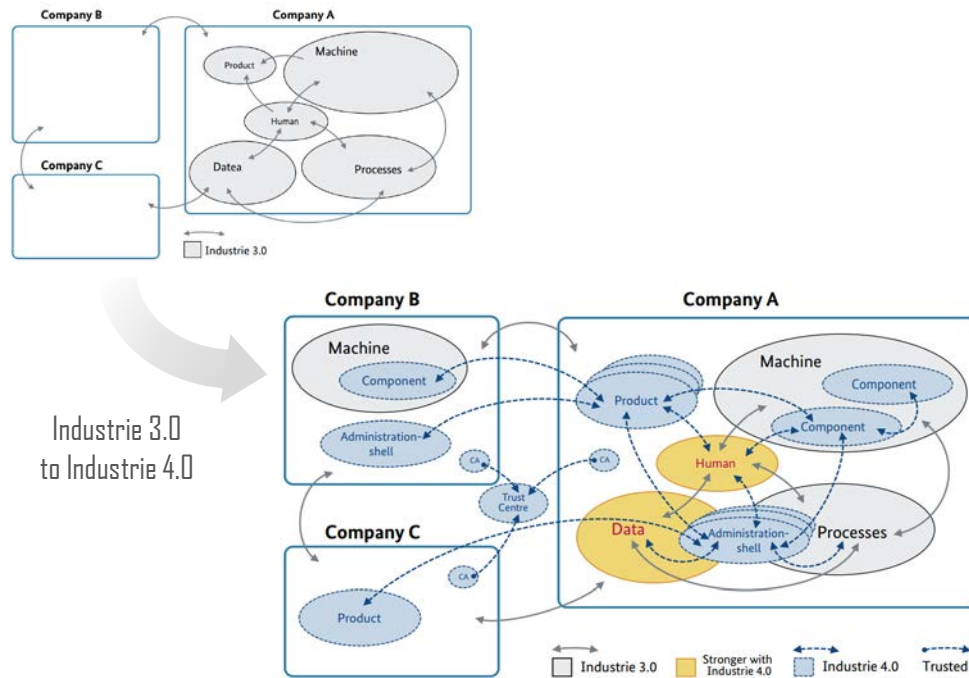
Global standards are the driver for integration a compatible architecture that enables interoperability



Security frameworks to address security issues in Industrial Internet of Things

Security in Industrie 4.0 and Industrial Internet is a common task...

... and needs a structured approach to be successfully managed

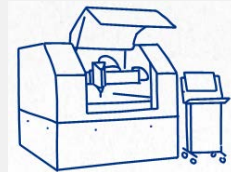


Plattform Industrie 4.0 and Industrial Internet Consortium Testbeds

FROM REAL WORLD PROBLEM...



...TO TESTBED...



...TO REQUIREMENTS...



...TO STANDARDS...



PLATTFORM
INDUSTRIE 4.0

industrial internet
CONSORTIUM

Implementation of the
RAMI4.0 Administration
Shell and Component
Automation

PEPPERL+FUCHS



LNI4.0 LABS NETWORK INDUSTRIE 4.0

Validation of the
Industrie 4.0
components concept in
an existing environment

FESTO SAP

SIEMENS

LNI4.0 LABS NETWORK INDUSTRIE 4.0

Smart Manufacturing
Connectivity for
Brownfield



Smart Manufacturing
Facility Operations



Forklift Fleet
Management (Track & Trace
Testbed)

