

# Glasses-Free 3D Technology

Display, Camera, and System Solutions



# Agenda



- **Team**
- **Facts & Figures**
- **Milestones**
- **True 3D**
- **Technology**
- **Products**
- **Customer Projects**

# Team



**Daniel Lutz**  
Chief Executive Officer  
Founder



**Dr. Matthias Hohenstein**  
Chief Executive Officer  
Founder, Investor



**Alexander Moniak**  
Chief Production Officer  
Founder



**Angelika Moniak**  
Chief Financial Officer



**Jonas Staschik**  
Chief Technical Officer



**Selcuk Özer**  
Chief Business  
Development Officer

# Team



3D technology experts – over 50 years of experience



**Ullrich Dähnert**

Leiter 3D Grundlagen- und  
Technologieforschung,  
Founder

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15+ years of experience in  
3D technology



**Dr. Rolf Dieter Naske**

Patents  
Doctor of Mathematics

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20+ years of experience in 3D  
technology  
World-renowned expert for  
3D multi-view technologies



**Stefan Kurz**

3D technology Production  
processes

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10+ years of experience in  
3D technology



**Johannes Sigwart**

3D Technology Lab

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15+ years of experience in  
3D technology

# Sites



## Aalen (headquarters)

Product development

Marketing and sales

Series production



## Pockau - Lengefeld

Fundamental research

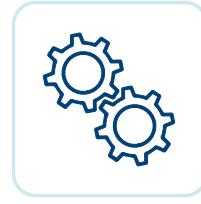
Prototype development

Production process development

# Key data



Founded 2011



Specially developed and patented manufacturing processes



63 employees  
35 employees in R&D



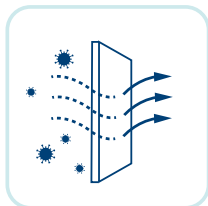
Production machines designed in-house



All key processes handled in-house:  
product development, production,  
sales, service

