



# LIVEWORX

A NEW ERA IN PRODUCT LIFECYCLE INNOVATION

SESSION ID: AR1578B

# RETHINKING OPERATIONS AND TRAINING AT SCHAEFFLER WITH AR

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*Schaeffler Technologies AG & Co. KG*

May 17, 2023

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# Who am I?



**Tobias Klehr**  
26  
From Bavaria  
IT Solution Engineer

HOBBYS

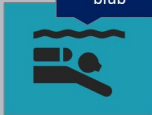
blub  
blub



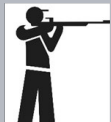
Motorbike



Traveling



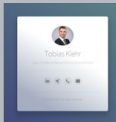
Diving – CMAS\*\*



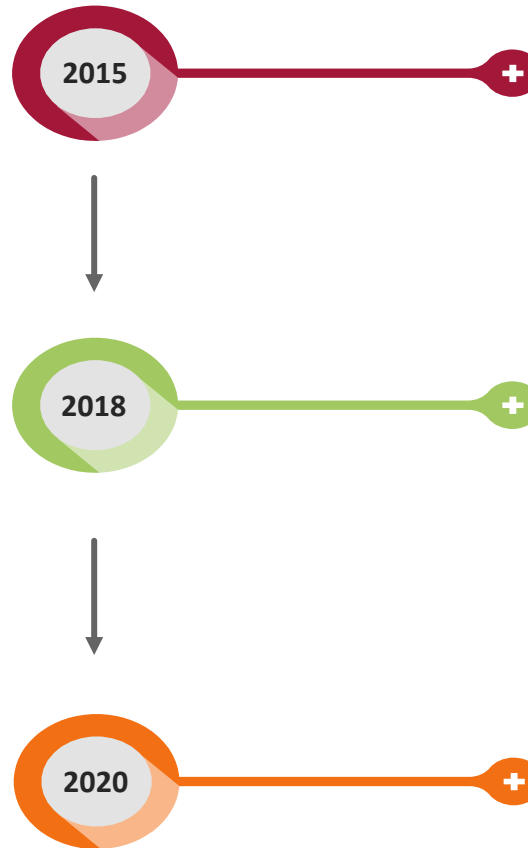
Sports marksman



water ski & wakeboard



DIY Prototyping & Web development



## Dual Studies

Mechatronics  
@  
DHBW Mannheim & Schaeffler

## SCHAEFFLER



## Dual Master

Mechatronics  
@  
FAU Erlangen-Nürnberg & Schaeffler  
Master Thesis finished and passed in 2020

## SCHAEFFLER



## Application Owner

Augmented & Virtual Reality




# Explore Augmented Reality @ Schaeffler


## 1 Augmented Reality @ Schaeffler



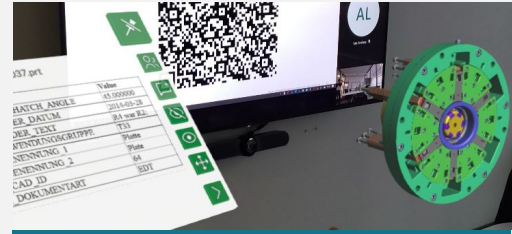
 **Project Information**


- Make Augmented Reality available at Schaeffler
- Starting point: Learning & Documentation
- Supported by 



 **PTC Tools**

- Vuforia Expert Capture (VUFEC)
- Vuforia Studio
- ThingWorx
- Creo AR



 **Project Status**

- Focus on **Remote Design Review**
- Further use cases in elaboration
- VUFEC and Creo AR in use

## 2 Key findings today



 **Findings Vuforia Expert Capture**

- SaaS beneficial in the maintenance context
- Cost reductions (onboarding, travel time, ...)
- New ways of learning & collaboration
- Increase of quality



## What is AR in distinction to VR?

**Augmented Reality (AR)** is one of the big **technology trends** right now.

It is an enhanced version of the **real physical world** using **visual elements** and **sounds**.

Referring to **qualification** we use AR for **process work assistance**: setup of machines, remote assist & assembly

**Benefit:** real-time use of information to learn



**Virtual Reality (VR)** creates its own cyber physical environment.

You can **learn** how to use **production machines** or difficult **process steps** which does not require a physical machine.



