

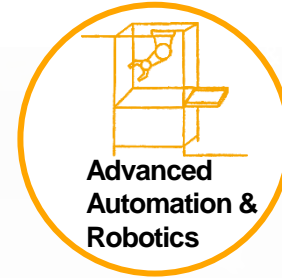


TechExperience **INDUSTRY 4.0**

BIG PICTURE INDUSTRY 4.0

Big Picture Industry 4.0

Megatrends in Operations



Operations
beyond
tomorrow

Big Picture Industry 4.0

Basis, Goal, Requirements



WHAT IS THE BASIS FOR INDUSTRY 4.0?



IT IS DRIVEN BY **DISRUPTIVE** INFLUENCES

IT IS THE **NEXT PHASE** IN THE DIGITALIZATION OF MANUFACTURING

IT IS ENABLED BY **NEW TECHNOLOGIES**

IT IS THE APPLICATION OF THE **"INTERNET OF THINGS"** IN MANUFACTURING



WHAT IS OUR GOAL WITH INDUSTRY 4.0?

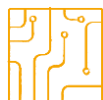


All Objects on the Shop Floor ...

- Can Sense the Environment and Communicate
- Become Tools that Understand Complexity and Respond to it



WHAT IS NECESSARY FOR INDUSTRY 4.0?



SENSORS IN EVERYTHING



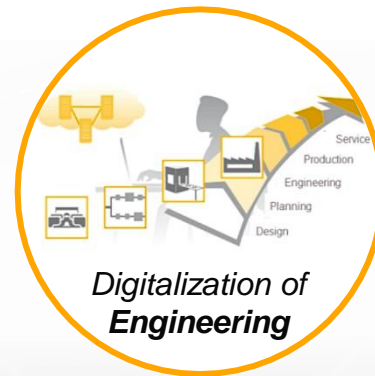
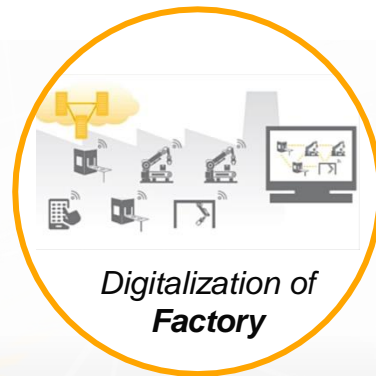
NETWORKS EVERYWHERE



ANALYZE EVERYTHING

Big Picture Industry 4.0

Main Impact on Operations



Industry 4.0 @ Continental Automotive

Highlights and Success Stories



We have installed **1,800 CoBots** until December 2020
@ Continental Automotive

HMI: Remote Expert
> 15 Plants equipped with 102 Glasses and 360 active users

MagicAOI:
24 plants connected
>150 Mio collected pictures

More than **50 Industry 4.0 projects** running

Industry 4.0 catalogue:
Industry 4.0 product catalogue available

Robot process automation:
Several implementations already live

> **300 autonomous AGVs** in place

Rollout of standardized **AI and Big Data** Applications on shop floor ongoing

MagicAOI 24 plants connected;
12 customer approvals

Seamless Indoor Geolocation: First plants with full geolocation implementation based on UWB

MES / Data Lake: MES connected to Manufacturing Data Lake, implemented for >**35 locations**

Digital Supply Chain:
Supply Risk Management 4.0 to reduce external effects

Additive manufacturing:
Active community with >**300 members**

25 subprojects to achieve **touchless material flow**

Big Data / AI (PQ):
International team of competence centers established

Dock & Yard Management:
Two plants already live with worldwide standard

Automated replenishment / SARA: 240 SMDs & backend lines order by themselves based on AI algorithms;
worldwide SMD lines now running with SARA

More than **75 Smart Equipment** projects in planning or rollout

July 16, 2021

Dr. Sami Krimi © Continental AG

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Big Picture Industry 4.0

Smart Automation – Highlight in Standardization



Smart Equipment & Robotics



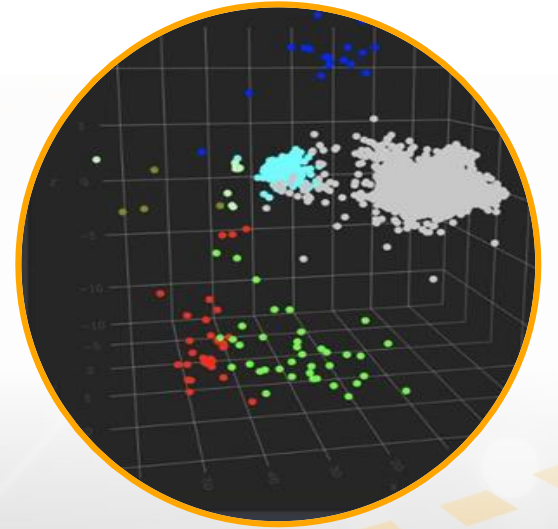
Big Picture Industry 4.0

Big Data – Highlight in Data Transparency



Big Data & Factory Applications

Applied Machine Learning



Big Picture Industry 4.0

New Working Environments & Future Learning



New Working
Environments



Human-Machine
Collaboration



New Learning
Concepts

Big Picture Industry 4.0

Factories of the Future – Smart & Sustainable



- › Climate Neutral Production
- › Modular Manufacturing Concepts
- › Attractiveness of the Factory
- › Collaborative Working / Smart Learning
- › Digitalization & Robotization

THANK YOU!