



**Augmented Reality in Engineering, Manufacturing  
and Automotive**



# Problem

**The Engineering Process in the Manufacturing and Automotive Industry faces specific problems.**

- ✦ Decision-making about 3D models is based on design reviews on 2D surfaces (PC)
- ✦ High costs for prototypes (3D Print, Clay Models etc.)
- ✦ Prototypes are not up to date
- ✦ Changes to the prototype can only be implemented slowly
- ✦ Time-intense manufacturing of prototypes and 3D prints
- ✦ Long Time-to-Market
- ✦ Construction faults are difficult to identify on 2D screens & papers
- ✦ Collaboration and Communication between engineers are locally restricted
- ✦ High-quality visualization of large 3D CAD models is difficult in AR



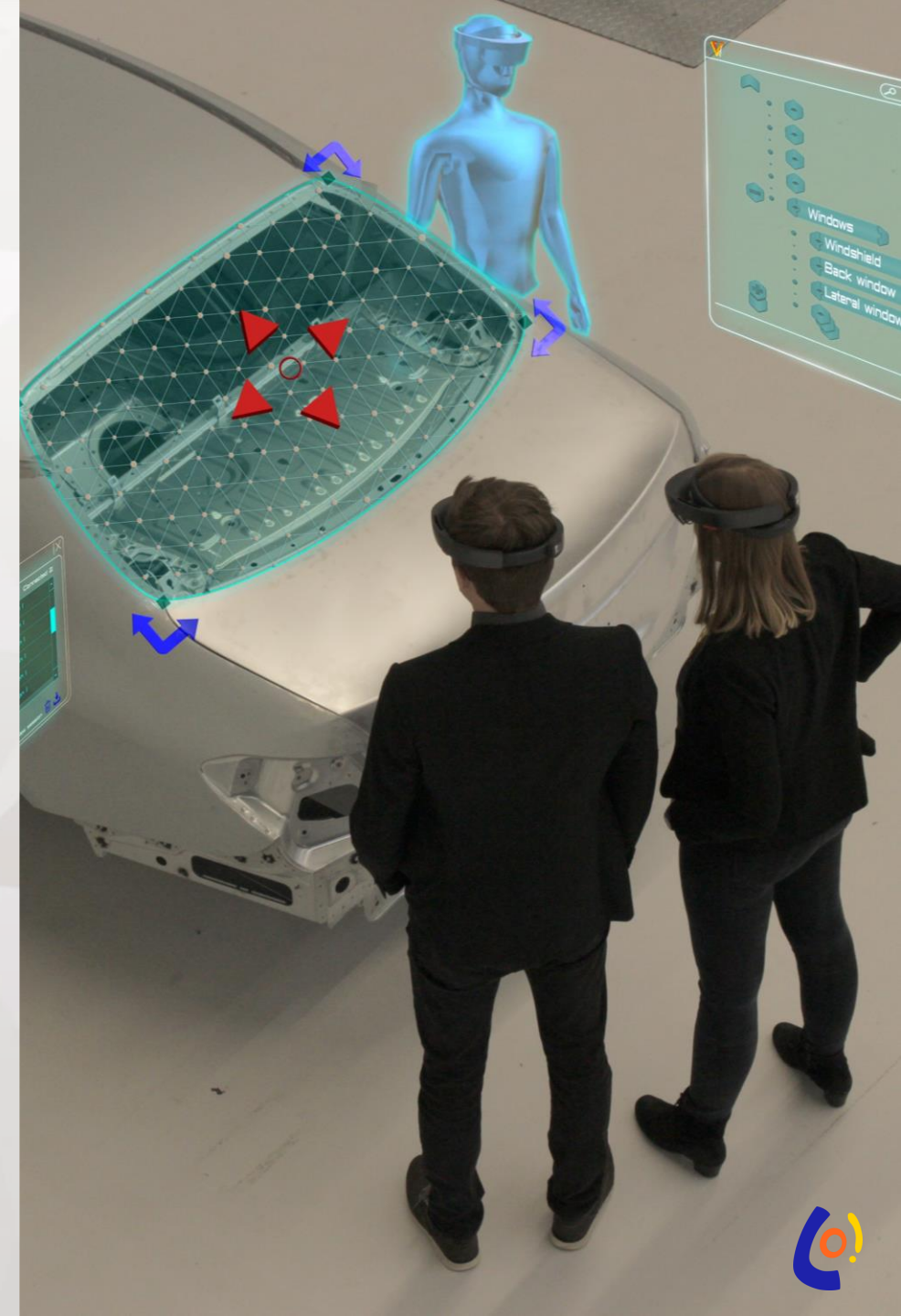
# Holo-View

## Collaborative AR Workspace for Engineers

Engineers are able to visualize and work with industrial 3D CAD models in Augmented Reality and collaborate with colleagues to lower costs for product design and increase the quality of products.

