



# Future **Work** Lab

Innovation Lab for Work, People  
and Technology



GEFÖRDERT VOM



Bundesministerium  
für Bildung  
und Forschung

# Future Work Lab – Organization

Project team:



Universität Stuttgart

Partner:



SÜDWESTMETALL

FESTO SIEMENS DAIMLER

Rexroth  
Bosch Group



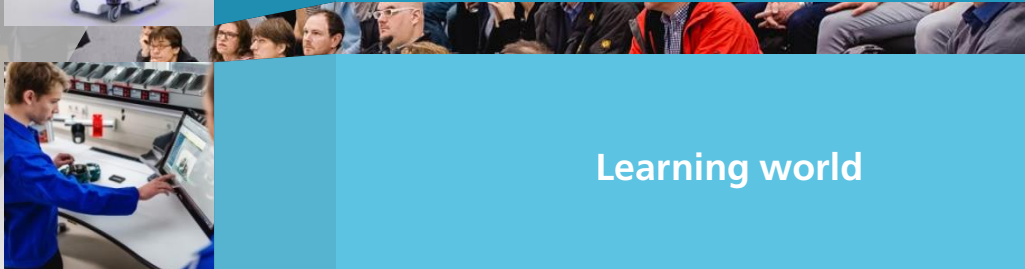
TRUMPF



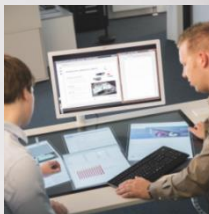
VDMA DEKRA



Demonstrator world



Learning world



Idea world

# Demonstrator world



More than 40 demonstrators  
and live showcases

Involvement of stakeholders  
from research, industry,  
politics and society

Over 10,000 visitors by 2019

A man in a blue sweater and glasses is talking to a woman in a black top. They are standing in front of a table with a large circular diagram. The background is a blurred trade show or exhibition hall. A large blue diagonal graphic is overlaid on the right side of the image, containing text.

# Learning world

Competence development and consulting center

Offer of events, workshops and seminars

Offers for employers from SMEs to corporate groups, for factory workers to managers

# Idea world



Factory Oriented Think Tank:  
(Re-)think "Industry 4.0"

Evaluation of application  
scenarios and derivation of  
research topics

Involvement of the start-up  
community

# Future Work Lab

## HUMAN-ROBOT INTERACTION

- Simplified robot programming
- Collaboration with large-scale industrial robots
- *MonSiKo* – multimodal assembly assistance
- Robot as a coworker

## ARTIFICIAL INTELLIGENCE IN PRODUCTION

- Affective computing
- Data science track
- AR-based assembly
- Smart shift planning
- Explainable AI
- AI-based IT-Security

## ERGONOMICS AND SAFETY

- Adaptive work station
- Live visualization of ergonomics and strain
- Automated accident detection
- Proactive accident prevention
- *Stuttgart Exo Jacket*

## INTELLIGENT MACHINES AND PROCESSES

- Learning with machines
- Track&trace in assembly
- Digital twin for technical service
- Consistently networked machining processes
- *ThirdAI* – image recognition without programming

## DIGITAL ASSISTANCE SYSTEMS

- *App4Quality* – app-based quality inspection
- *FlexNote* – digital notes within reach
- KPI dashboard
- Digital work organization
- Gemba walk app
- Service-based employee assistance
- Molecular assembly system
- Camera-based assembly assistance
- Shift scheduling via mobile app
- Assisted and personalized assembly
- Context-adaptive human-machine interface
- Digital production steering
- Automated assembly planning with AR

## VIRTUAL ENGINEERING AND PLANNING

- Extended work desk
- Industrial holo deck
- Projection table
- *VRcademy*
- Digital industrial engineering at shop floor level

## QUALIFICATION AND LEARNING

- Open source assembly assistance *AMBOS-3D*
- Qualification with learning videos
- *linc* – the smallest seminar room of the future

## NETWORKED PRODUCTION SYSTEM

- MES-as-a-service
- Data visualization in realtime
- Mobile multi-machine operation
- Competence-based networked production
- Rule-based micro services with *MIALinx*
- Networked assembly system
- Smart localization
- Cloud platform *Virtual Fort Knox*
- *LeanDA* – lean data acquisition and process optimization

# Superpowers from the Future Work Lab

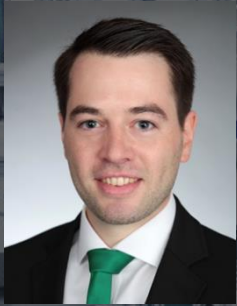


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Learning  
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