Labs Network Industrie 4.0

Shaping the digital transformation of manufacturing together

2017

The digital transformation needs a broad-based foundation

Plattform Industrie 4.0 in Germany

… is a project of and for society as a whole …

… which requires close cooperation among the private sector, academia, politics, trade unions and associations …

… and needs to be translated into practice and be implemented right now.

The Platform Industrie 4.0 provides support for the coordinated and organized transition to the digital economy in Germany.

Source: Plattform Industrie 4.0

Labs Network Industrie 4.0

Cooperation with Plattform Industrie 4.0 and Standardization Council

PLATTFORM INDUSTRIE 4.0

- Recommended actions
- SME mobilization
- International cooperation

STANDARDIZATION COUNCIL INDUSTRIE 4.0

- Initiation of cross-sector standards
- Coordination of national and international standards
- Strengthen the German international collaborations

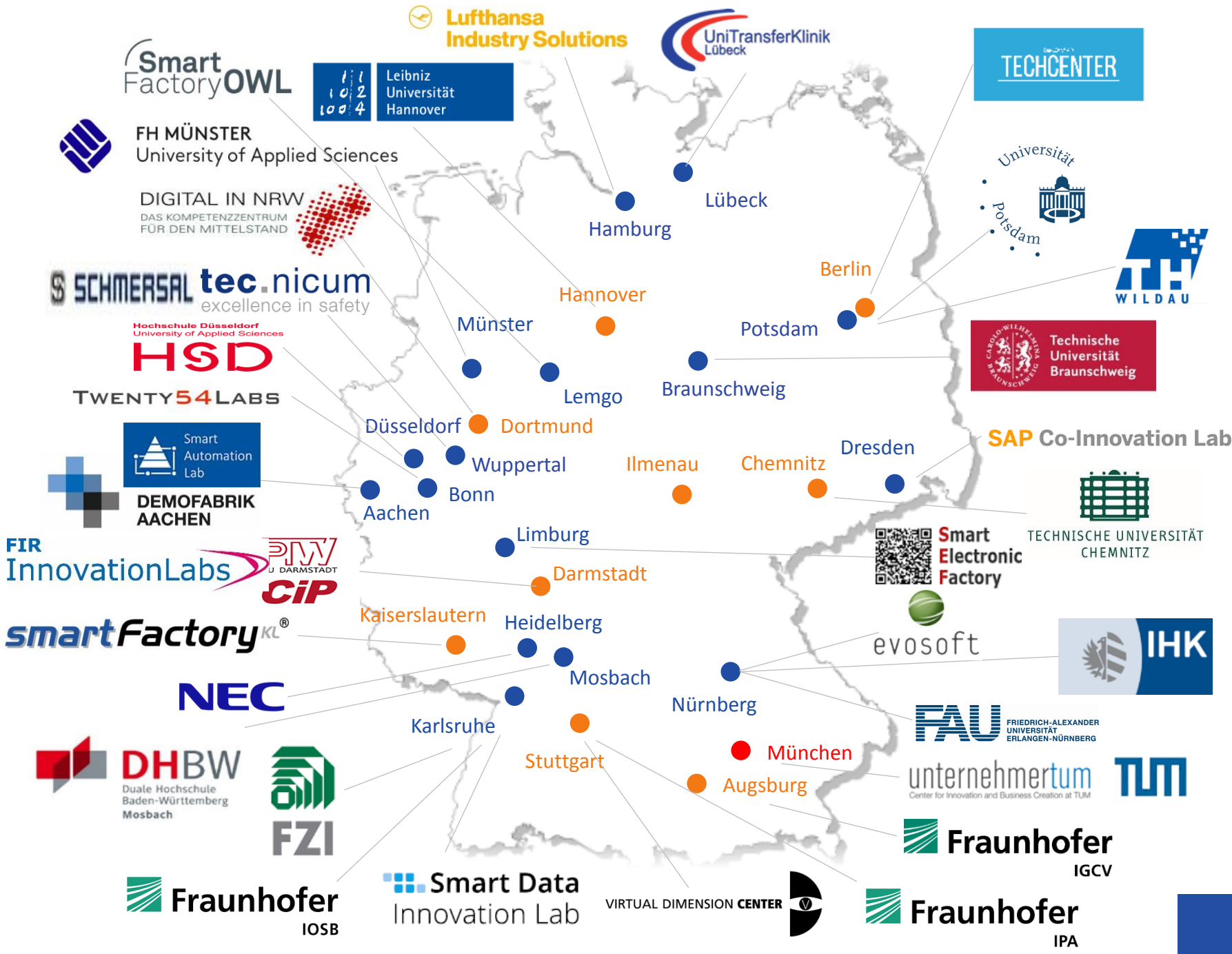
LNI4.0 LABS NETWORK INDUSTRIE 4.0

- Network of test centers
- Practical testing
- Validated input for standardization

