

Towards Collaborative Photorealistic VR Meeting Rooms

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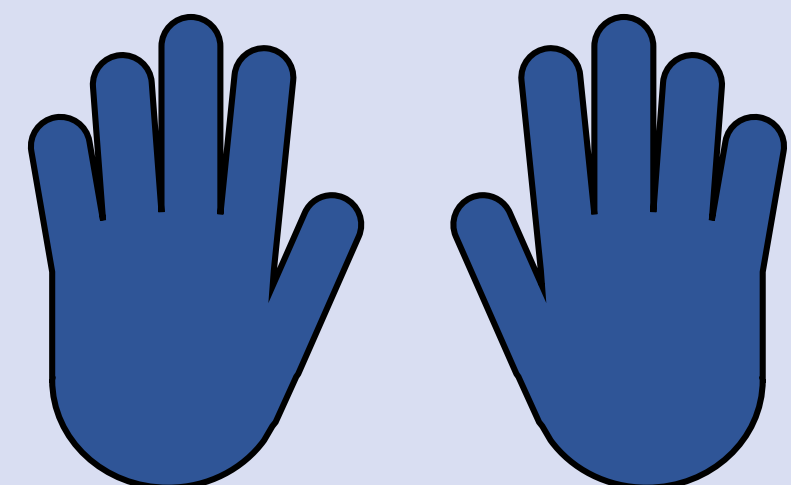
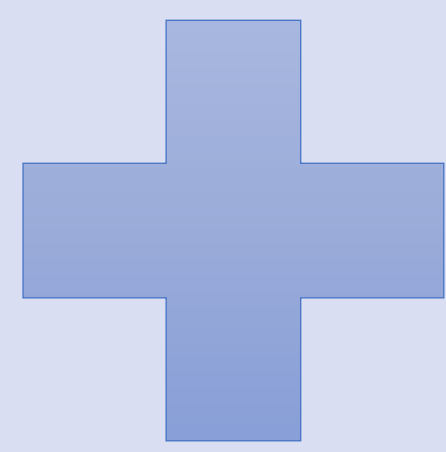
Abstract

When designing 3D applications it is necessary to find a compromise between cost (e.g. money, time) and achievable realism of the virtual environment. Reusing existing assets has an impact on the uniqueness of the application and creating high quality 3D assets is very time consuming and expensive. **We aim for a low cost, high quality and minimal time effort solution to create virtual environments.** This paper's main contribution is a novel way of creating a virtual meeting application by utilizing augmented spherical images for photo realistic virtual environments.

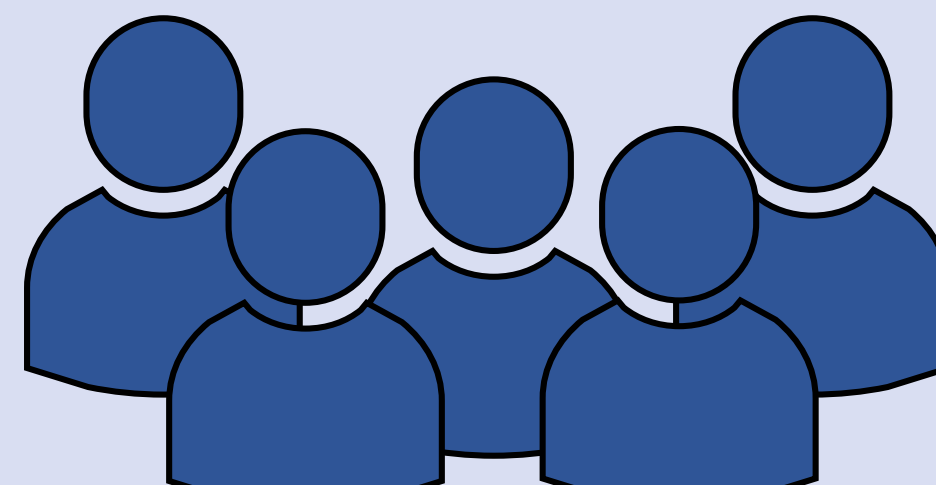
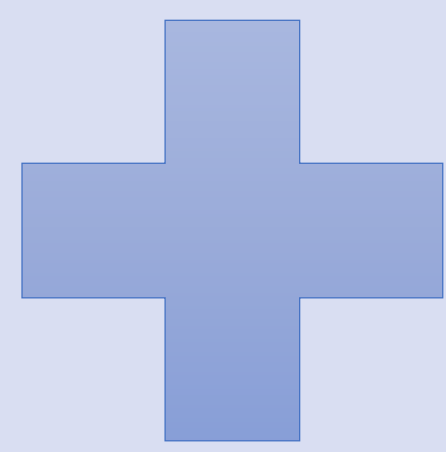
Main Components of our Approach



