



Collaborative VR-Environments for People with and without Visual Impairments

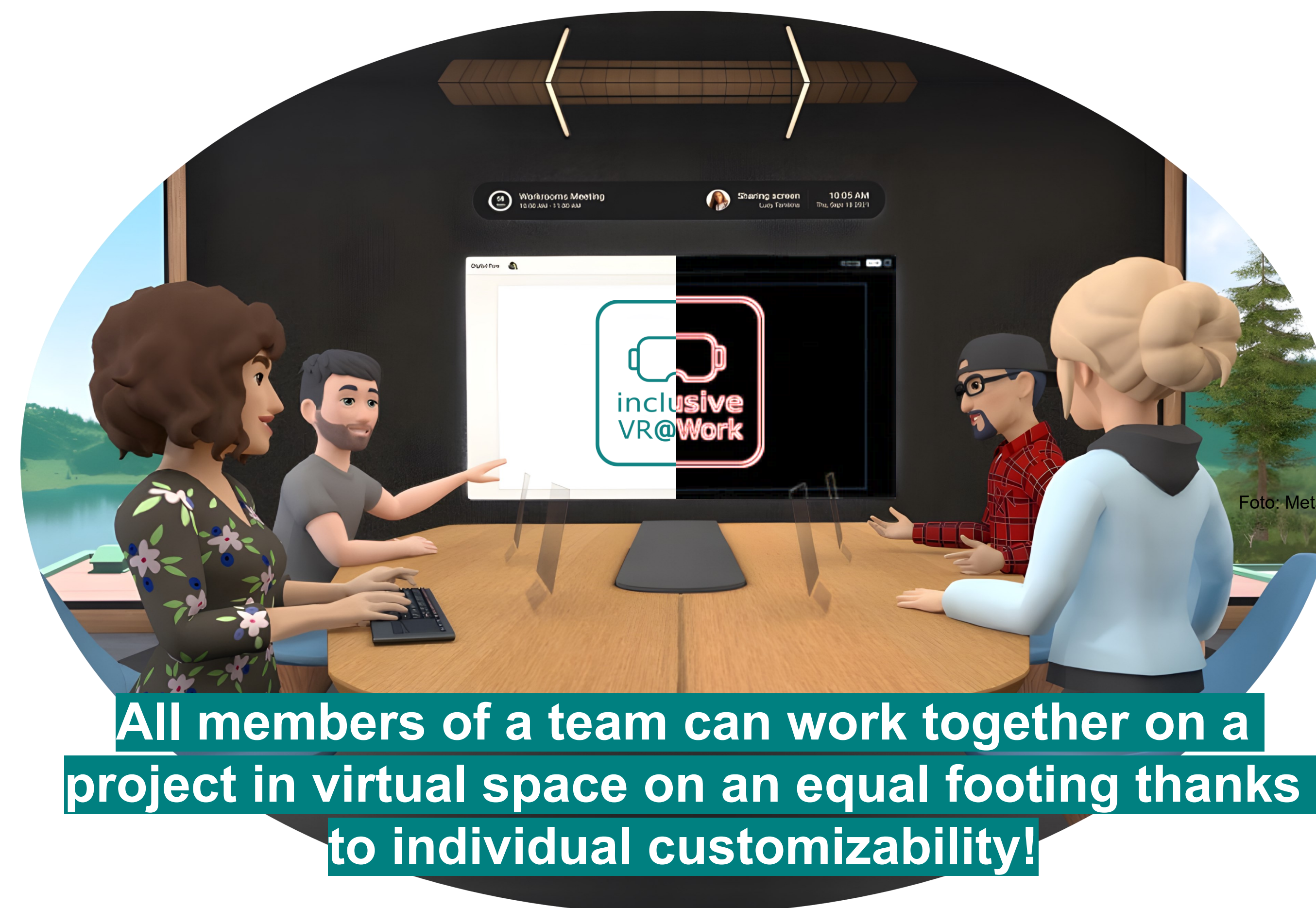
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Motivation

Common working spaces are not accessible for people with visual impairments and need to be adapted to their specific sight. The utilized assistive technology aggravates cooperation.

Prior Work

- VR is a suitable aid to support the individual needs of users with visual impairments [Hoppe et al. 2020].
- Methods for collision avoidance of co-located users and addressing personal content visualization needs can enable intuitive and efficient cooperation in VR [Hoppe 2021].



Project InclusiveVR@Work

The InclusiveVR@Work project addresses the issue by creating individualized virtual worlds for users customized to their specific needs. It takes advantage of Virtual Reality technology to make adjustments and seamlessly translate between these different views for collaborative work.

