Enter the Hindenburg: Experiencing Cultural Heritage by Social Interaction in Hybrid Space

Watch the Video!

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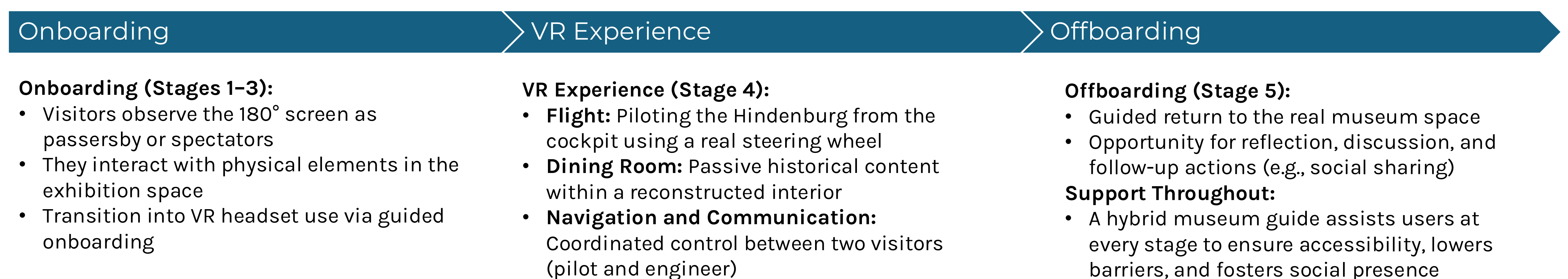
Short Description

"Enter the Hindenburg" is an immersive VR installation that engages museum visitors with cultural heritage through interactive, social experiences. By reconstructing the iconic airship, the experience combines guided exploration, cooperative tasks, and a hybrid museum guide—present both physically and virtually—to foster presence, trust, and learning. This project demonstrates how VR can create accessible, participatory encounters with history.
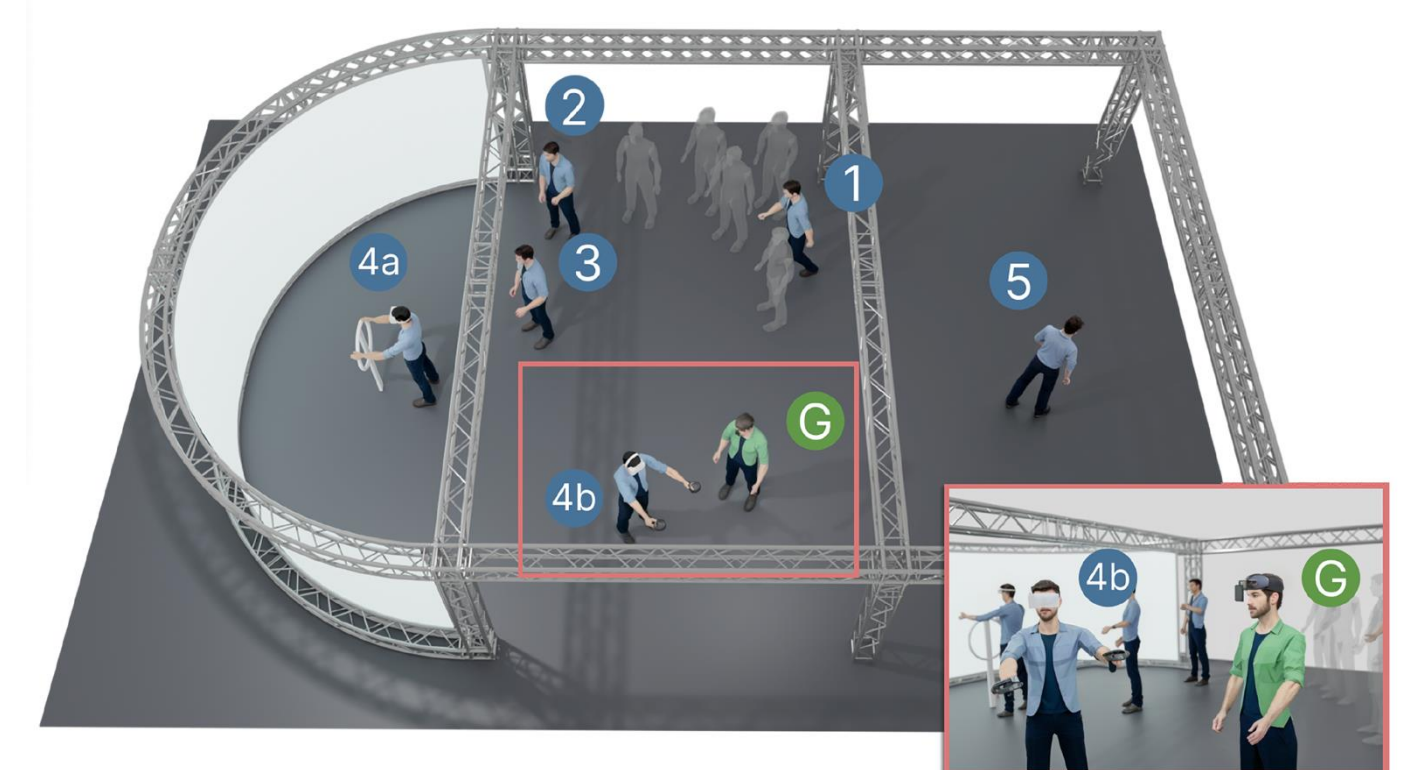

The Hindenburg VR Audience Funnel. 1: Passer-By, 2: Spectator, 3: Explicitly Interacting User, 4a: HMD User - Flight, 4b: HMD User - Tour, 5: Offboarding and Follow-Up Action, G: Guide