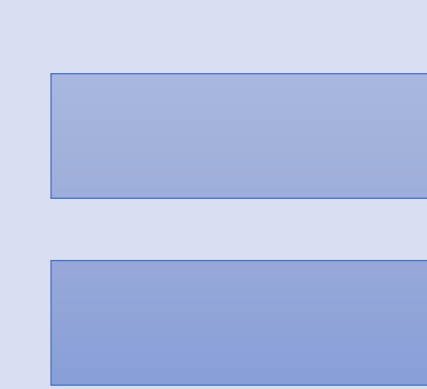
Spherical Images



Gesture Interaction



Multiple Users



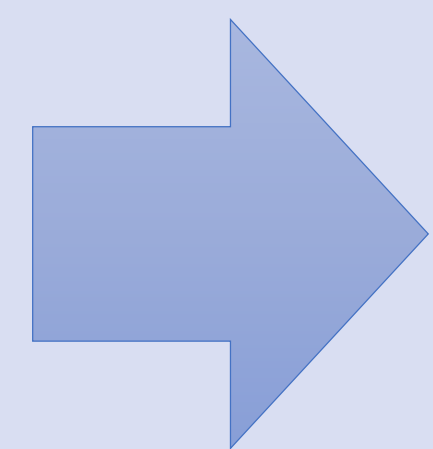
A Photorealistic Virtual Meeting Room

- **Virtual Environment** is defined by using spherical images to create photo realistic virtual worlds.
- **Shared Objects** in meeting rooms are used to enable information exchange between all persons present in the room.
- **Users** use hands and gestures for interaction and are represented by a virtual avatar.