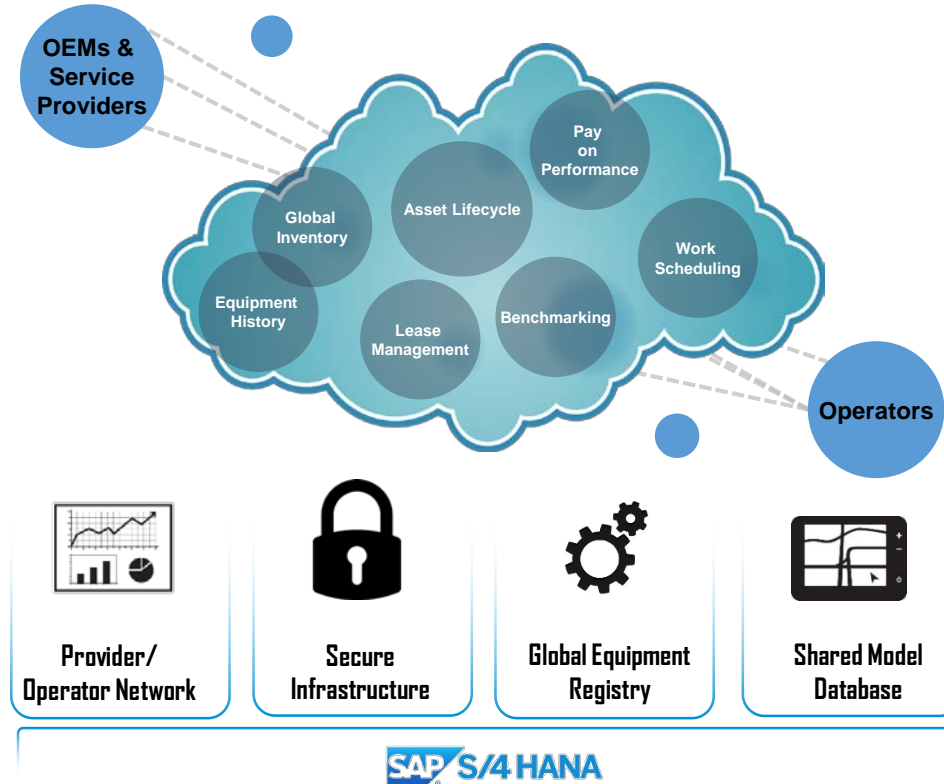


Digital Asset Live-Cycle

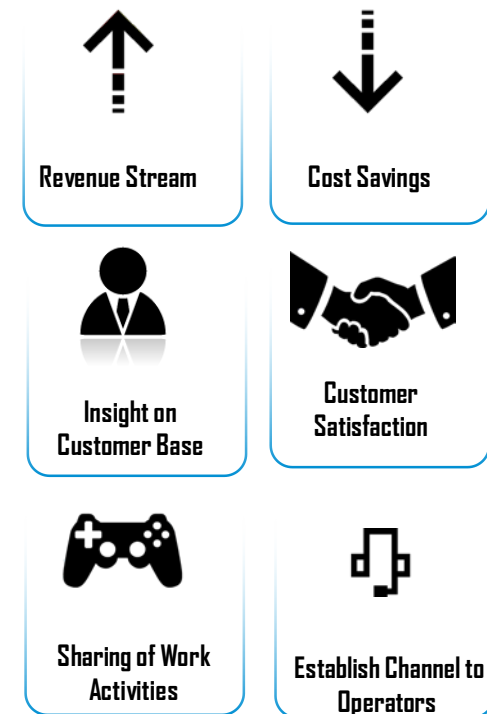


How standards drive our business: SAP Asset Intelligence Network

Challenges

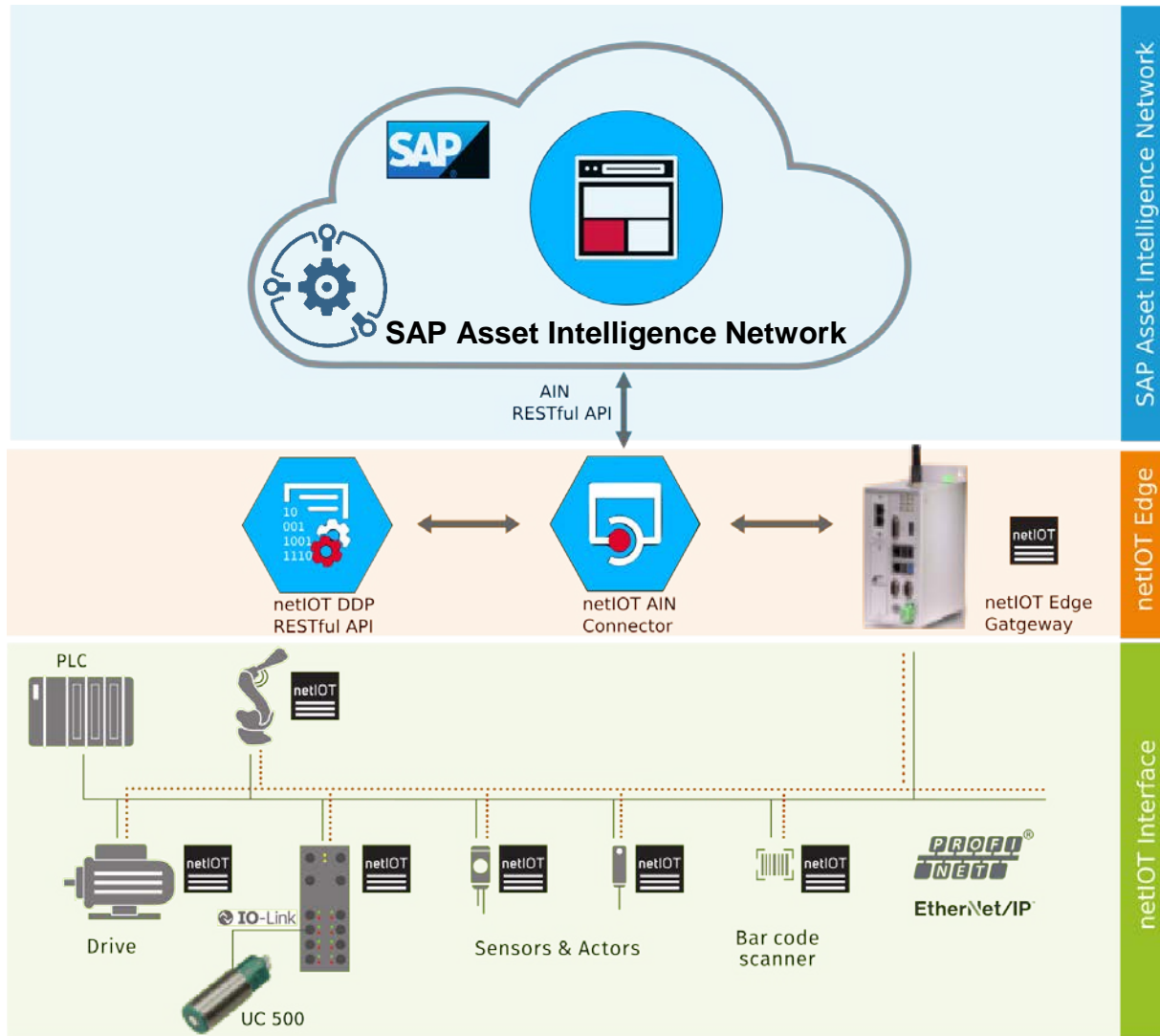


Value





How Asset Management benefits from a **testbed approach**

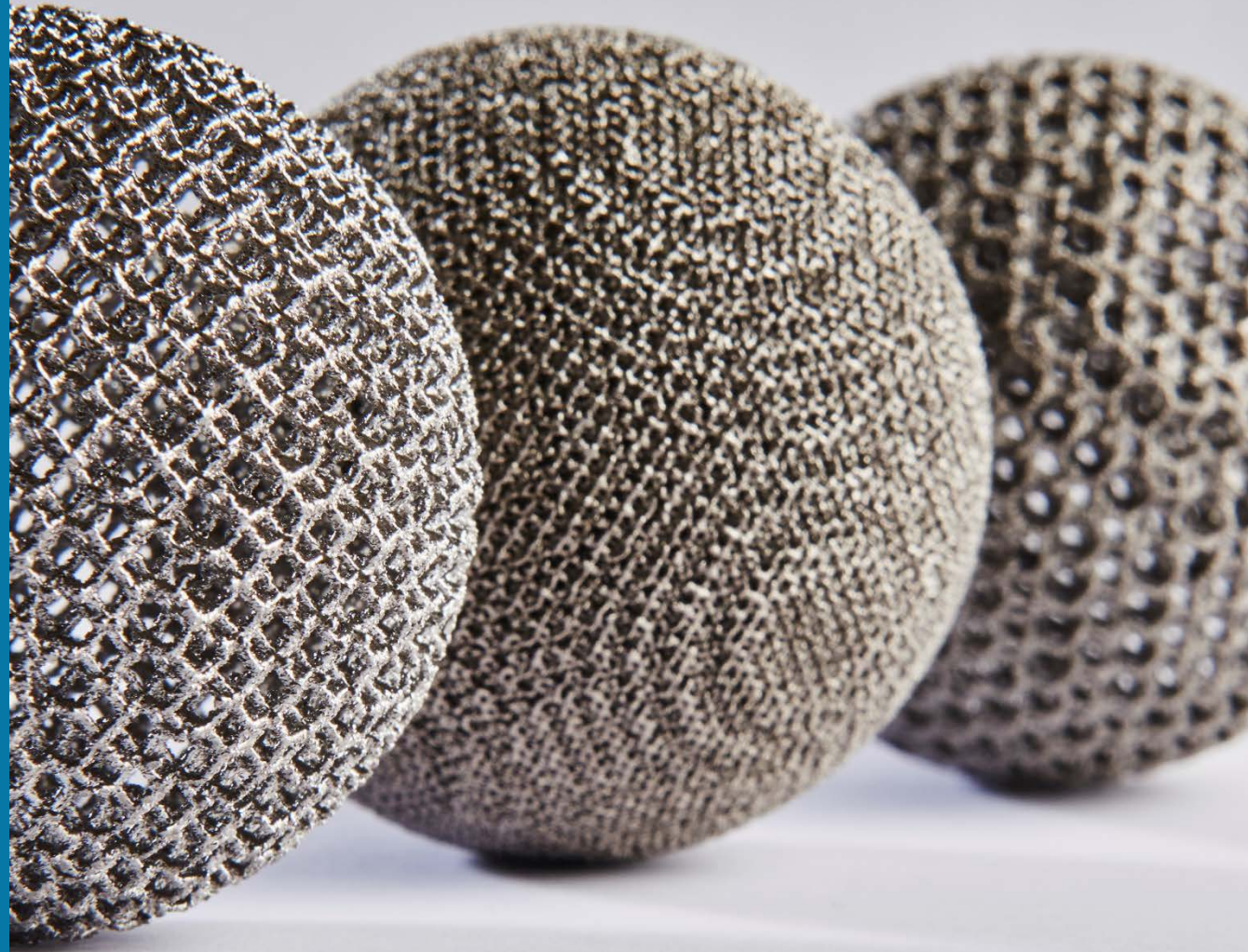


from **Things**



"Technology innovations such as 3D printing are revolutionizing traditional manufacturing and redefine our notion of the industrial supply chain," said Bernd Leukert, member of the Executive Board, Products & Innovations, SAP SE

"This agreement with SAP adds an important UPS capability to help customers right-size inventories and lower short-run production costs, and help entrepreneurs bring their ideas to life faster than ever." said Stan Deans, president, UPS Global Distribution & Logistics



SAP

to **Outcomes**

from **Things**

ebmpapst

“Everyone from the shop floor to the top floor should work with the same information base, so it made sense to use SAP for production. We streamlined all organizational processes and increased first pass yield to 99.5%.” Thomas Wagner, Chief Operating Officer, ebm-papst Inc.

