CONSENSIVE

con·sen·sive | \ kən- ' sen-siv \
: consensus-oriented, i.e. respecting different perspectives
// e.g. a consensive presentation

Social Mixed Reality for Research, Education, and Training

VR4more

- Cross-platform social XR

VR4more-People:

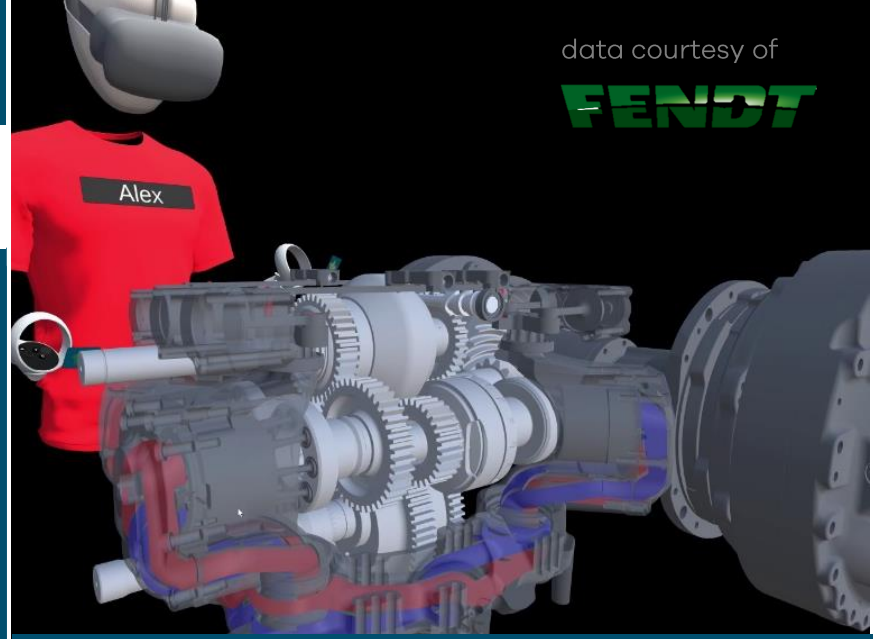
- Collocated and remote Cooperation

VR4more-Data:

- Output-sensitive 3D data streaming
- Real-time rendering of large models
  - Even on mobile hardware and
  - with limited network bandwidth

VR4more-Insights:

- Embedded information visualization
- Database interfaces
- Interactive behavioral models



Remote Instruction and Maintenance

Collaborative Building Monitoring

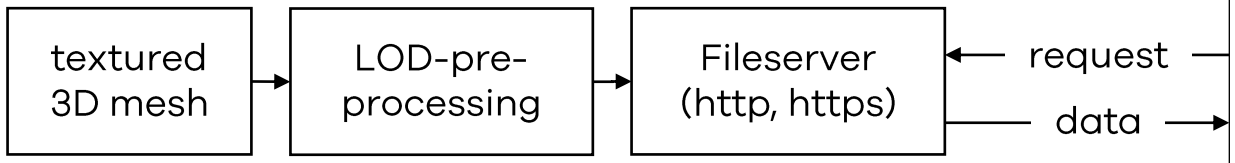
Collocated and Remote Cooperation

Cooperative Training and Learning

Output Sensitive 3D Data Streaming

VR4more-Data enables real-time rendering of large and detailed 3D models with Unity applications – even on mobile devices such as smartphones and standalone XR headsets. The original size of the data may exceed the available memory of the target platform. Smart data and memory management enable its smooth and continuous visualization.

