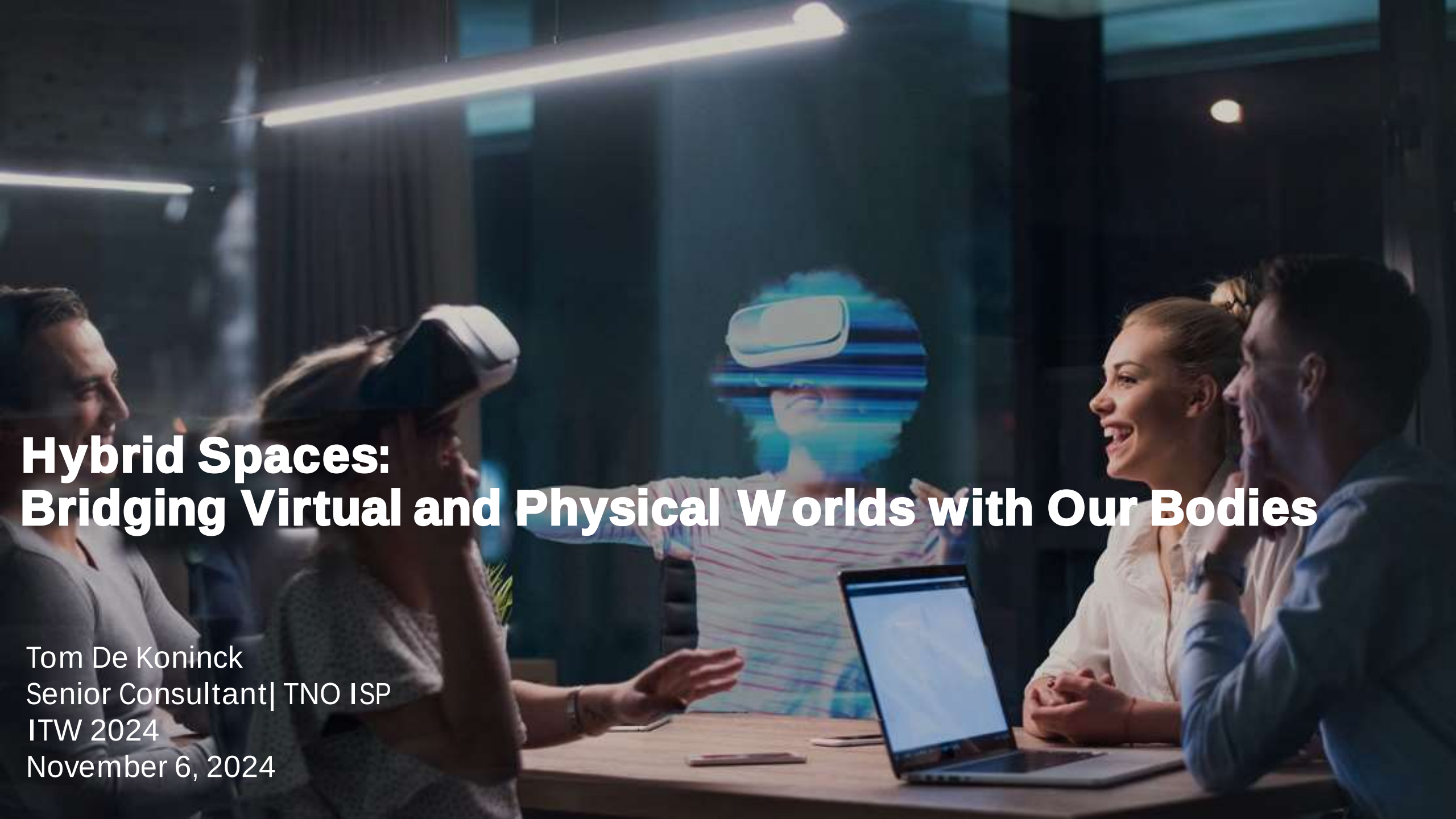




Hybrid Spaces: Bridging Virtual and Physical Worlds with Our Bodies

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Web4.0: Blending physical and digital