## How does it work?

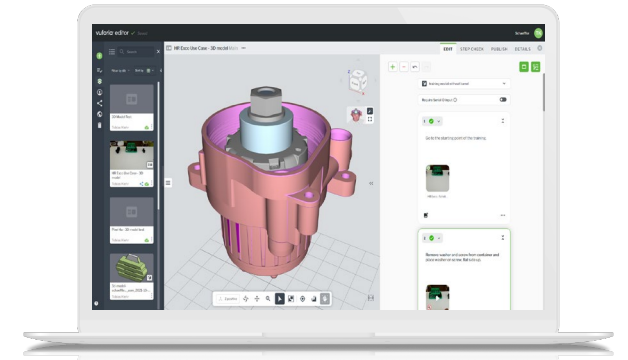
### Capture

- picture & video & audio
- steps
- bookmarks
- locations



### Author

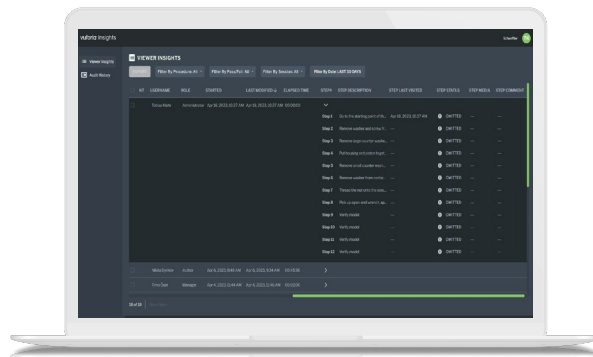
- part structure
- 3D model
- video & photos editing
- 3D markers