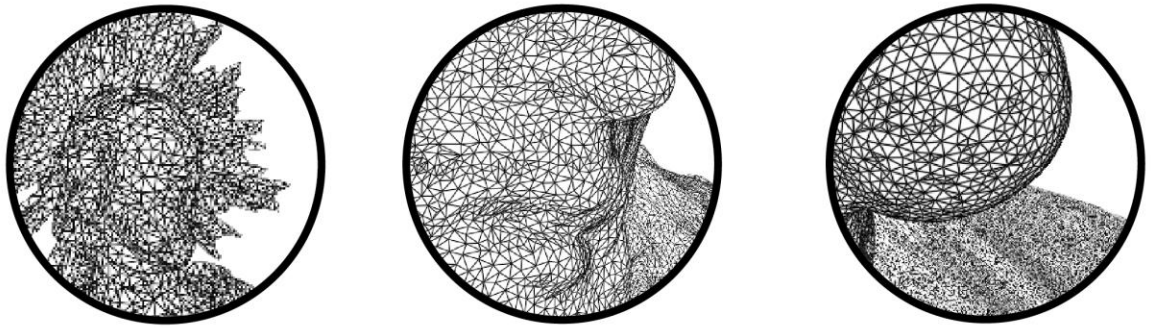
VR4more-Data builds on the open-source file format Nexus* for streaming output-sensitive representations of large 3D datasets from any network storage during runtime. Local caching minimizes the amount of transferred data.

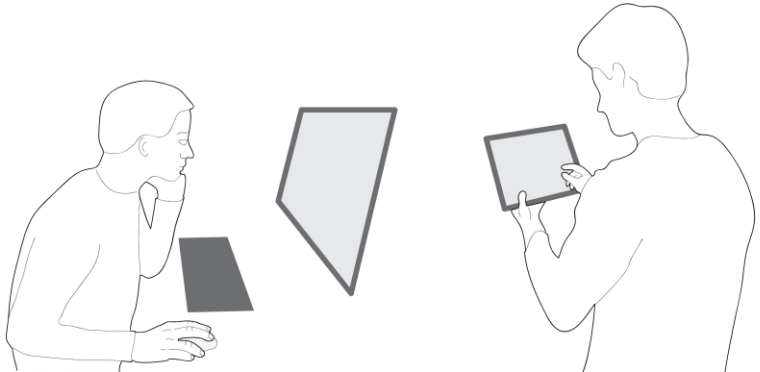


VR4more-Data is a C# assembly for Unity (>= 2020.3). For further information, please contact info@consensive.com.

Displayed view:

Corresponding mesh resolution:





* vcg.isti.cnr.it/nexus/

https://www.consensive.com/

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Multi-User 3D Displays

Multi-user 3D displays offer individual 3D views for up to six users on a common projection surface. This allows users to perceive their own bodies as well as the physical presence of other participants in direct spatial relation to the displayed content. The shared display becomes a window into an extended reality.

The system builds on 360Hz projection technology (4K) and very fast shutter glasses. One projector natively supports three stereo views. Two projectors can be combined by using circular polarization for the stereo separation to support up to six users.