### Features

- Fast visualization of own 3D CAD models
- Powerful visualization of big 3D CAD models
- Secure Upload of confidential data
- Work with components and assembly groups
- Join collaborative sessions from all over the world
- Display 3D models in real world environment
- Use Holo-Stylus to interact intuitively and precise
- No extra costs for manual polygon reduction





## Problems of input methods in AR

Interaction with virtual content is a key component, but recent interaction methods in AR/VR/MR do not offer a precise and intuitive way of interaction.



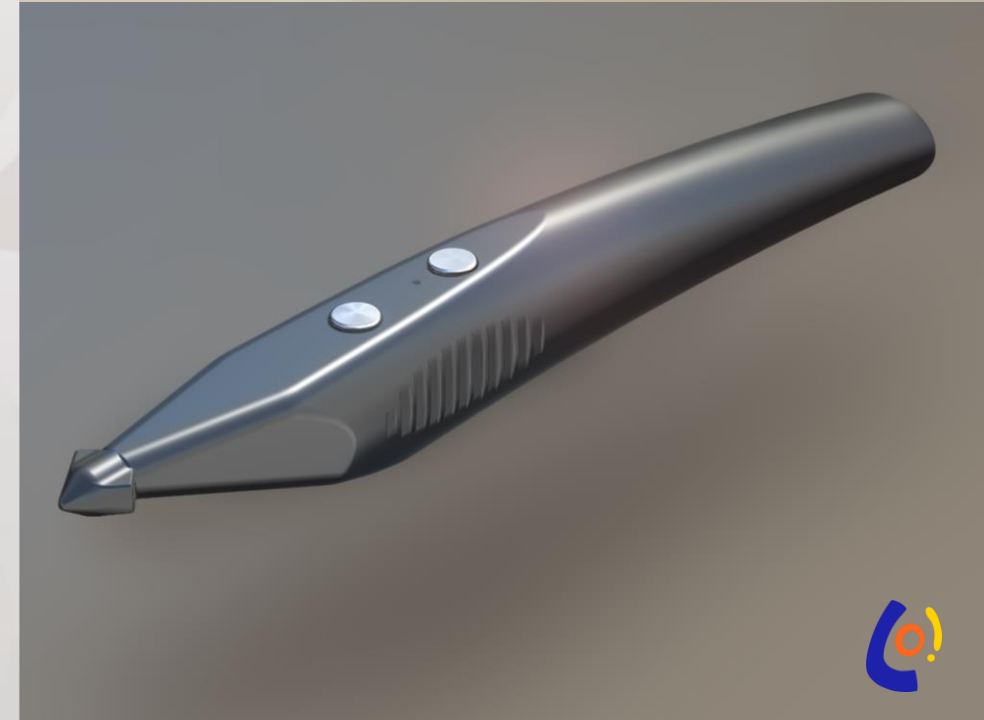
# Holo-Stylus

## Precise Interaction in AR

Holo-Stylus is an input device for smart glasses in AR/VR. Our own tracking technology enables submillimeter precision. The Holo-Stylus Dev Kit is available for HoloLens 1 and 2.