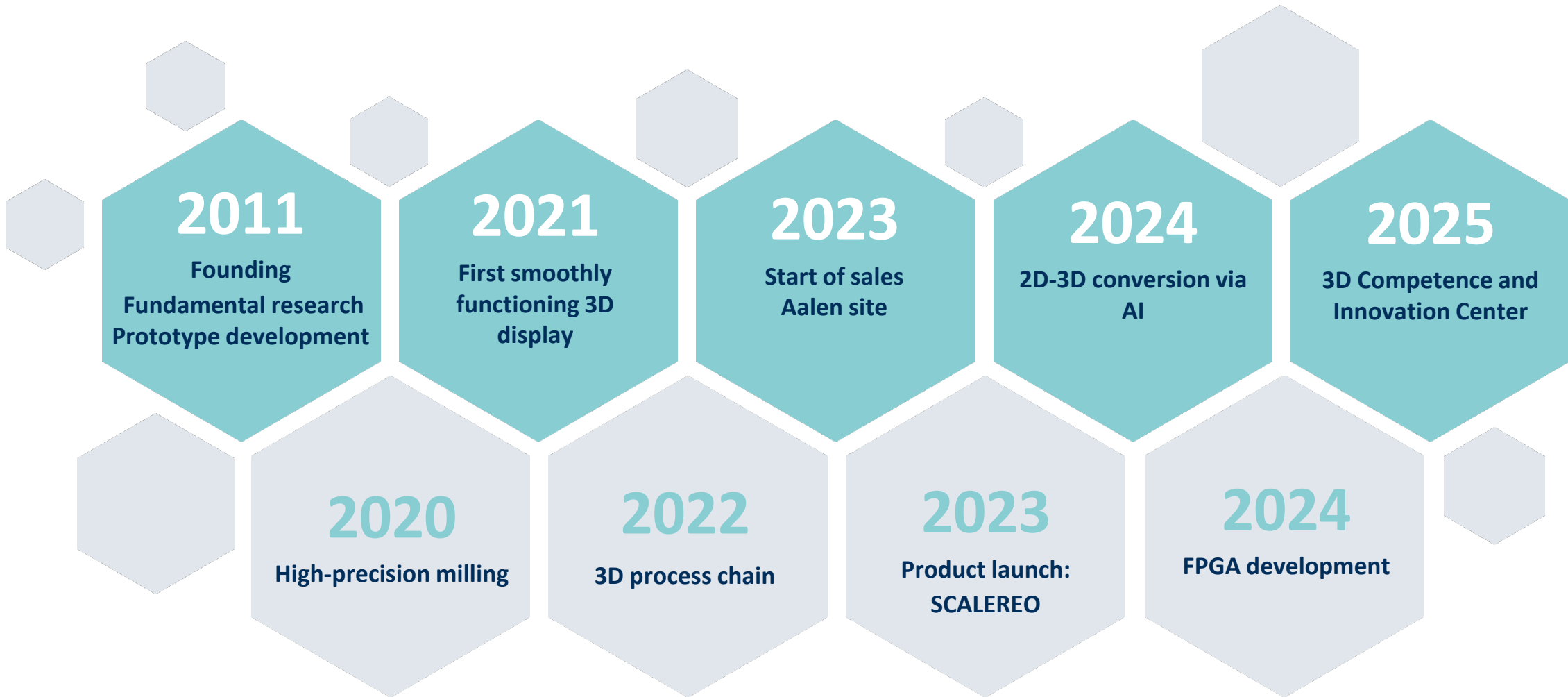


Fundamental research  
FPGA development for highly integrated systems



Clean room for filter production and bonding

# Milestones



# True 3D with the Naked Eye

High-end 3D technology – made in Germany



**Three-dimensional**  
Spatial vision with breathtaking depth



**Customized**  
3D technology can be adapted to your application