SaaS  
platform

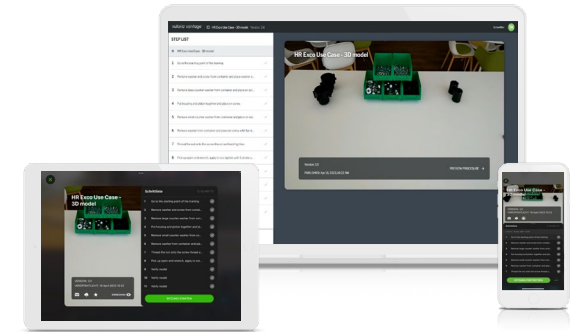
### Analyze

- real-time insights
- historic report generation
- csv export

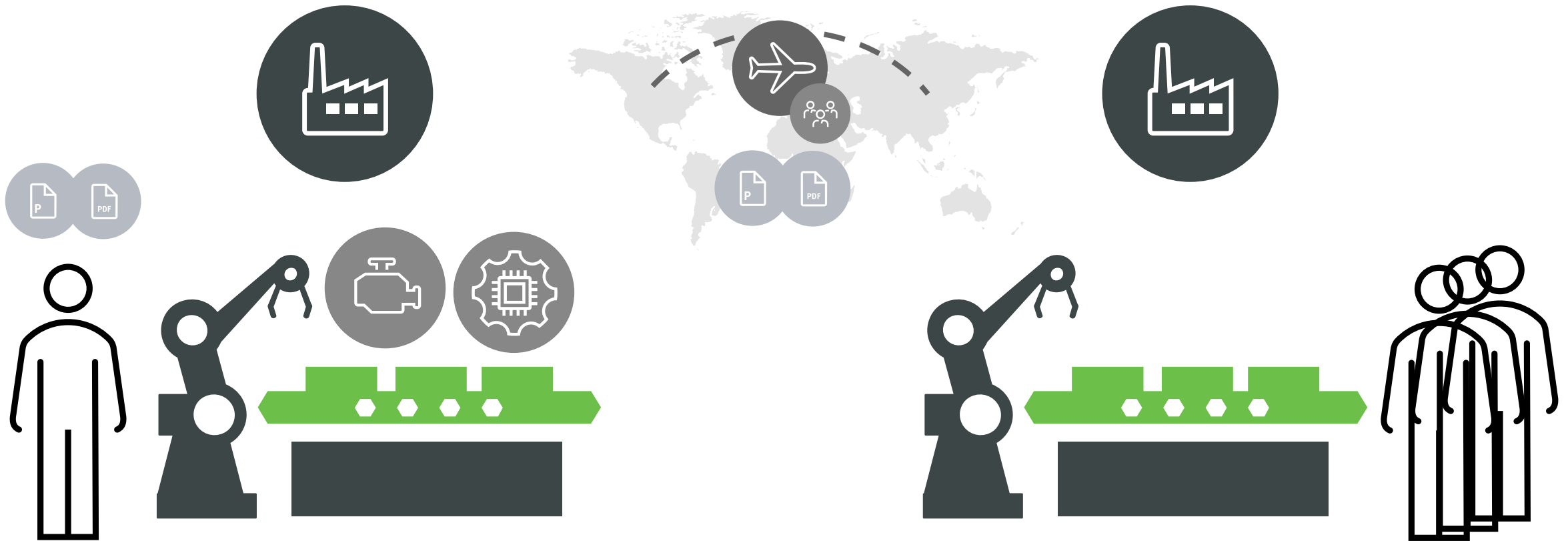


### Execute

- feedback
  - pass / fail
  - classification
  - confirmation
- data capture



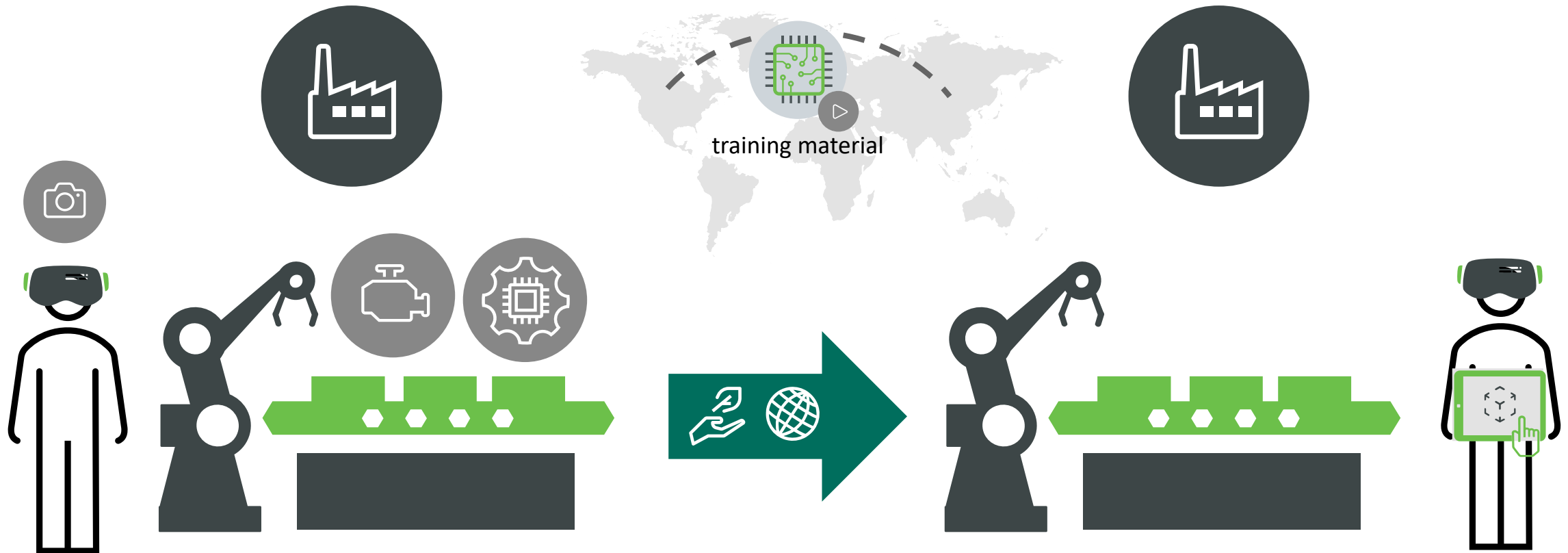
# Old way



- High panning effort
- Easy to update
- Mostly limited to images
- Low usage (mostly p2p training)