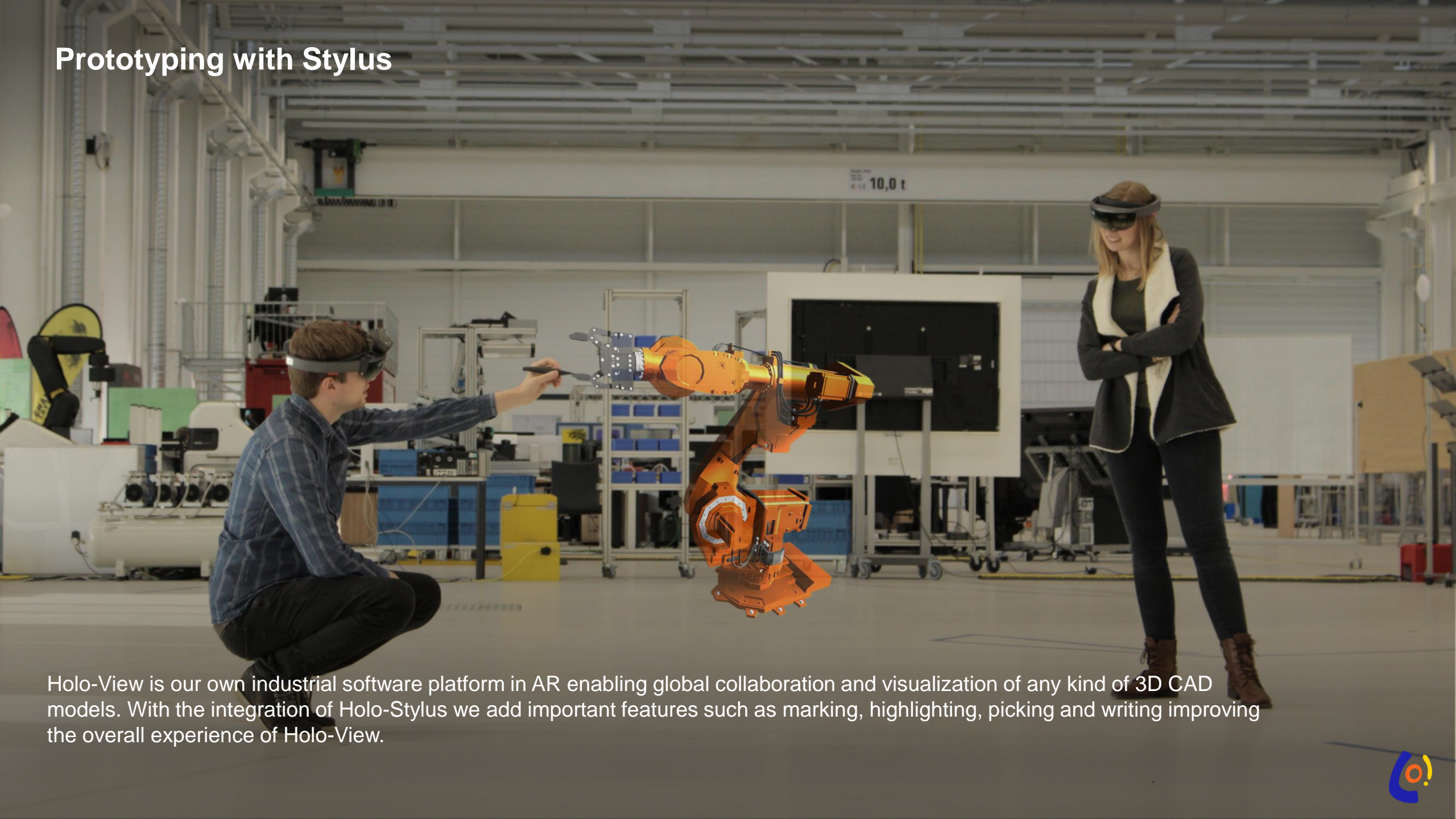
## Use Cases

- ✧ Design and Prototyping
- ✧ Measurement of real-world objects
- ✧ Quality Assurance
- ✧ Teach-in of robotic arms
- ✧ General interaction in AR





# Prototyping with Stylus



Holo-View is our own industrial software platform in AR enabling global collaboration and visualization of any kind of 3D CAD models. With the integration of Holo-Stylus we add important features such as marking, highlighting, picking and writing improving the overall experience of Holo-View.