SAP

to **Outcomes**



SAP E2E solution portfolio connecting things to enable **LIVE** business



Connected Logistics



Connected Vehicles



Connected Manufacturing



Connected Assets



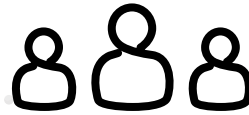
Connected Consumer



Digital Farming



Smart Cities

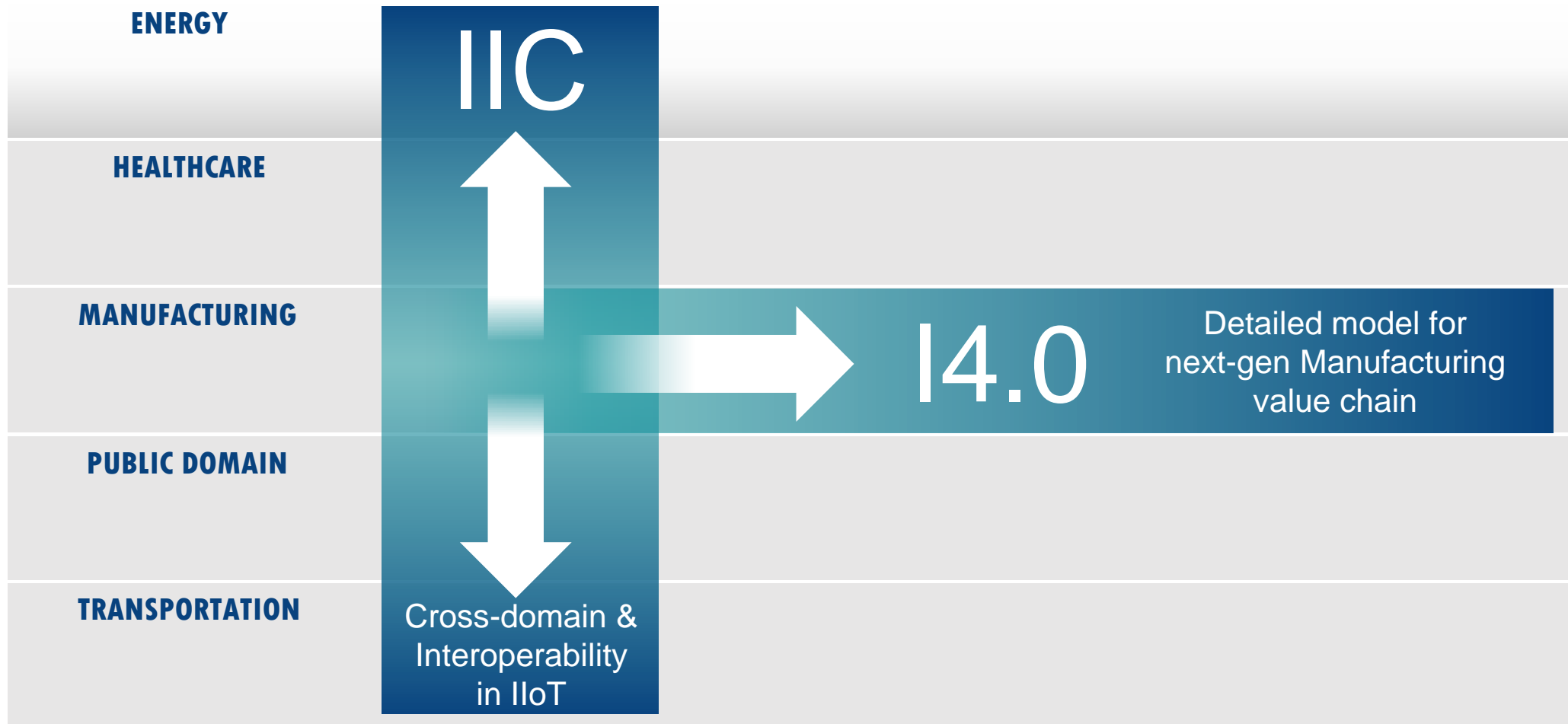


IoT Foundation and Application Services (incl. machine learning, predictive algorithms)

SAP HANA Cloud Platform (incl. Big Data Hub) / SAP HANA platform

IoT Connectivity, Security and Edge Computing (incl. Plat. One)

Domain focus areas of IIC and Plattform Industrie 4.0 are complimentary



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**Testbed
Collaboration**

Plattform Industrie 4.0 and IIC: Joint Task Groups



TEST



Architecture Alignment	<p>JTG1: Products, Production Systems and IIoT Solutions – the Lifecycle Perspective Johannes Diemer (HPE)*, Eric Harper (ABB)</p>	<p>JTG3: Collaboration on Testbeds Thomas Hahn (Siemens), Joseph Fontaine (IIC)</p>	<p>JTG5: Security Michael Jochem (Bosch), Sven Schrecker (Intel)</p>
	<p>JTG2: Architecture Mappings (RAMI4.0 and IIRA) Martin Hankel (Bosch), Shi-Wan Lin (ThingsWise)</p>	<p>JTG4: Requirements for Standardization and Interoperability Dirk Slama (Bosch), Michael Hoffmeister (Festo)</p>	<p>JTG6: Preparation of Summaries and Roadmap Proposal Henning Banthien (Plattform), Richard Soley (IIC)</p>

from **Things**

“I am very pleased that the Plattform Industrie 4.0 is now working together with the American [System] IIC on standardization issues. This will help moving things forward. And we all know: If you are defining the standards, you are in a pole position.” *Chancellor Merkel*

SAP

to **Outcomes**





Thank You!

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EVP DIGITAL ASSETS & IOT | SAP SE

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