- High human resource consumption
- High CO<sub>2</sub> footprint

# New way

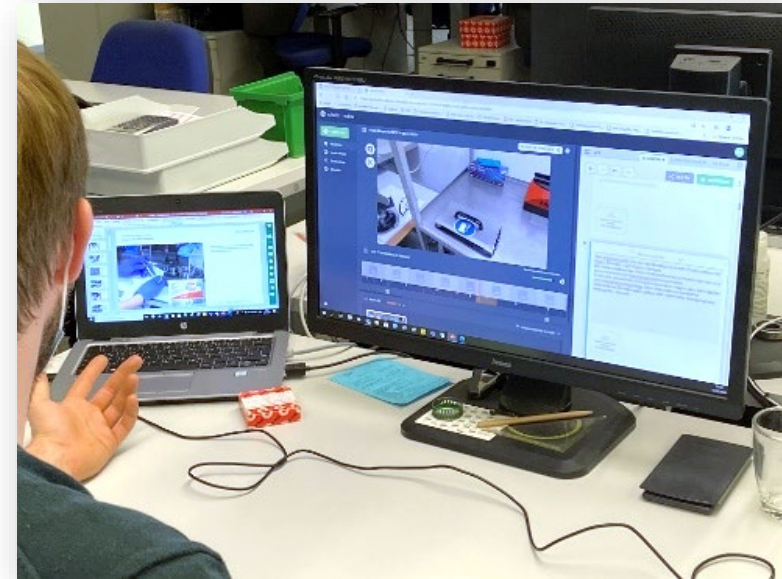


- Time savings
- Easier capturing and creation
- More wealth of information
- Fewer tool changes necessary

- Easy and fast onboarding
- Higher quality of training
- Reduction of travel costs
- Scalability