LNI labs

.. in Germany

- more than 30 test labs as of March 2017
- regional distributed
- local contacts
- technical variance
- international cooperations



SWITZERLAND INNOVATION

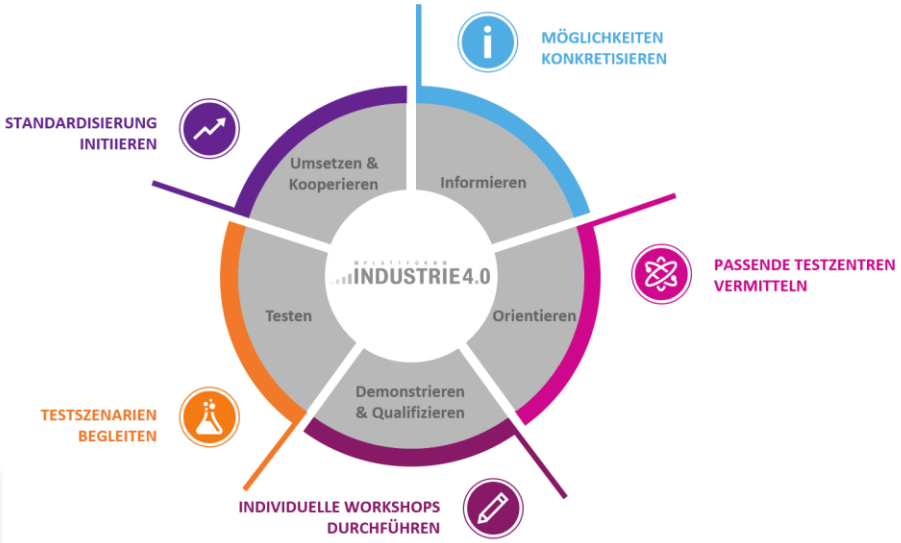
INDUSTRIE 4.0 ÖSTERREICH

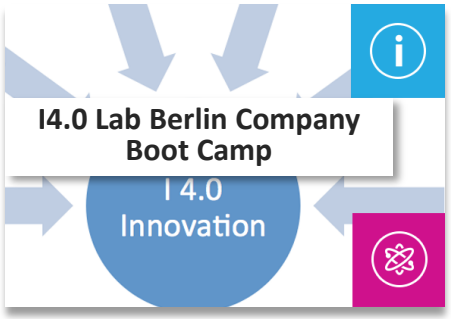
Mittelstand-Digital — Mittelstand 4.0 – Kompetenzzentren

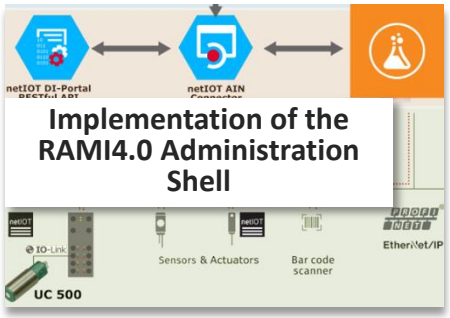
de:hub digital ecosystems — Digital Hub Zentren

Test cases (examples)

LNI4.0 LABS NETWORK INDUSTRIE 4.0





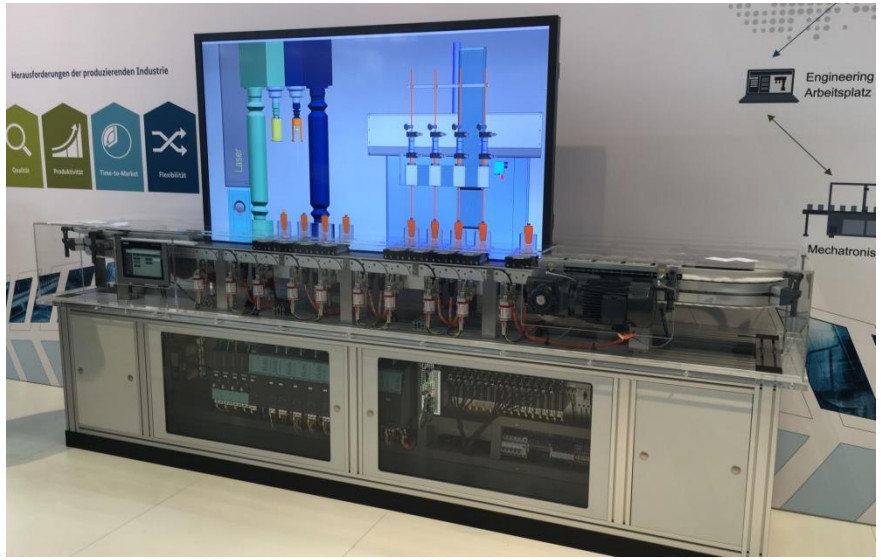


Test cases (examples)