Virtual Environment



Spherical Image



Shared Objects

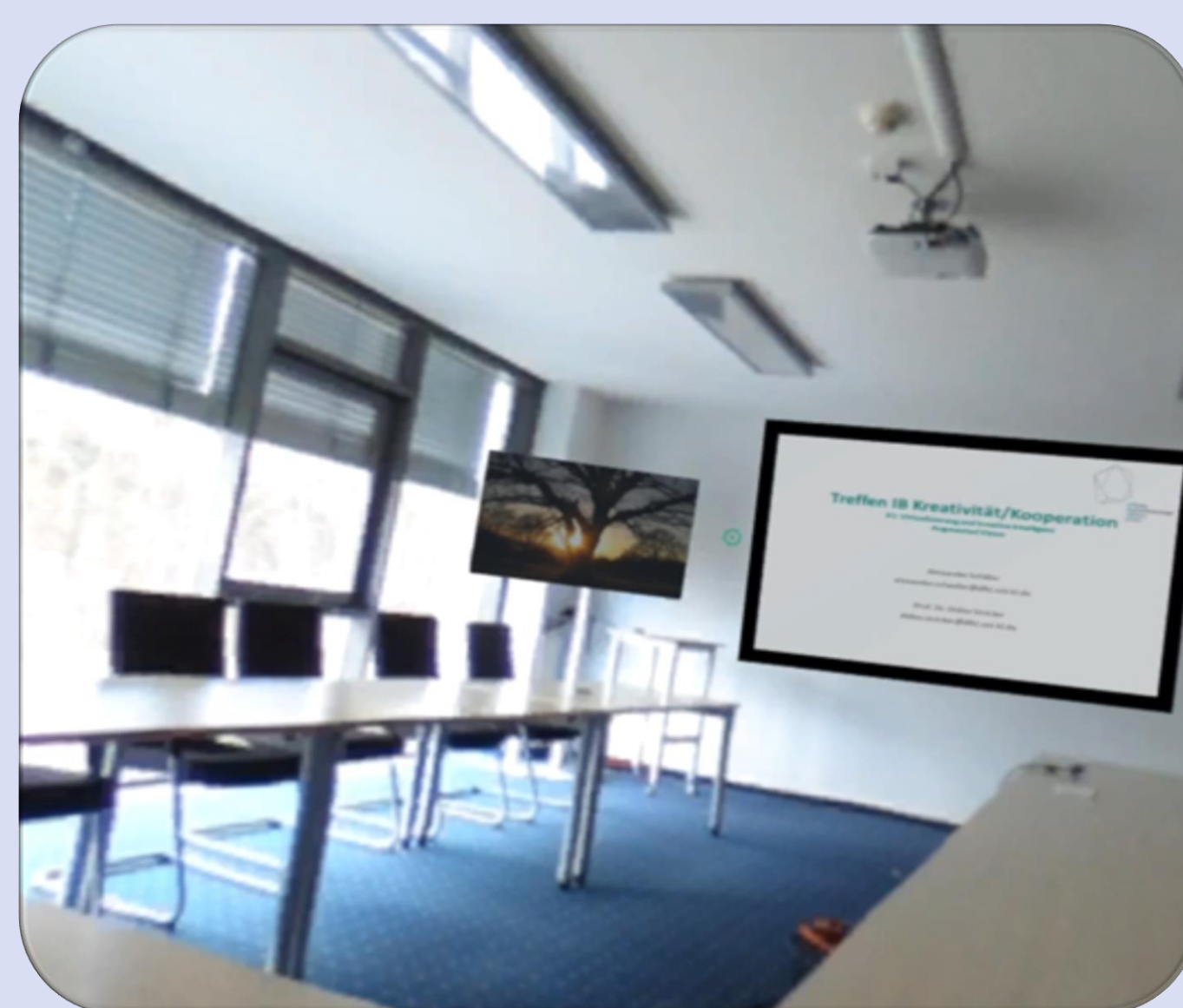