The project follows a participatory approach, actively involving the target audience directly in the design process.

Participatory Approach

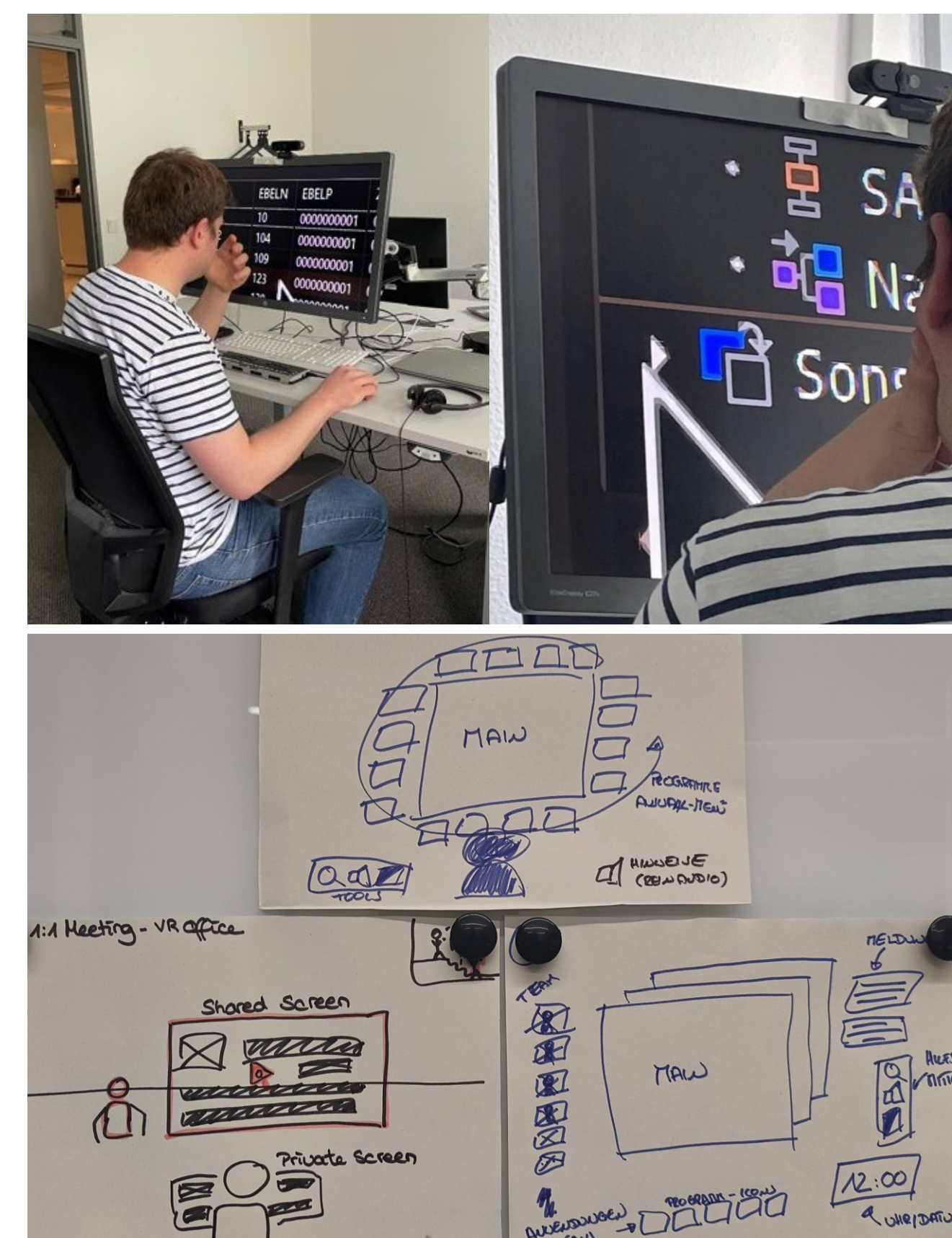
Interviews & Field Research

We investigated the specific challenges of a team of employees with and without visual impairments in collaborative work environments through online interviews and field research.

We observed the following difficulties:

- Performing visually dependent tasks, such as documentation with screenshots
- Collaboration on one screen despite lack of overview and different working styles
- Presenting visual content in team meetings accessible for all.

➔ Working in highly visual workplaces requires workarounds.



Use Case

The representative use case developed focuses on tasks such as information retrieval, data manipulation, and communication of results with colleagues.

Design Workshop

For this use case, we conducted an internal design workshop to gather and discuss different design possibilities for a customizable VR workplace. As a result, we focused on a single workplace with one adjustable main window and the integration of classic hardware like a mouse and keyboard in the next step.