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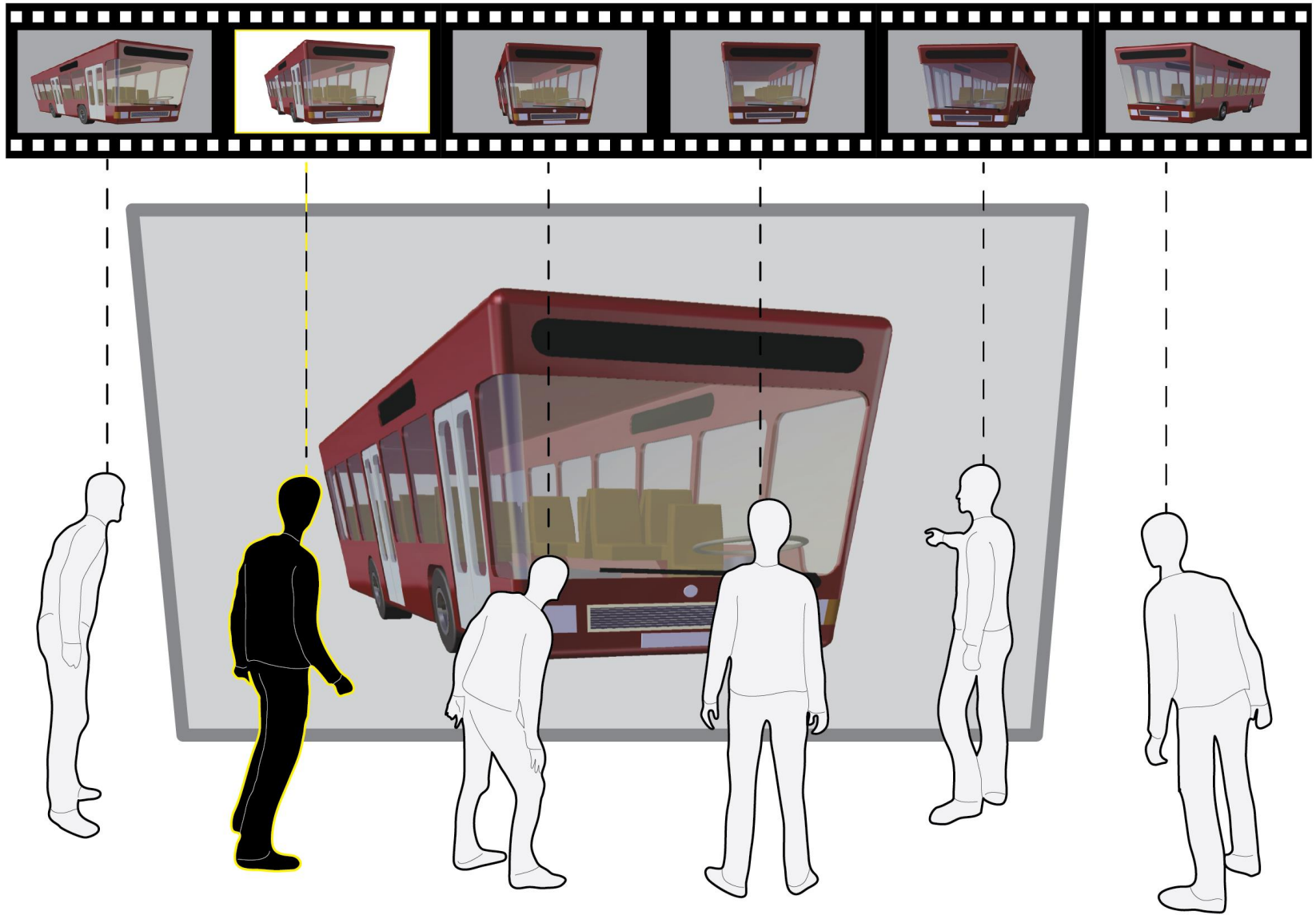
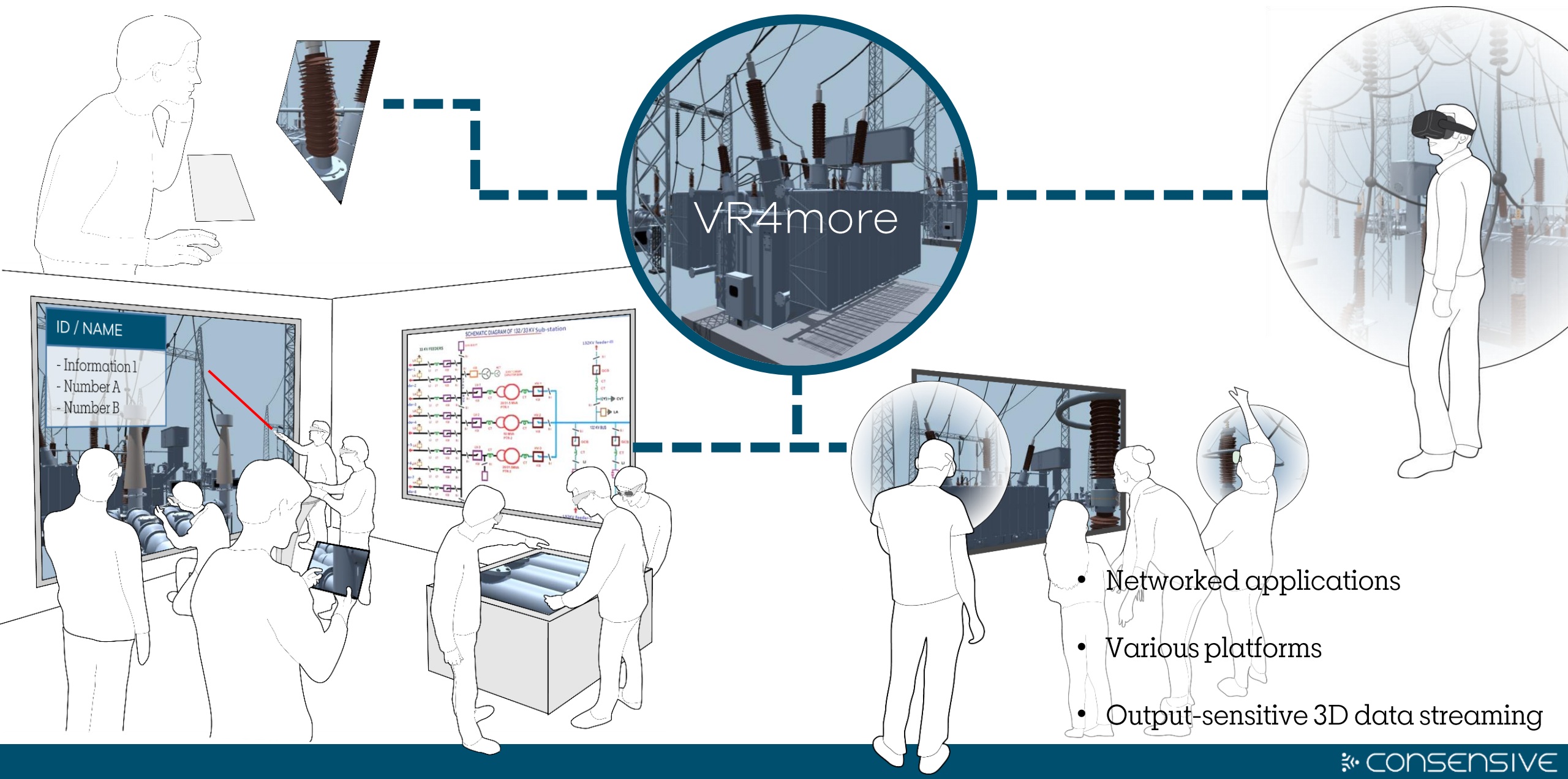