Audience Funnel

Onboarding	VR Experience	Offboarding

Onboarding (Stages 1–3):
- Visitors observe the 180° screen as passersby or spectators
- They interact with physical elements in the exhibition space
- Transition into VR headset use via guided onboarding

VR Experience (Stage 4):
- **Flight:** Piloting the Hindenburg from the cockpit using a real steering wheel
- **Dining Room:** Passive historical content within a reconstructed interior
- **Navigation and Communication:** Coordinated control between two visitors (pilot and engineer)

Offboarding (Stage 5):
- Guided return to the real museum space
- Opportunity for reflection, discussion, and follow-up actions (e.g., social sharing)

Support Throughout:
- A hybrid museum guide assists users at every stage to ensure accessibility, lowers barriers, and fosters social presence

Social & Hybrid Interaction

- **Collaborative Roles:** Visitors take on active roles such as pilot and engineer, working together to operate the airship.
- **Hybrid Museum Guide:** A real-world guide remains physically present while controlling a lifelike avatar in VR.
- **Real-Time Communication:** Facial expressions and gestures are streamed live using face tracking, enabling intuitive non-verbal interaction.
- **Enhanced Social Presence:** Bridging physical and virtual spaces fosters trust, engagement, and immersion
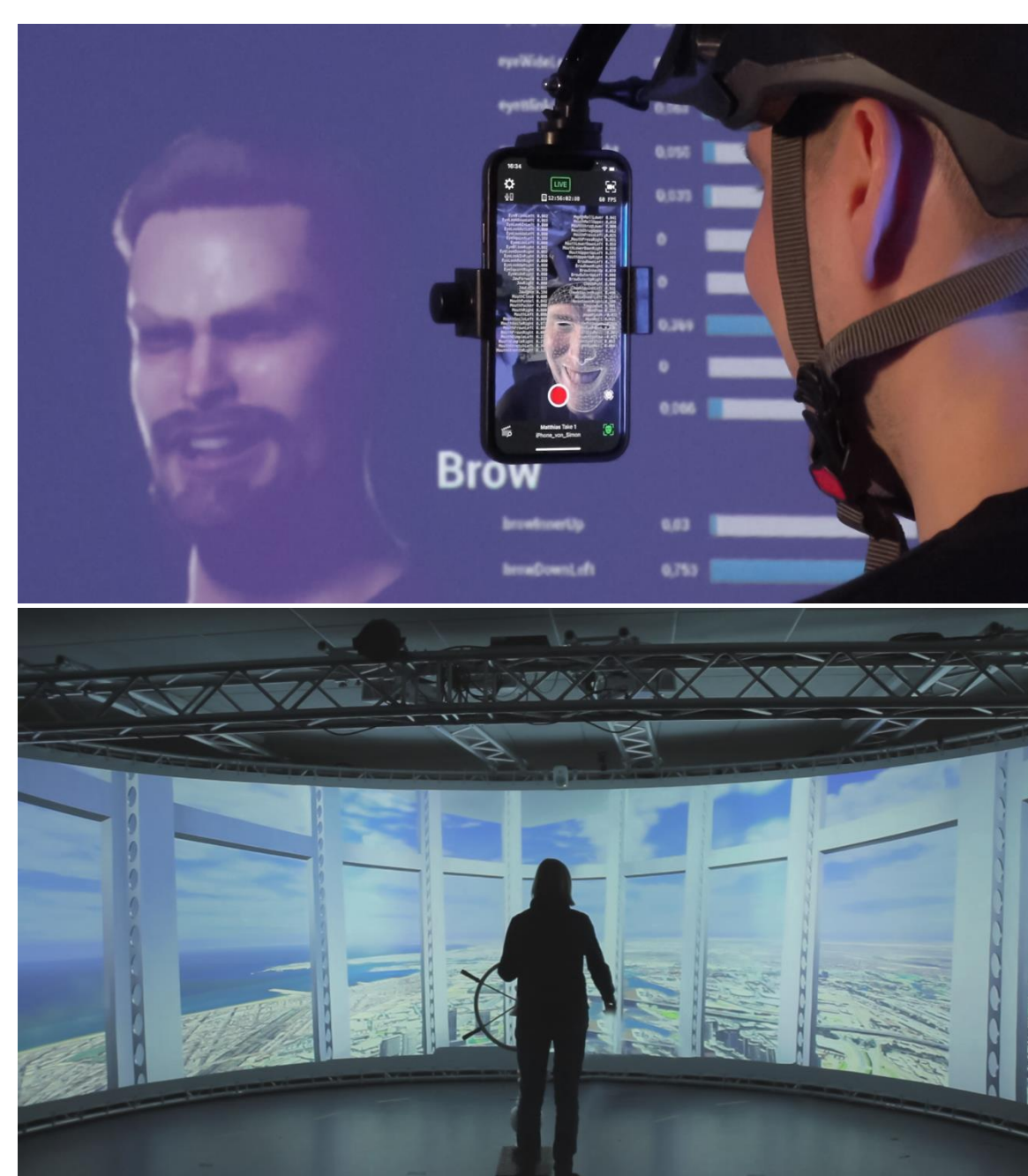
Impact & Discussion

The experience demonstrates how immersive VR, paired with social interaction and a hybrid guide, increases engagement and presence in cultural heritage contexts.
- Gradual onboarding and physical elements reduce motion sickness and lower the barrier to entry.
- Social roles and collaboration make the experience memorable and foster deeper learning.
- Challenges include guide fatigue and managing dual (VR and real-world) interactions, which future versions may address through partial AI support.

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