Web 1.0 *Static and read-only*

The main goal of most websites was one-way communication with users

Web 2.0 *Participative Web*

Rise of two-way communication, as users were able to interact with content providers and among themselves

Web 3.0 *Semantic Web*

Intelligent and interconnected Internet powered by machine learning, AI, blockchain and other technologies

Web 4.0 *Blending physical and digital*

An incoming technological transition where users, physical and virtual objects are integrated

Combine power of both

- Not exclusive
- Blend real and virtual
- Use strengths of both modalities

Real

- Trustworthy
- Easily recognisable
- Preserving accountability

Virtual

- No boundaries to imagination
- Play with place and time
- Privacy enhancing (anonymity)



Social XR for the metaverse

Reality-Virtuality continuum

Real environment



Augmented Reality (AR)



Augmented Virtuality



Virtual environment



3D capture and rendering



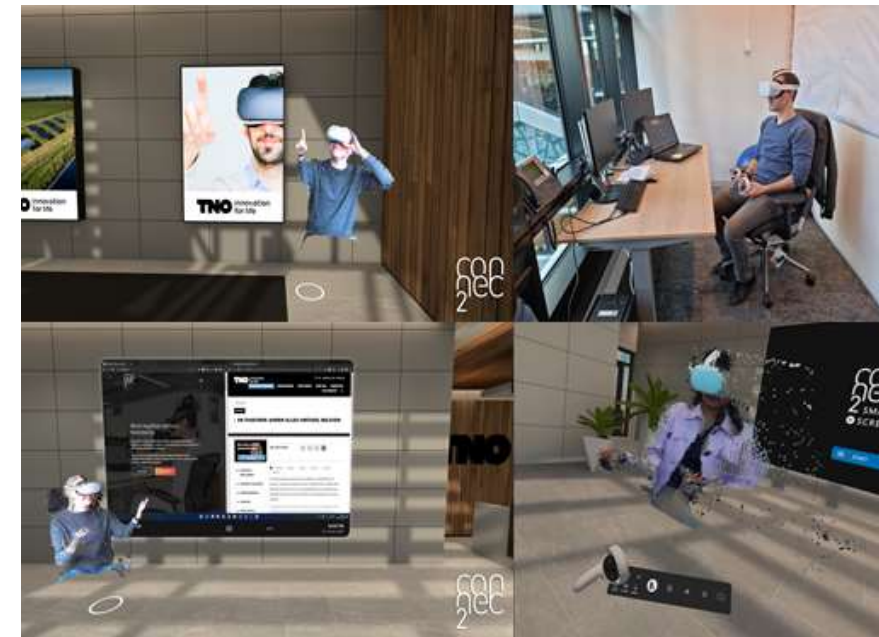
Social Touch



Real time communication

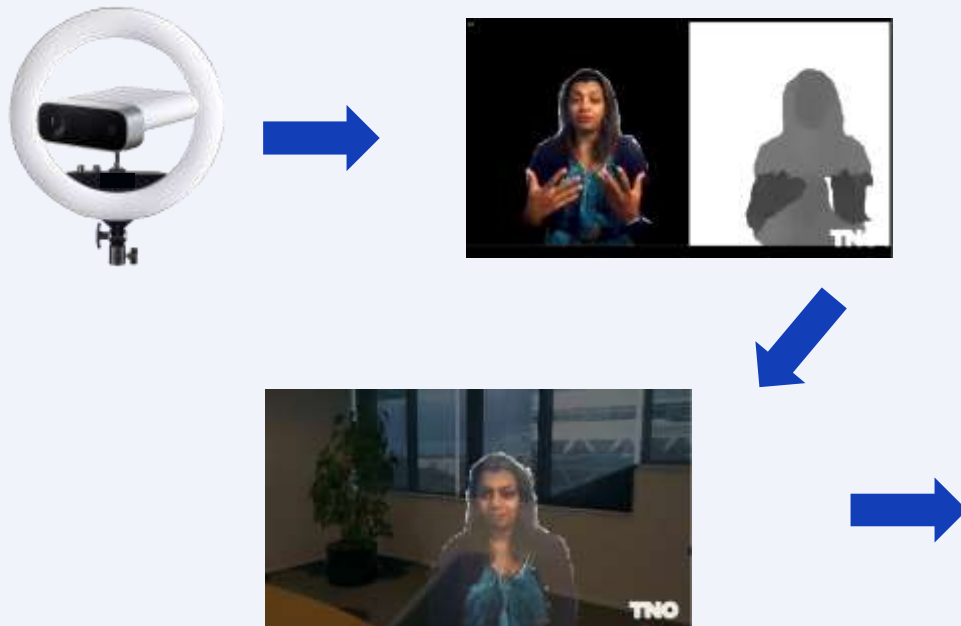


Tailored end-to-end transmission chain



XR & Immersive Tech: Social XR

- **Holographic** communications with volumetric video: the next frontier in visual media
- Real people captured as 3D volumes: **human presence** is crucial
- Processed and transmitted in **real time**: minimum latency interactions