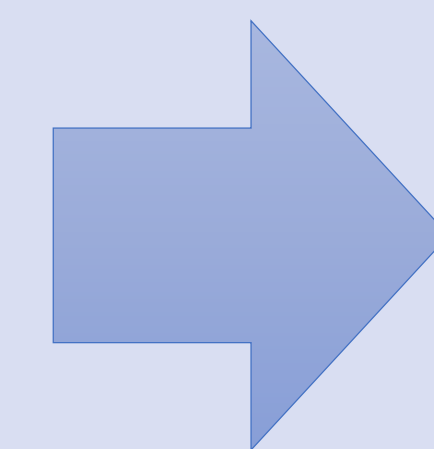
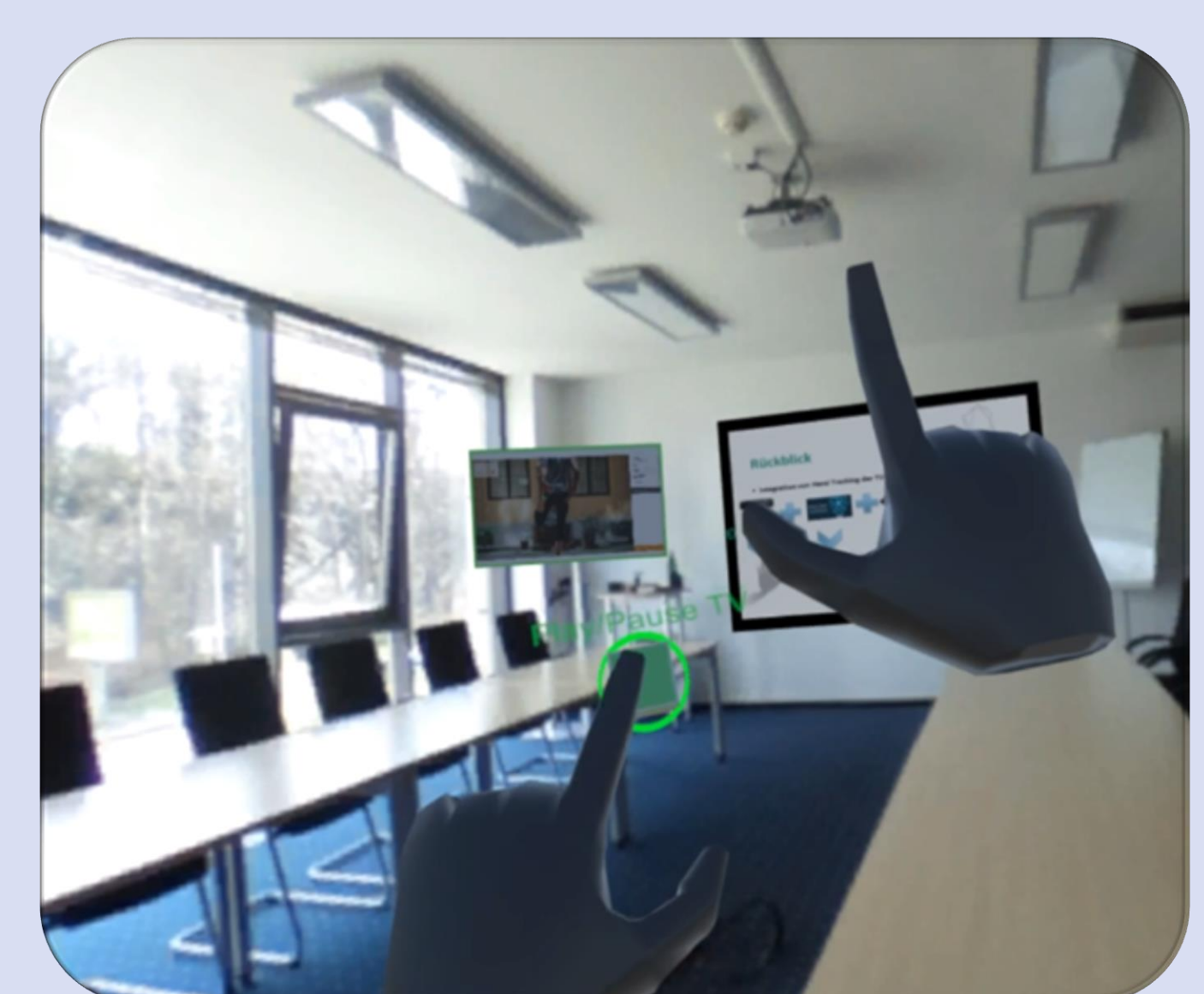