# Vuforia Expert Capture @ Schaeffler

## Going Paperless: Validation MPI



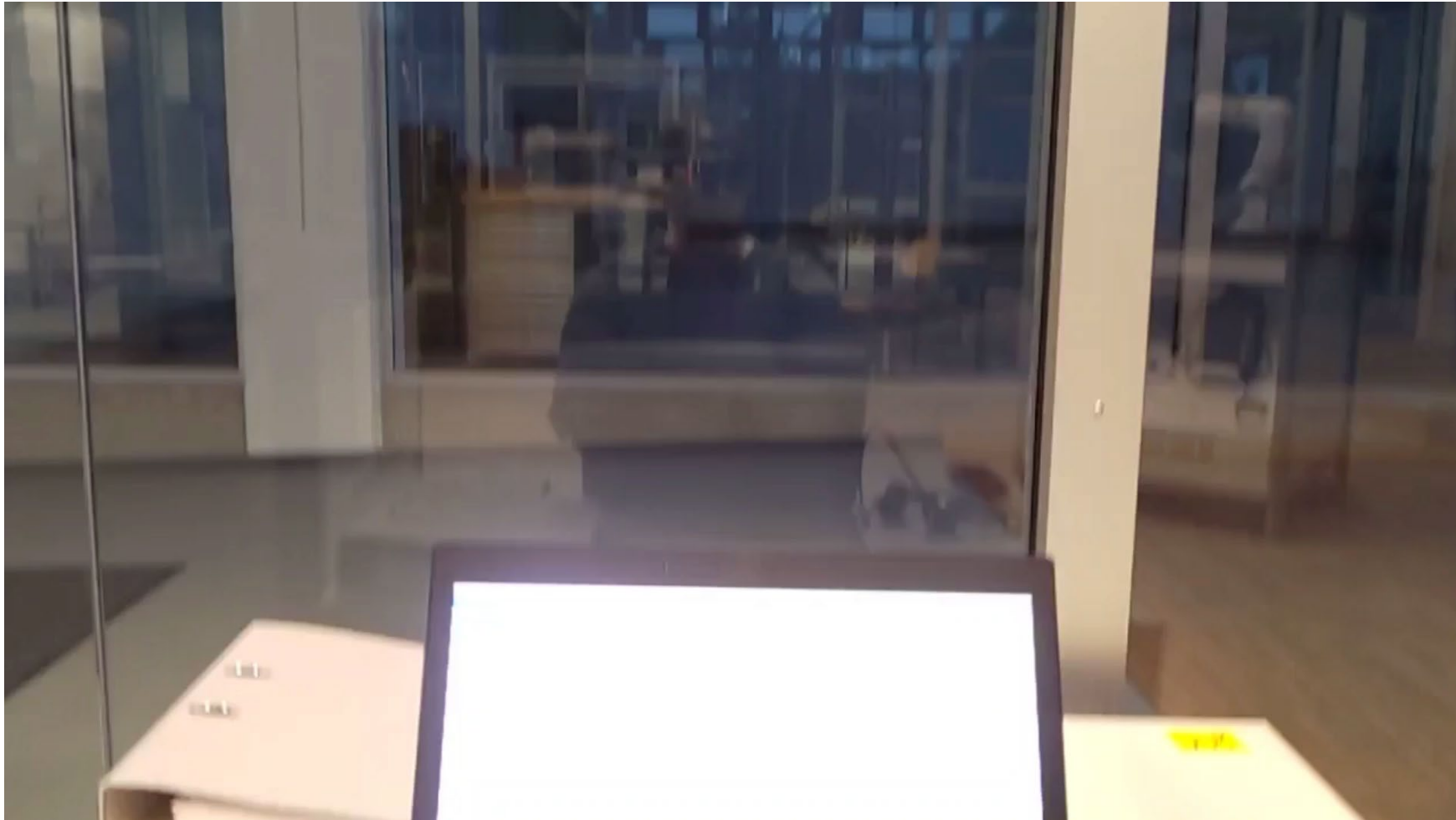
### Functional Role

### Tool Role

Skilled Worker	Viewer
Specialist	Editor
Specialist (keyuser)	Editor or Manager
Manager	Manager



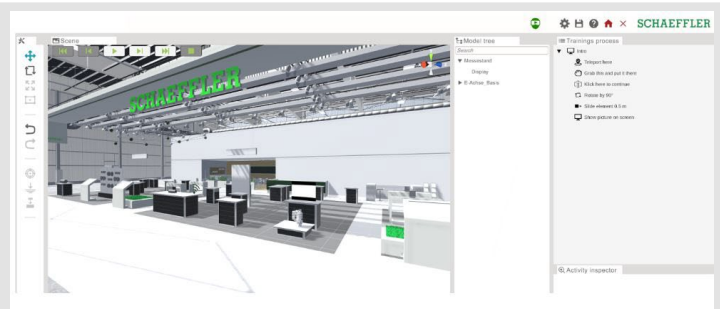
**Short video from the DigiLab Schweinfurt**



# Extended Reality @ Schaeffler



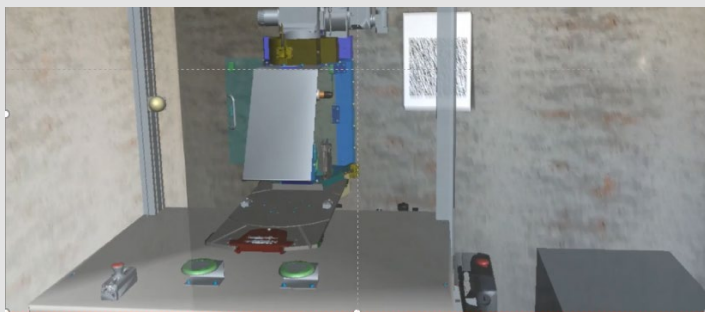
Worker live support  
(Remote Assist)



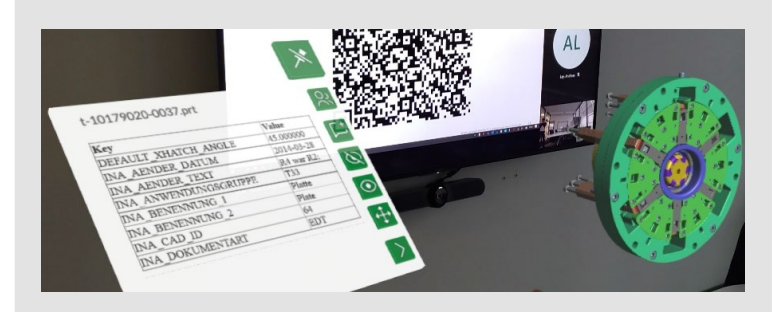
Preliminary employee training  
(Virtual Creator & Virtual Trainer)