**No 3D glasses**  
Patented filter technology means no more glasses



**Patented**  
50+ patents, trademarks, and property rights



**Technology partner**  
More than a supplier: your dedicated 3D expert



**Certified**  
We are certified according to ISO 9001





# Why is 3D Vision so Important?



**2D monitor:**  
Vision with one eye closed



**Not possible to determine  
depth and distance**

# Why is 3D Vision so Important?



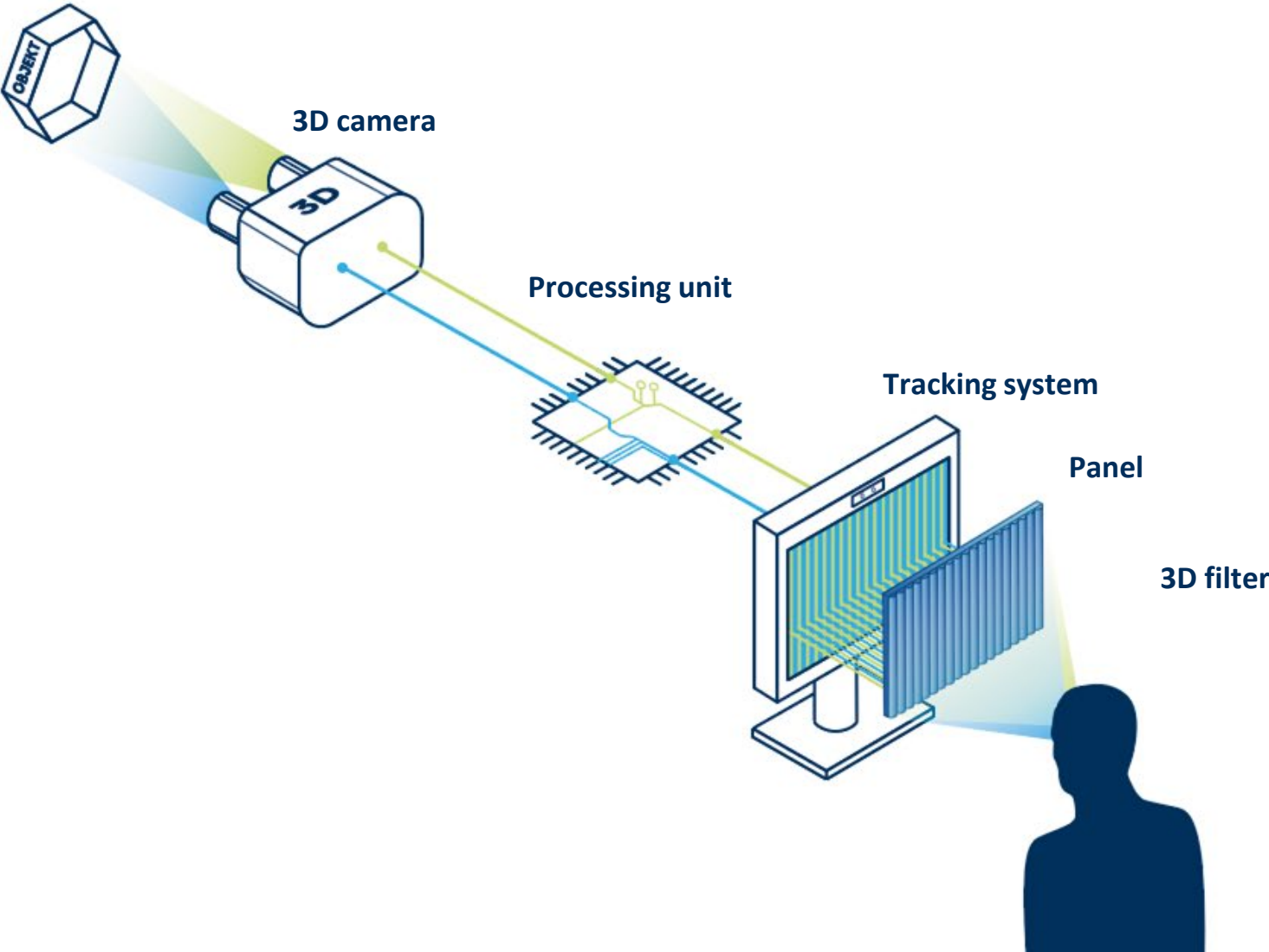
**3D monitor:**

Natural vision with two eyes

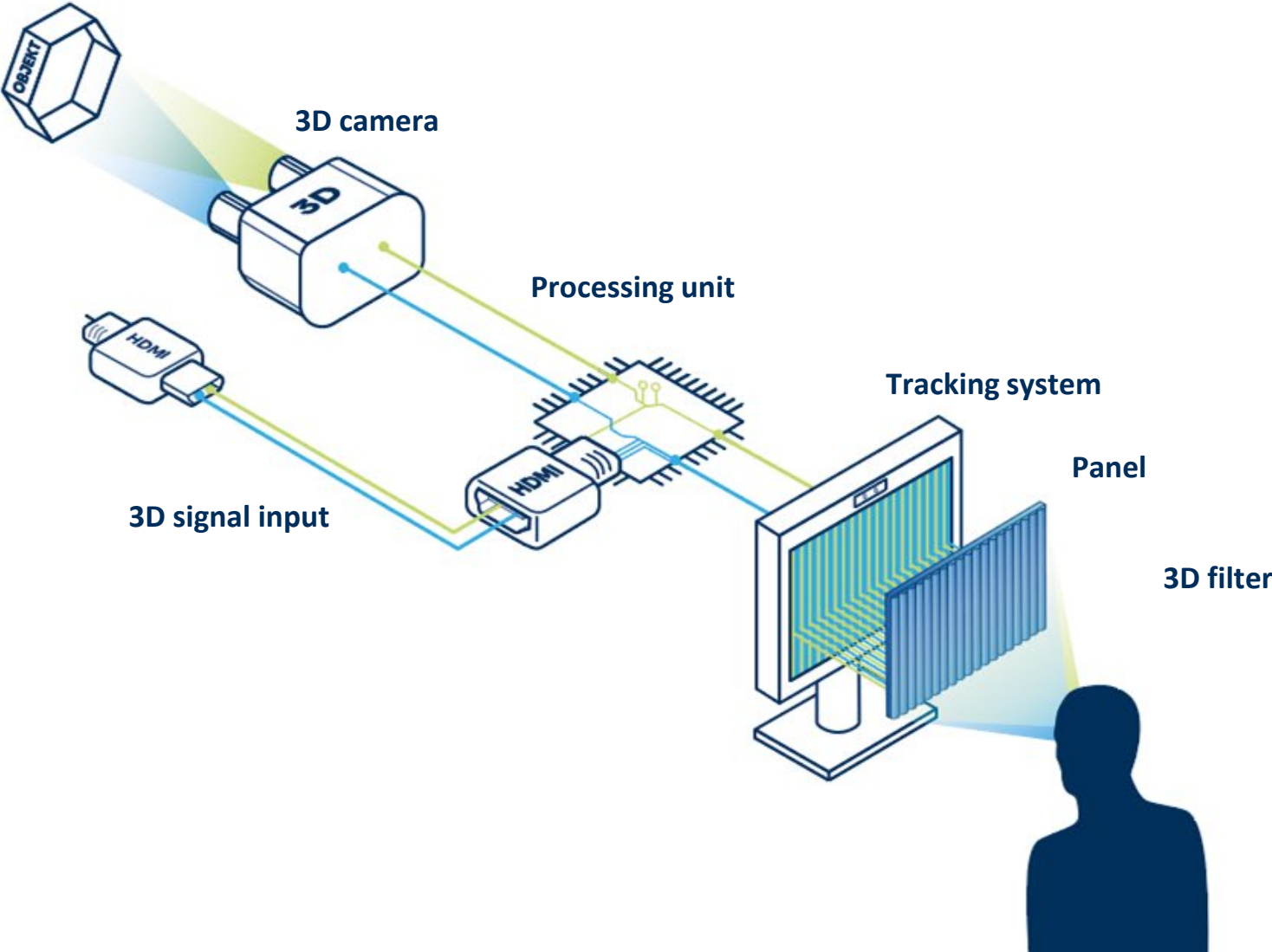


**Precise determination  
of depth and distance  
-> key to safety**

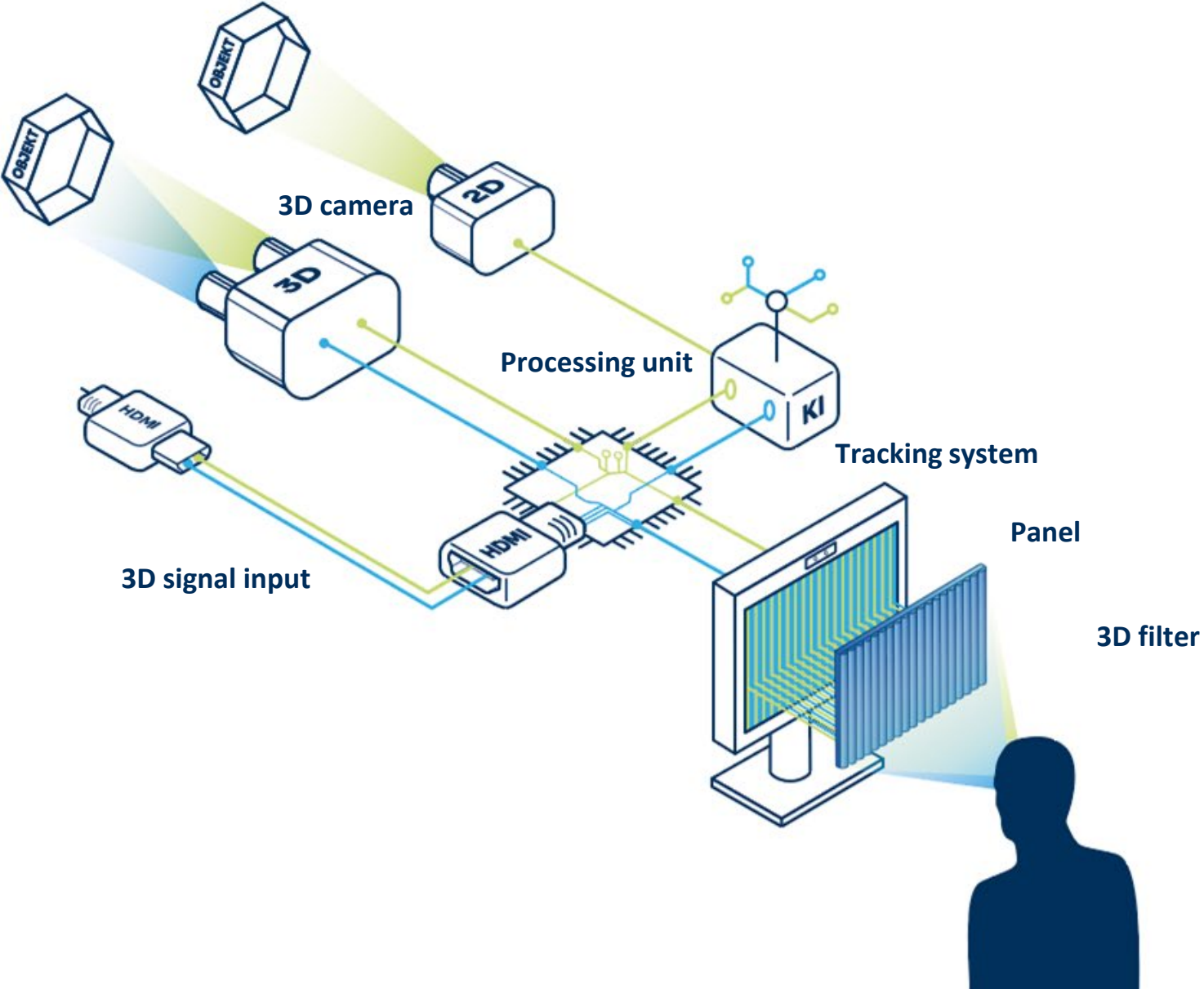
# High-Tech 3D Components



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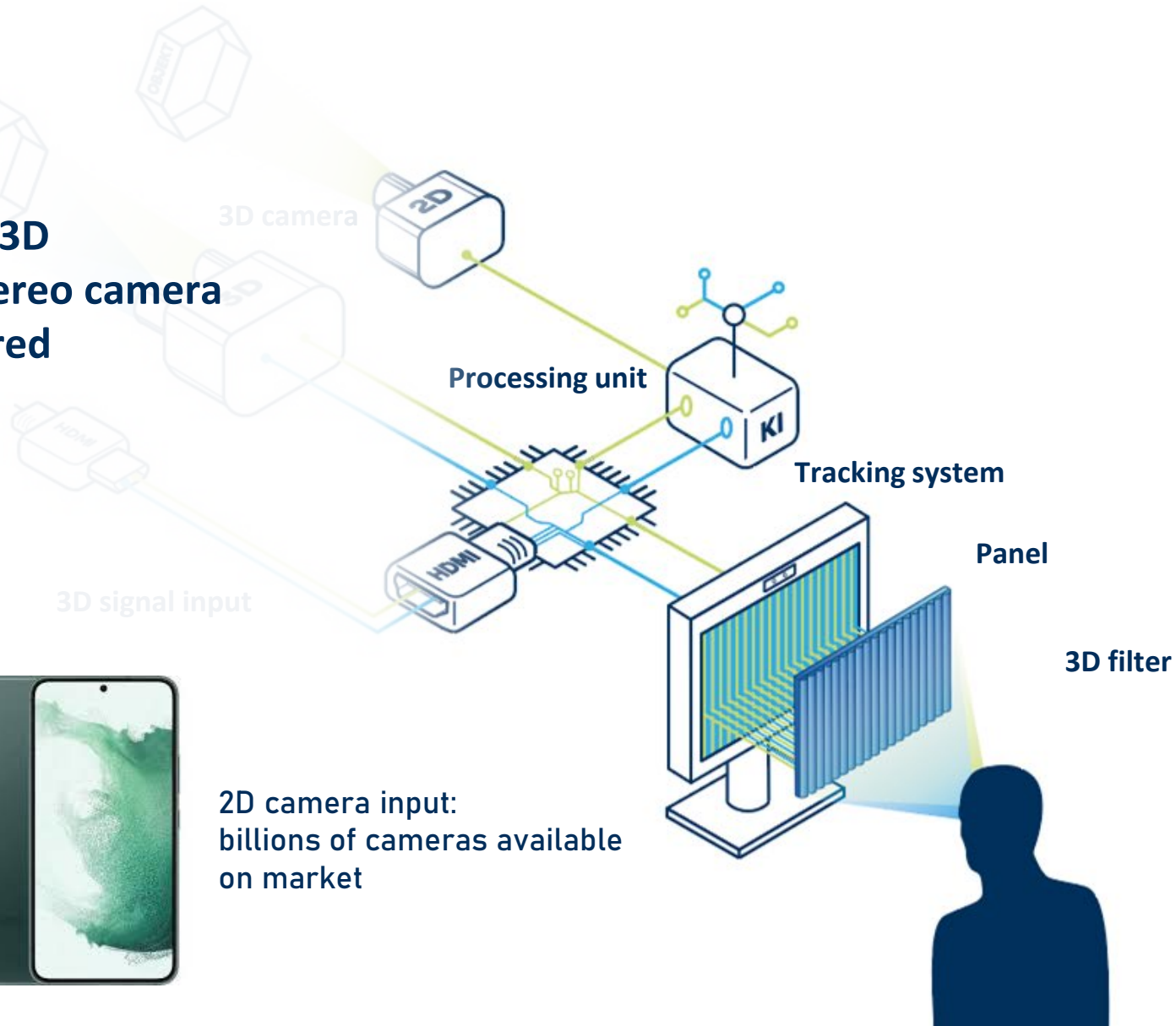
# High-Tech 3D Components



**2D -> 3D**  
**No stereo camera**  
**required**



**2D camera input:**  
**billions of cameras available**  
**on market**



# Technology – Lenticular



2D panel

+

Lenticular

=

Glasses-free  
3D monitor

# Patents

Our innovative products and production processes are protected by 50+ patents, trademarks, and property rights.