Industrie 4.0 Administration shell

Validation of the Industrie 4.0 components concept in an existing environment

Objective of the test scenario



- The goal of the project is an implementation of the RAMI4.0 Administration Shell with openAAS to validate the concept of Industrie 4.0 components in an existing environment. Based on selected application scenarios of platform Industrie 4.0 there were defined several use cases generating benefits for users of Industrie 4.0.
  This will result in appropriate standardization activities for Industrie 4.0.
- The test scenario enhances the IT Gipfel 2015 demonstrator which shows the connection between real and virtual world. The demonstrator combines a physical flexible transportation system (Multi-Carrier-System from Siemens AG and Festo AG & Co. KG) and a virtualized production plant. Both are connected to a cloud to analyze usage and energy consumption data of the carriers.

Test cases (examples)

Application for Manufacturing Industry and Logistics

LNI4.0 LABS NETWORK INDUSTRIE 4.0

Automatic root cause analysis for the tombstone effect

Objective of the test scenario

- Transformation of defect recordings and quality reports into specific, digital process knowledge, which can be used as an input for process optimization.
- Decrease production errors by automatically adjusting the production process parameters.

Feedback from LNI Workshop:

„The root cause of errors can be narrowed down more easily with modern Data Mining based on collected product and quality data as well as additionally collected SMT process data, e.g. room temperature, humidity, temperature profiles, etc. This kind of automatic feedback is not available today.

Gerd Ohl, Managing Director Limtronik GmbH

„The procedure model is very well structured and efficient. The heterogeneous setup was beneficial, because results are more sustainable. The work results and the timeline have my full commitment.“