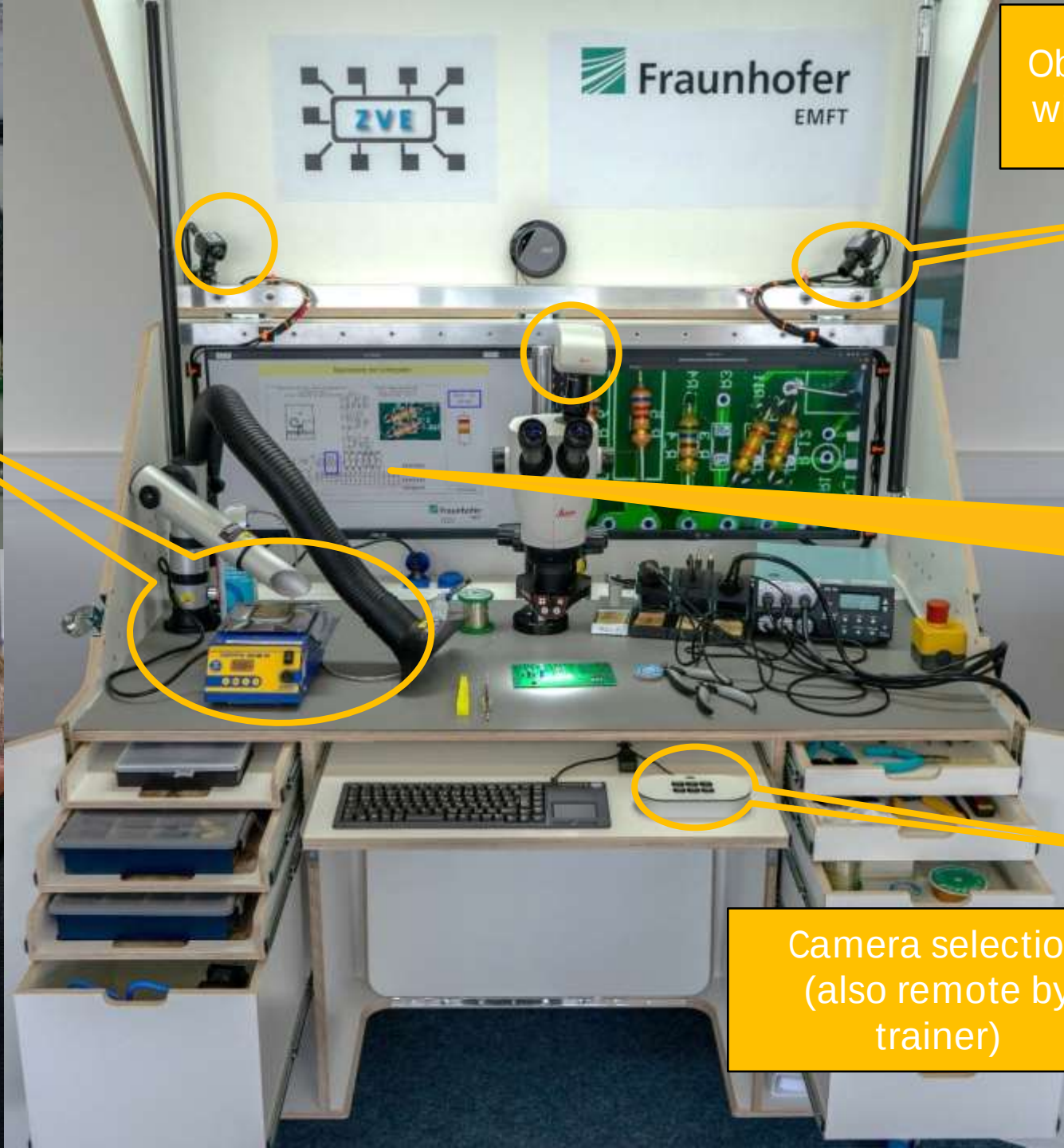


CAN WE PRACTICE TECHNICAL SKILLS AT A DISTANCE?





(Remote) view
microscope



Observation cameras
with different angles



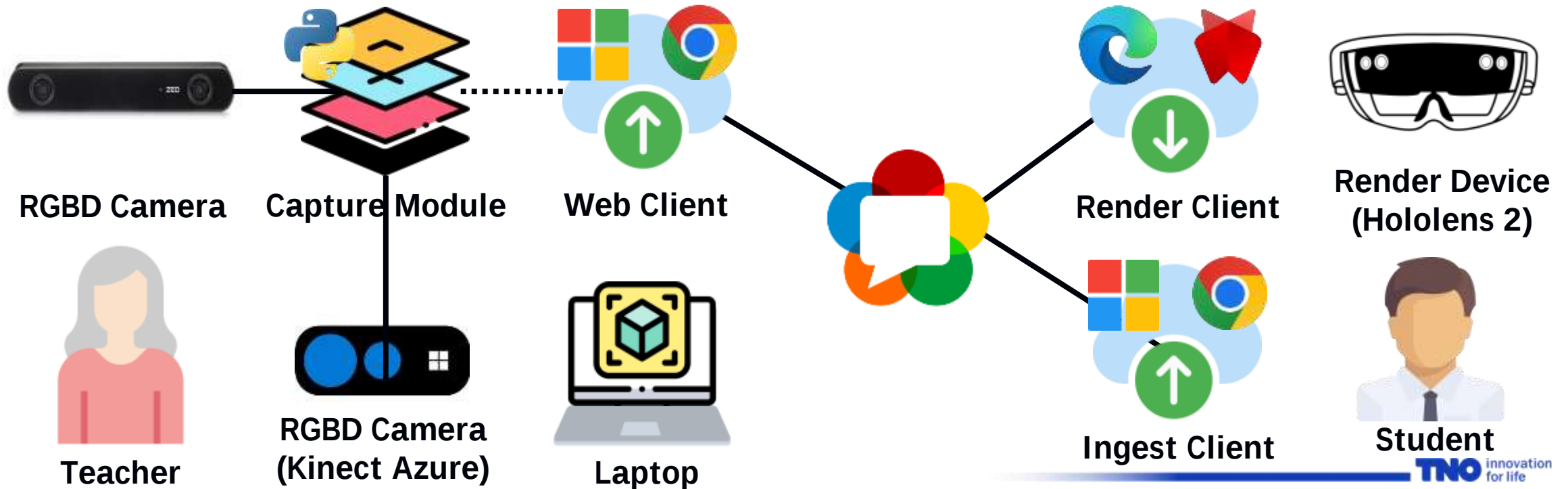
Live
Presentation by
the trainer



Camera selection
(also remote by
trainer)



Hybrid AR and VR: show who's there



FINAL THOUGHTS

- **Augment reality:**
add visual, auditive and tactual objects to the real world
- **Enhance virtual:**
Show the real world, real people in a virtual environment to create connection with reality





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Thank you for your attention!