Step by step instruction  
(Vuforia Expert Capture)

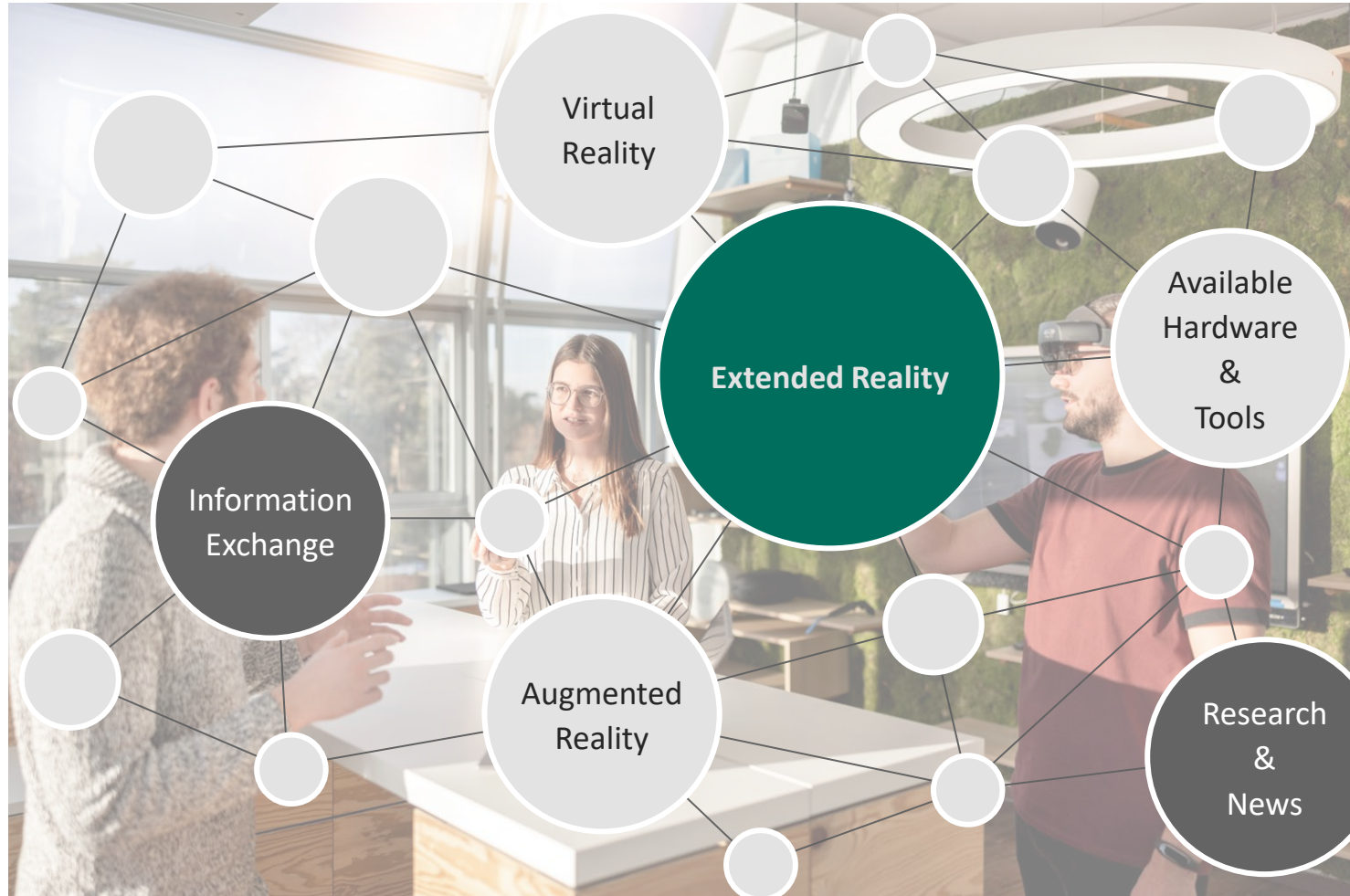


CAD data visualization  
(Creo AR)



Remote design reviews  
(Vuforia Studio)

## Network as a key driver for success





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# THANK YOU

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