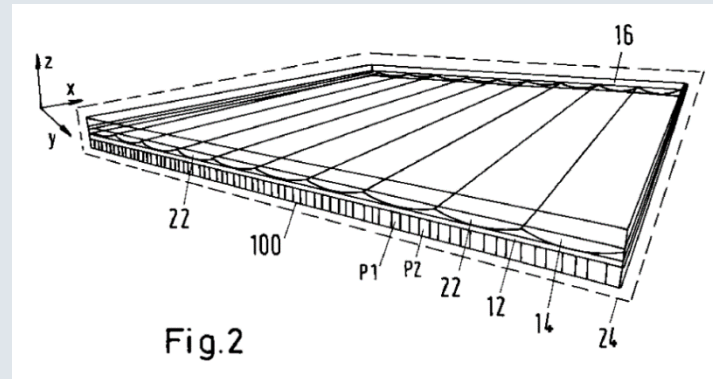
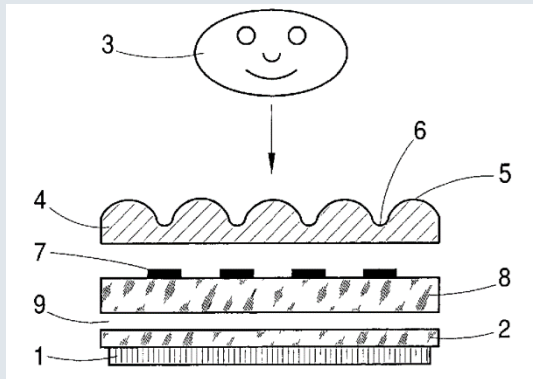
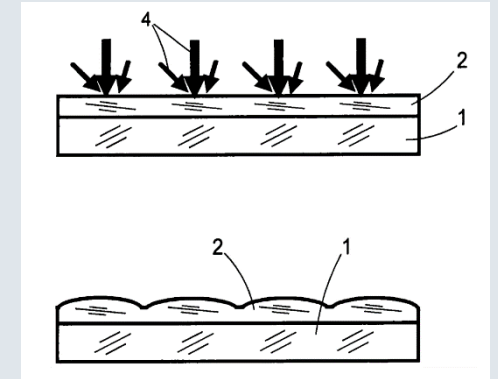
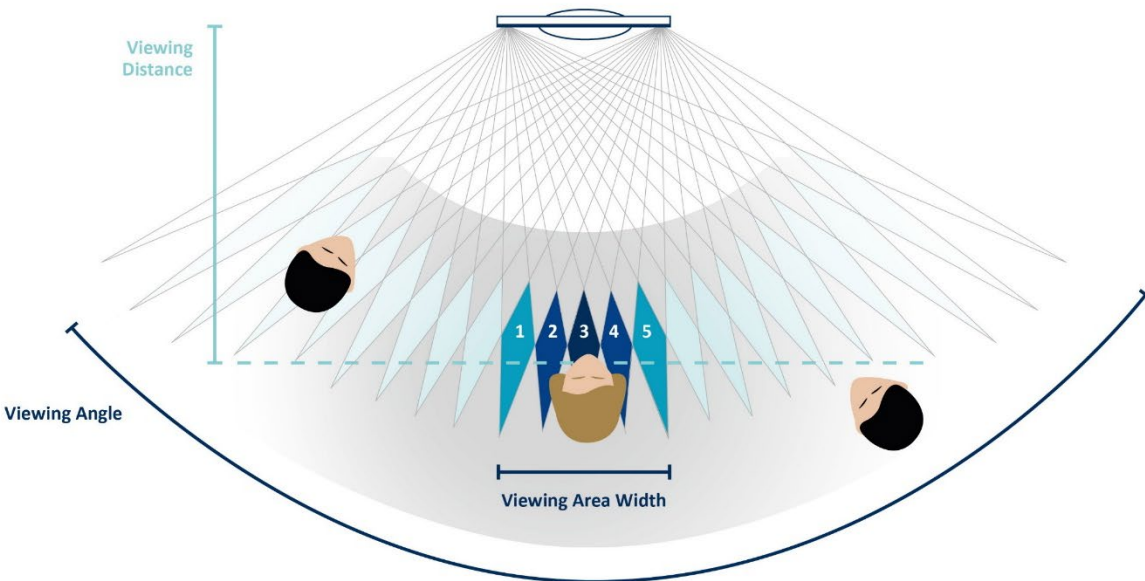