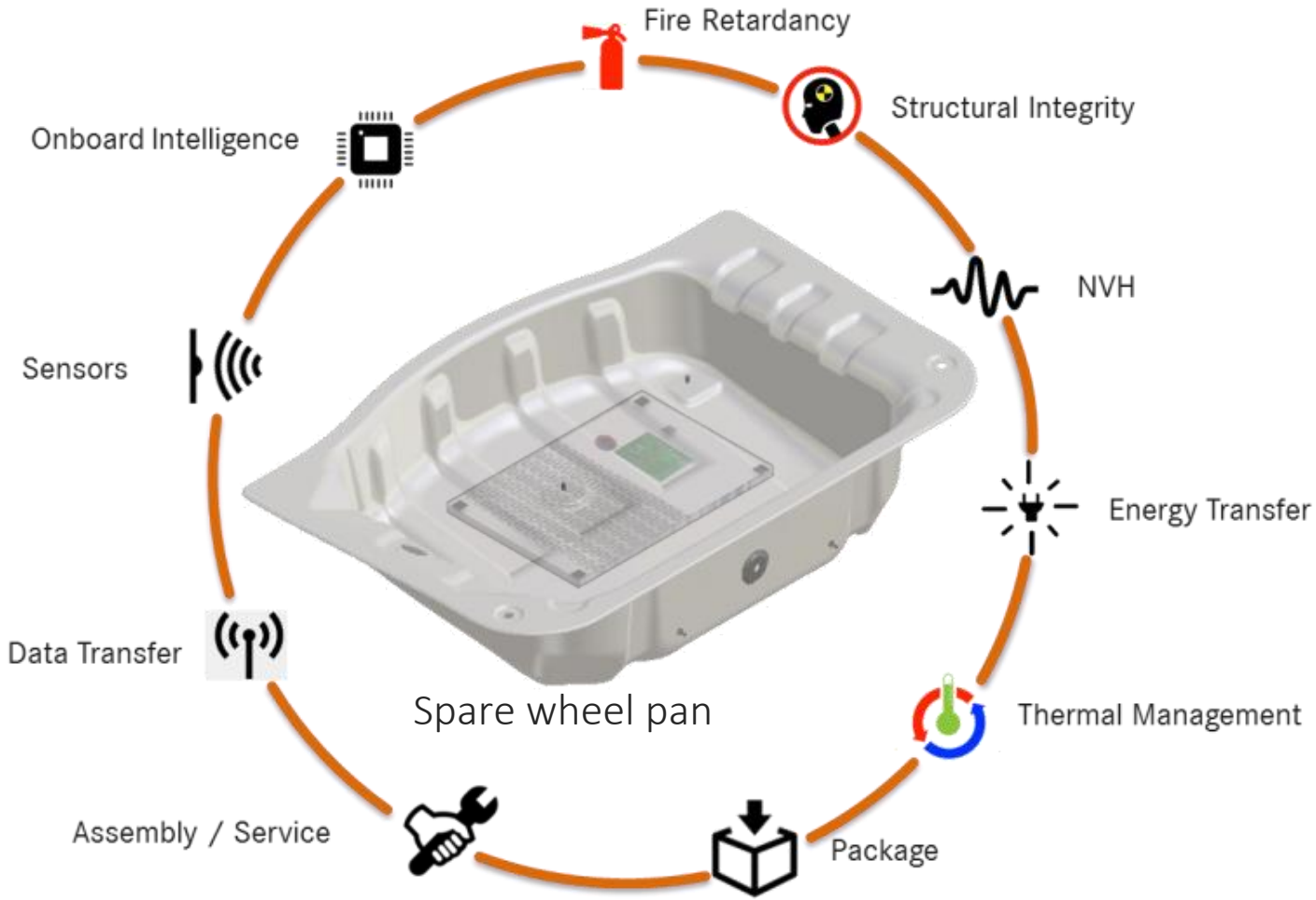
Dieter Meuser, CTO iTAC Software AG

Smart Electronic Factory

ASYS GROUP · DUALIS · DÜRR · FUJI innovative spirit · integrierte informationssysteme · iTAC SOFTWARE · LIMTRONIK · PROALPHA · Rexroth Bosch Group · THM · UNITY CONSULTING & INNOVATION

Test cases (examples)

Composites 4.0 – Smart Structures



Source: Swinburne University Melbourne, Arena 2036 & members

Test cases (examples)

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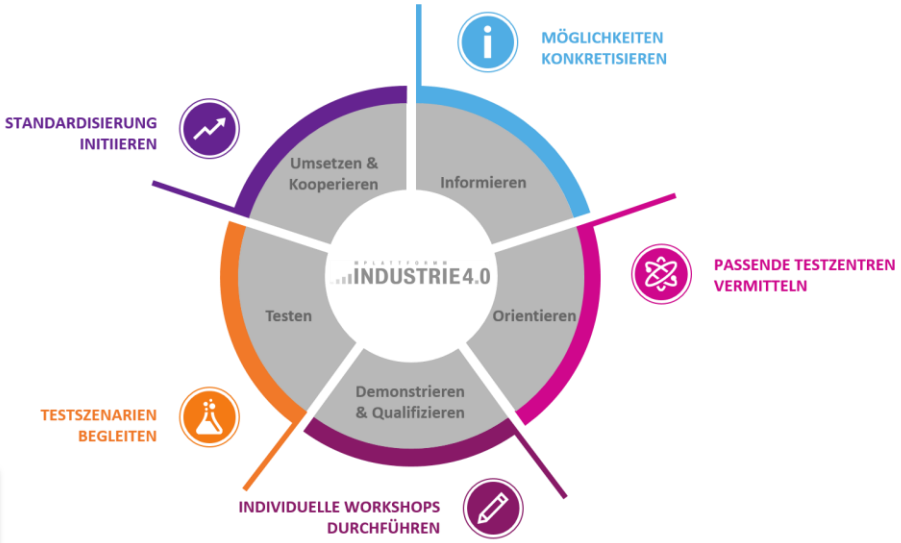

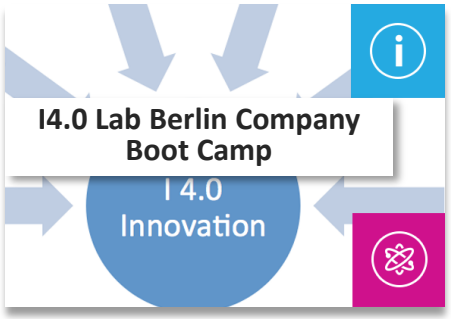

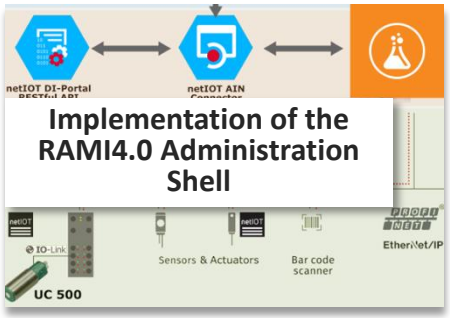

Who is behind LNI?

LNI4.0 LABS NETWORK INDUSTRIE 4.0

ZVEI: Die Elektroindustrie
Dr. Klaus Mittelbach
Treasurer

In close cooperation with
PLATTFORM INDUSTRIE 4.0

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Vice Chairman

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BITKOM
Wolfgang Dorst

FESTO
Prof. Dr. Peter Post

Hewlett Packard Enterprise
Johannes Diemer

Thank you!

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