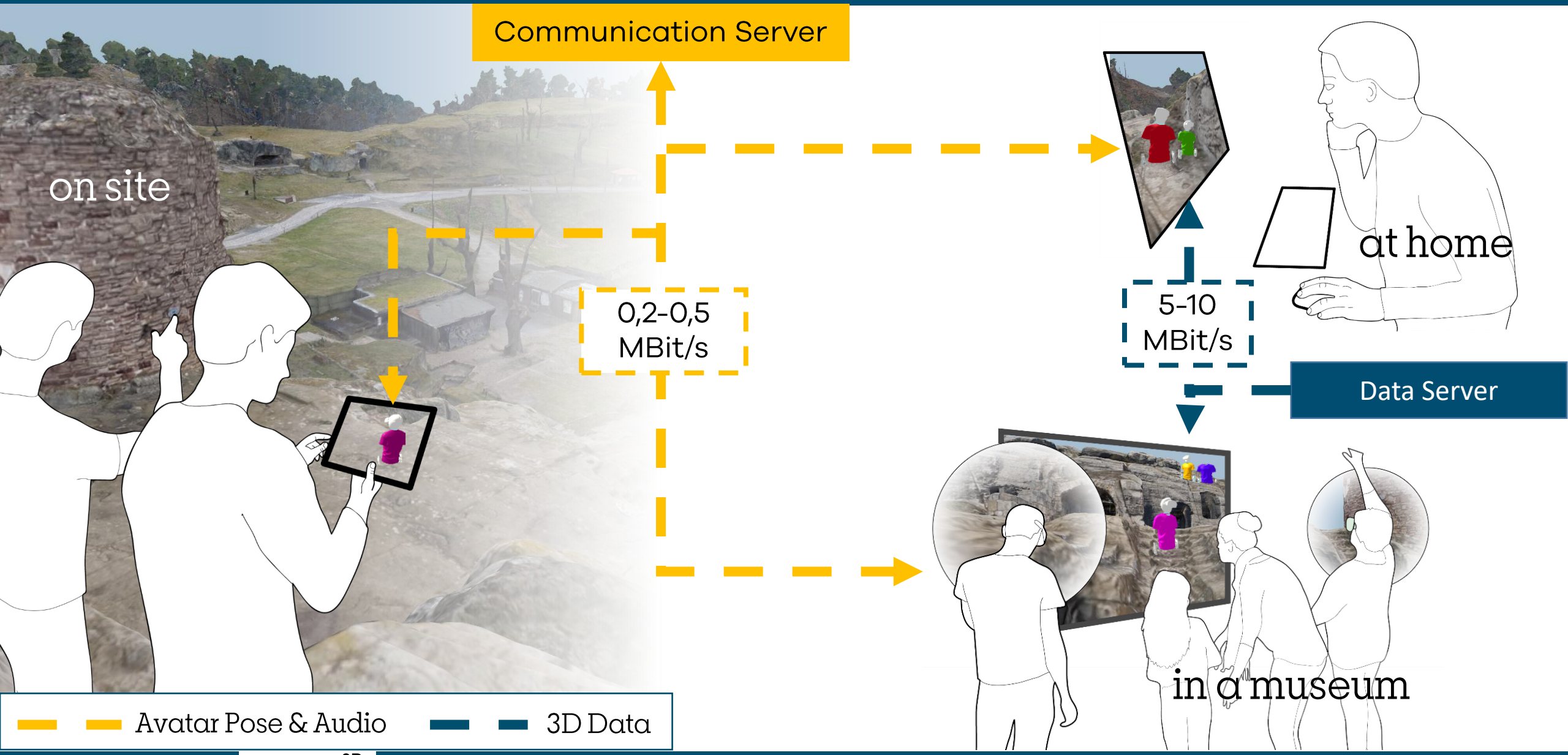