Fig.2

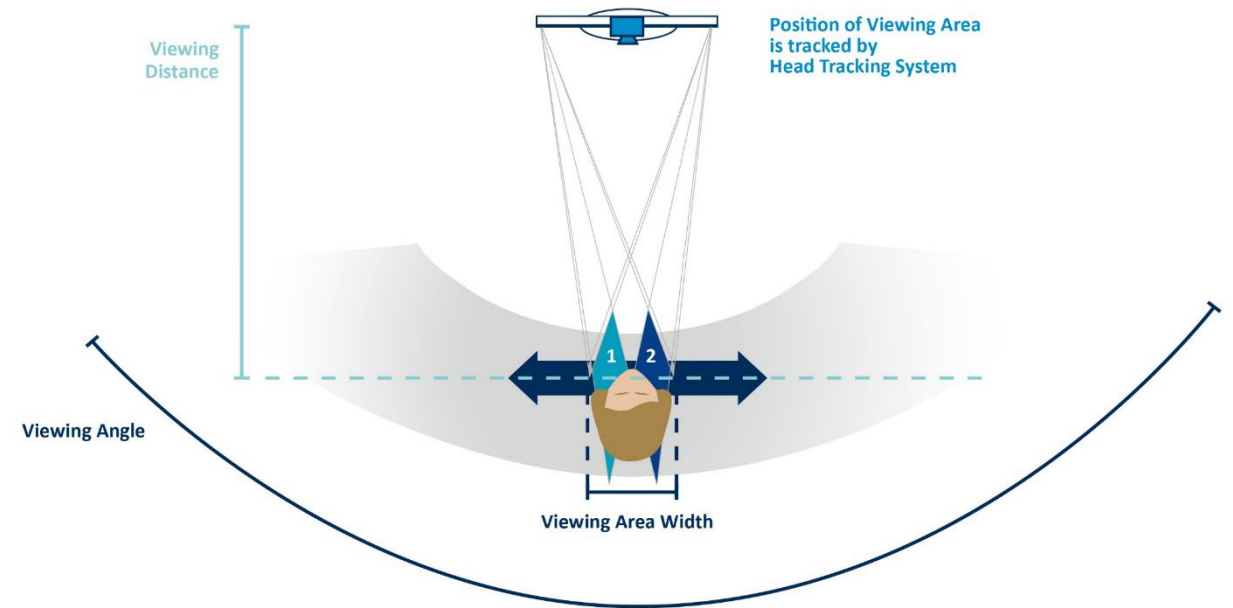




# Overview of our 3D displays

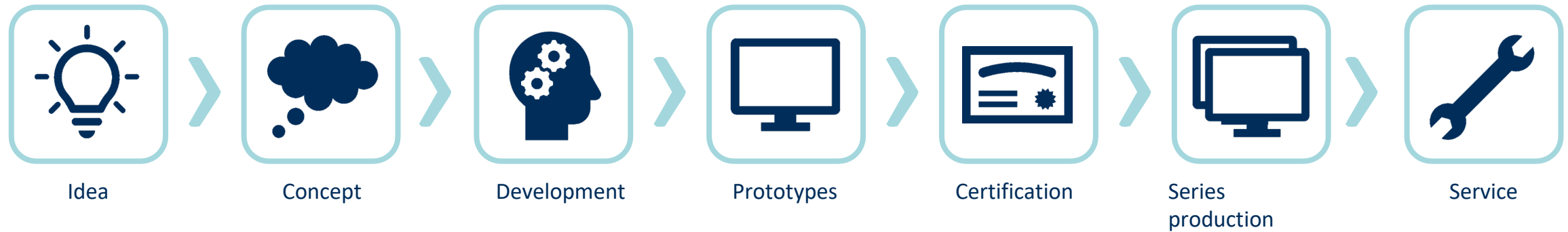


**Multi-View Display**  
For multiple persons simultaneously



**Stereo with Head Tracking**  
For one person

# Complete Product Cycle – From a Single Source



# Markets



## Medical Technology

- Dental
- Ophthalmology
- Hair transplant



## Industry

- Microscopes
- CAD
- Automotive



## Entertainment

- Advertising
- Films
- Games



## Education

- Centers of learning
- Universities
- Institutions

A 3D-rendered perspective view of a long, white, hexagonal tunnel. The tunnel is composed of many repeating hexagonal frames that recede into the distance, creating a strong sense of depth and perspective. The lighting is bright and even, highlighting the clean, geometric surfaces of the tunnel.

# **Example Solutions** Customer Projects

# Ergonomic 3D Digital Microscope



SCALEREO Desk  
MORE PRECISION AT WORK



SCALEREO Desk

SCALEREO AddOn  
MORE PRECISION AT WORK



SCALEREO AddOn



# Ergonomic 3D Digital Microscope

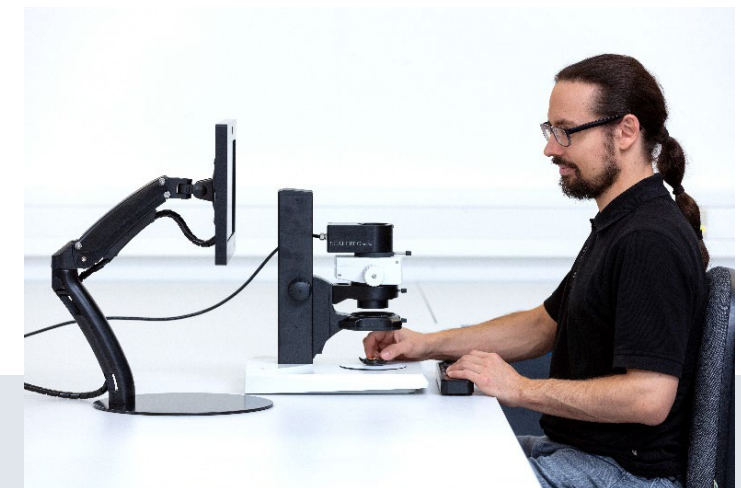
**Example application:  
Assembly and inspection of technical/medical components**



Production of medical  
components



Inspection and  
quality assurance, machining



Ergonomic work

# Digital 3D dental microscope

**Example application:  
Dental microscope for dentists**

**Further application areas:**



**Hair transplant**



**Ear, nose, and throat  
care**



**Ophthalmology**



**Hand, plastic, and  
cosmetic surgery**



# OEM Component Integration



**Example application:  
SIMtoCARE dental simulator**