Image Enrichment



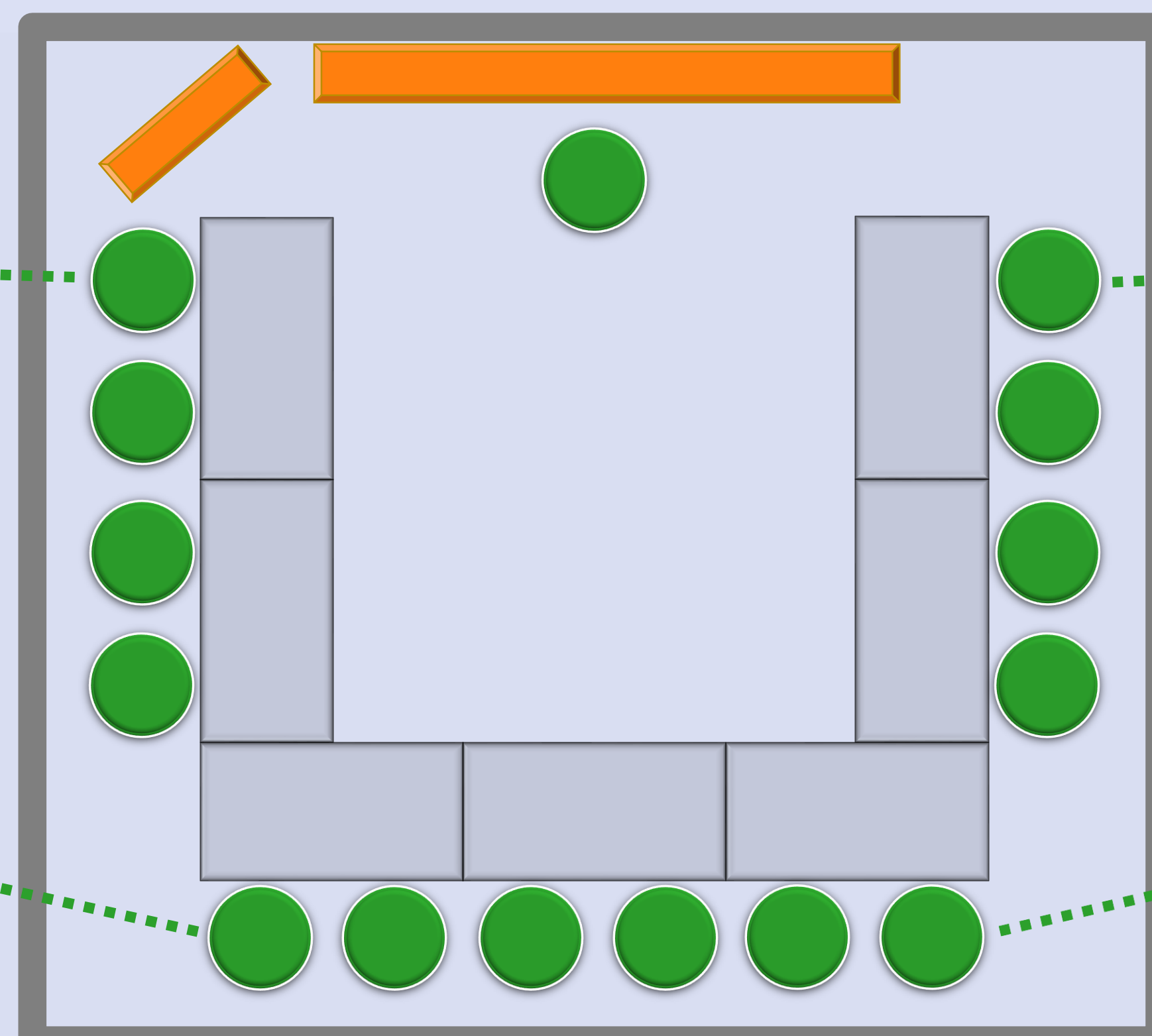
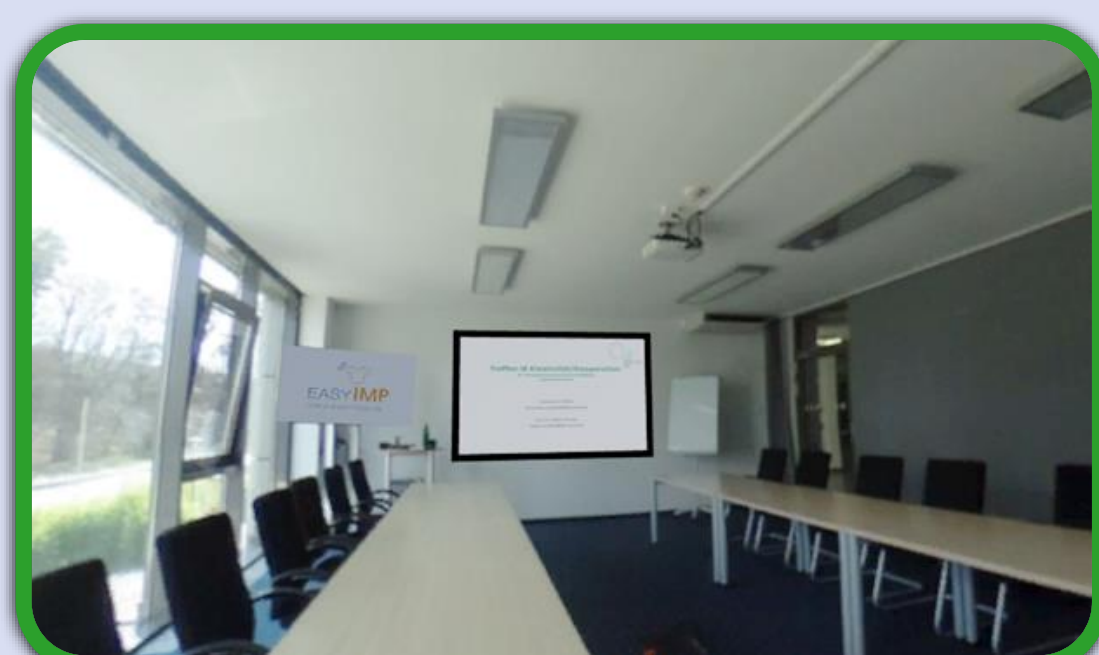
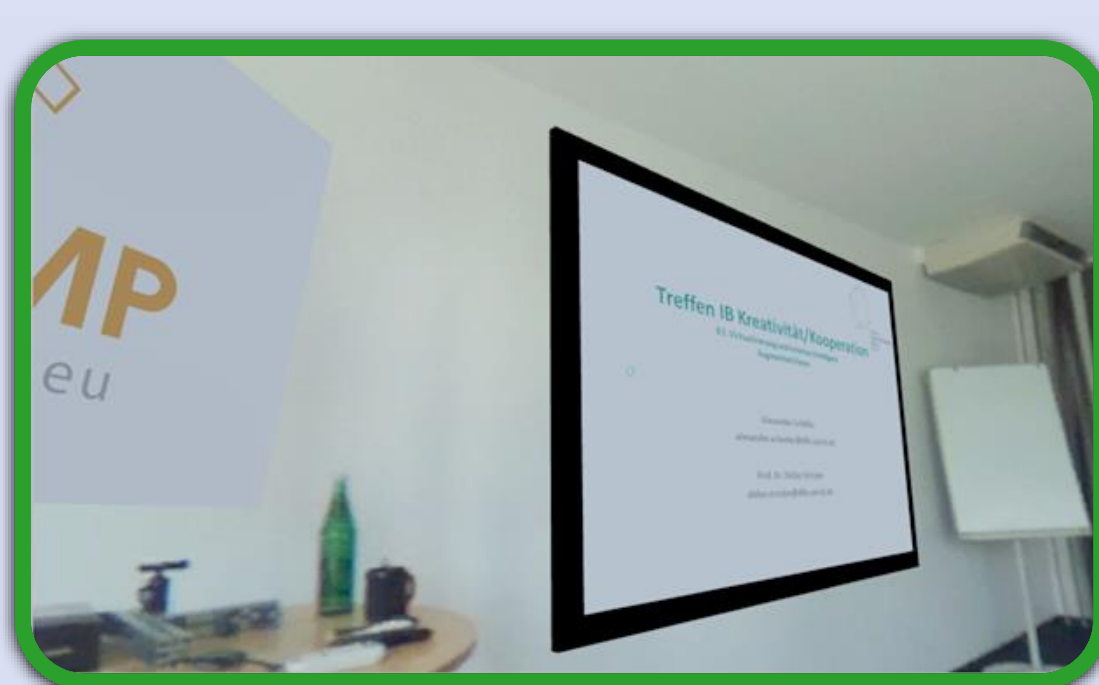
Users



Hand and Gesture Interaction

A Shared Collaborative Virtual Environment

The typical way of creating a virtual room is to create all necessary 3D assets and properly align them. Depending on the desired amount of realism this process can be very costly and time consuming. We found that approach to be too expensive and provide a solution which is independent of the complexity of a room and still provides very high realism. The combination of enriched spherical images and hand tracking is used to create collaborative virtual environments in a very short amount of time.



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