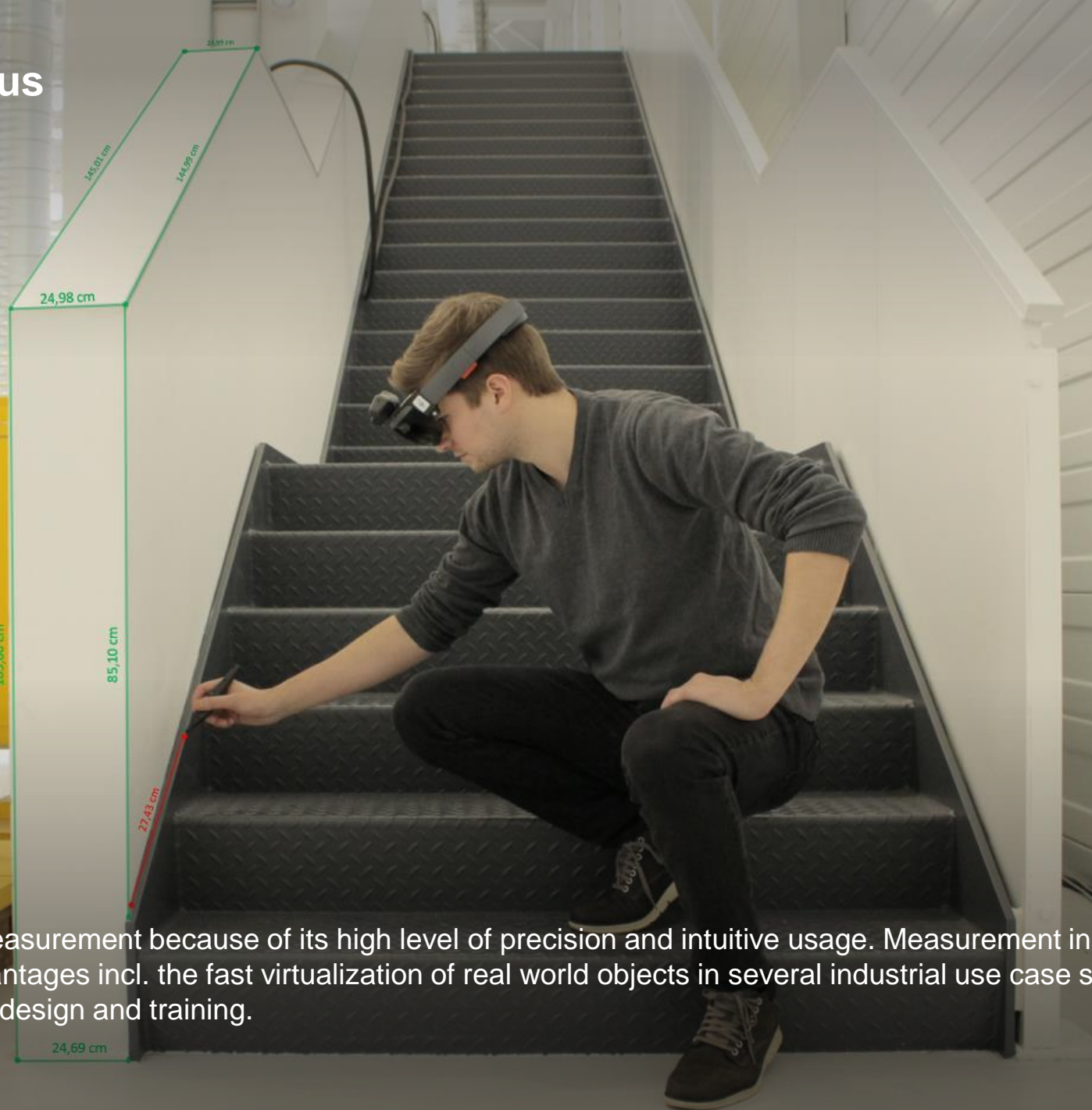
## Quality Control with Stylus



Holo-Stylus is able to improve all sorts of AR applications and is furthermore an enabler for some use cases. In our Quality Control solution Stylus enables a natural way of interaction, new features like making notes and measuring gap dimensions. The user acceptance of AR increases as users have a better interaction experience.



## Measurement with Stylus



Holo-Stylus is the perfect tool for measurement because of its high level of precision and intuitive usage. Measurement in Augmented Reality has a lot of advantages incl. the fast virtualization of real world objects in several industrial use case scenarios. Stylus can also be used in robotics, design and training.





# Projects



**FESTO**



**BASF**  
We create chemistry



**MAGNA**



**BASF**  
We create chemistry



**Deutsche Telekom**



# USP

Holo-Light unites great technology, AR expertise, industrial experience and unique features.

## Competitive Advantages

- ✓ **Feature Set for Engineers**

Use CAD features to manipulate and work with 3D models and assembly groups

- ✓ **High-quality 3D models**

We expand the visualization capabilities of smartglasses and smartphones by streaming content from external Servers

- ✓ **Remote Rendering with Industrial Acceptance**

3D CAD files are streamed from own servers to guarantee low latency and security

- ✓ **Collaborative Sessions**

Users can join collaborative sessions from all over the world

- ✓ **Precise and simple Interaction**

With Holo-Stylus we simplify interaction in AR and offer unique features like measurement and annotations.





# About Holo-Light

- Founded in 2015
- Headquarter in Munich (DE)
- Industrial AR software solutions on SmartGlasses and handhelds
- Proven track record of projects implemented and licenses sold to market leaders in several industrial sectors
- Microsoft Mixed Reality Partner
- Auggie Award 2018 & German Innovation Award 2018
- Already participating in successful Horizon 2020 projects



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