**Product highlights:**





# Real-Time 3D Visualization

Example application: Depiction of MRI/CT data

From 2D MRI depiction to 3D depiction in real time



# Remote Control of Vehicles

**Example application: Yard management**

We open up a new chapter of safety, efficiency and precision. Utilise the unique depth perception and retain full control - even remotely.



# Remote Vehicle Control



## 3D future technology with 5G – driverless transport system



### Reference customer:

Carl ZEISS Jena (Shared Production Unit)

### Solution partner:

Aalen University

ZEISS IQS

Digitization center of East Württemberg Chamber of Commerce and Industry (IHK)

Application for the  
Winner category at the  
Allianz Industry 4.0 Award



# Remote Vehicle Control

Example application: Remote-controlled excavator



## Option 1:

Remote control on 3D display via 5G technology



## Option 2:

3D display in vehicle for optimum depth perception



# Remote workplace



Example application: Demolition excavator



Example application: excavator

# Remote workstation - demining vehicle: prototype



**27" inch 3D monitor for teleoperation centre**  
**3D stereo camera**

# Technology Integration Study at ZEISS



**CT-System with 3D-Monitor**



**3D working microscope**



**ZEISS Discovery x Axiocam 3D**

# 3D Visualizer Bundle



**Your software  
application**



**Glasses-free 3D monitor**



**True 3D depiction of  
CAD application**



# Digital Signage



**Installation at Audi Forum in Ingolstadt**

3x3 55" 3D video Wall



**3D campaign in cooperation with Mediatransports**

3x4 55" 3D video Wall

**Thank you for your attention**

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