Collaboration Across Locations and Platforms



- Networked applications
- Various platforms
- Output-sensitive 3D data streaming

Social Mixed Reality



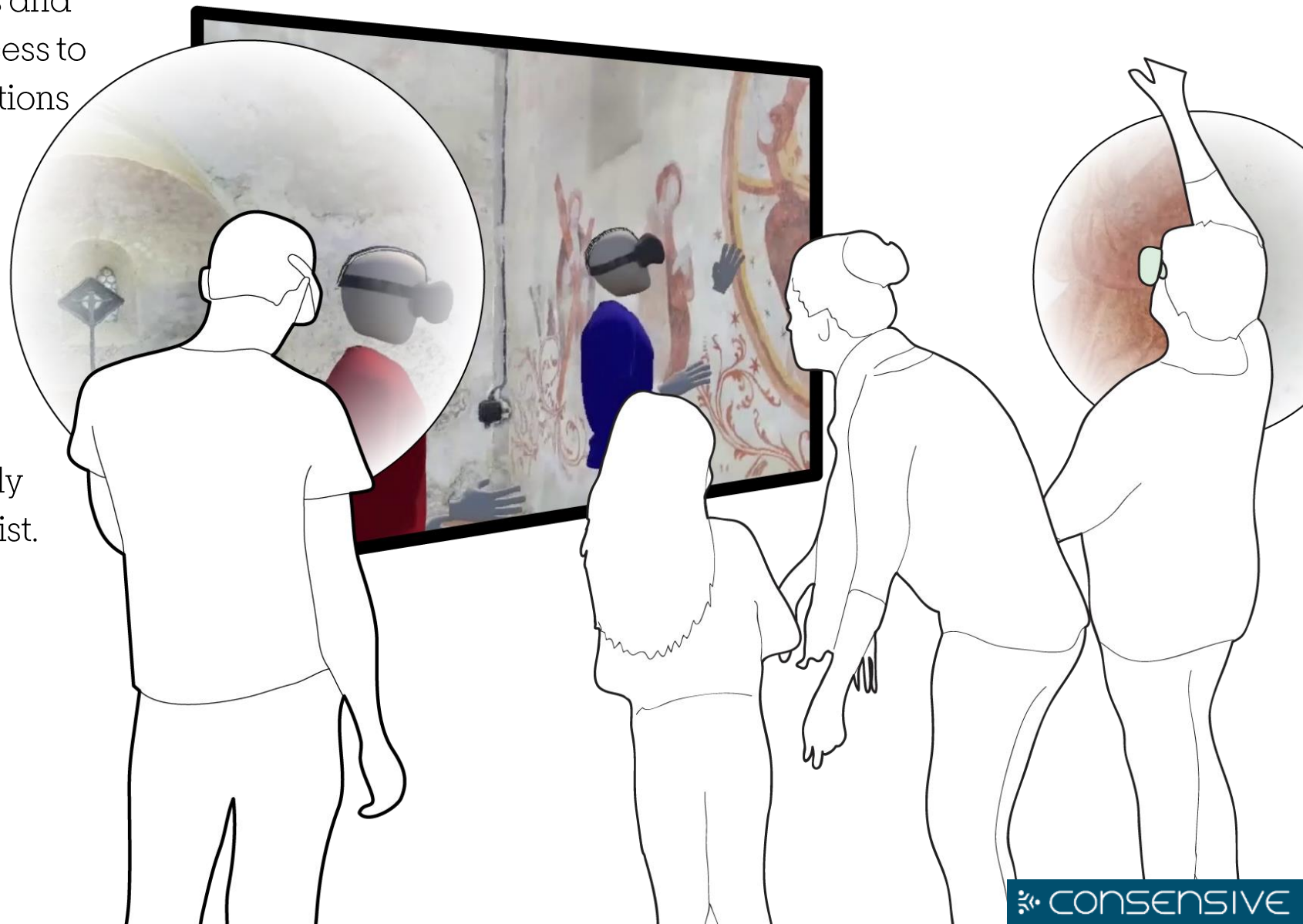
The Converseum

data courtesy of Bauhaus-Universität Weimar

The cost-effective installation for schools and museums offers a very low-threshold access to interactive experiences of 3D reconstructions of architectural monuments and historically significant places.

Other visitors of the digital twin or even the original on site can enter into direct exchange with the audience.

Visitors may put on VR goggles to experience the virtual places more immersively and thus turn from spectator to protagonist.



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Collaborative 3D Data Analysis

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Information visualization applied to high-resolution 3D models helps to convey and communicate complex interrelations. The contextualized information can be directly discussed and evaluated in our collaborative platform. Cooperative annotation tools facilitate the acquisition and retrieval of the gained knowledge.

VR4more Insight offers, e.g.:

- Embedded information visualization,
- Database interfaces and
- Cooperative annotation and retrieval tools

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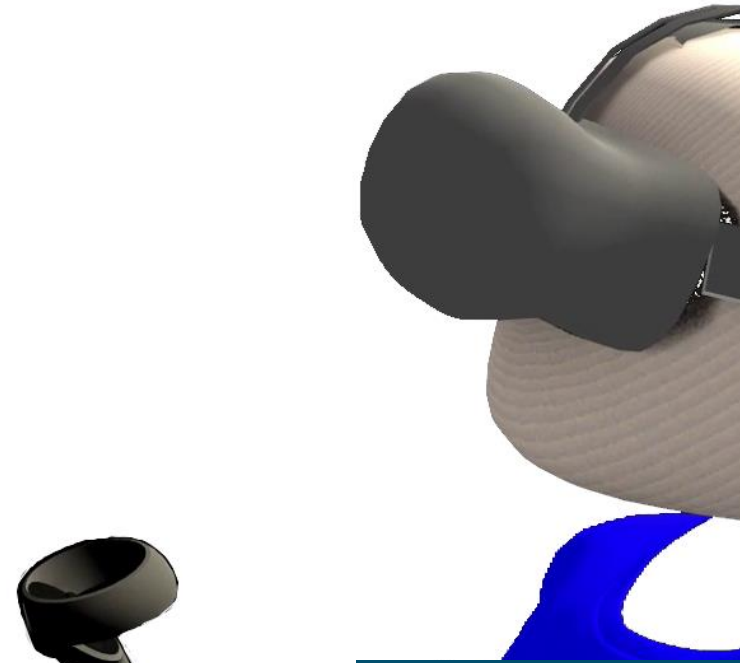
data courtesy of INFRALYTICA



St. Thomas, Halberstadt cathedral

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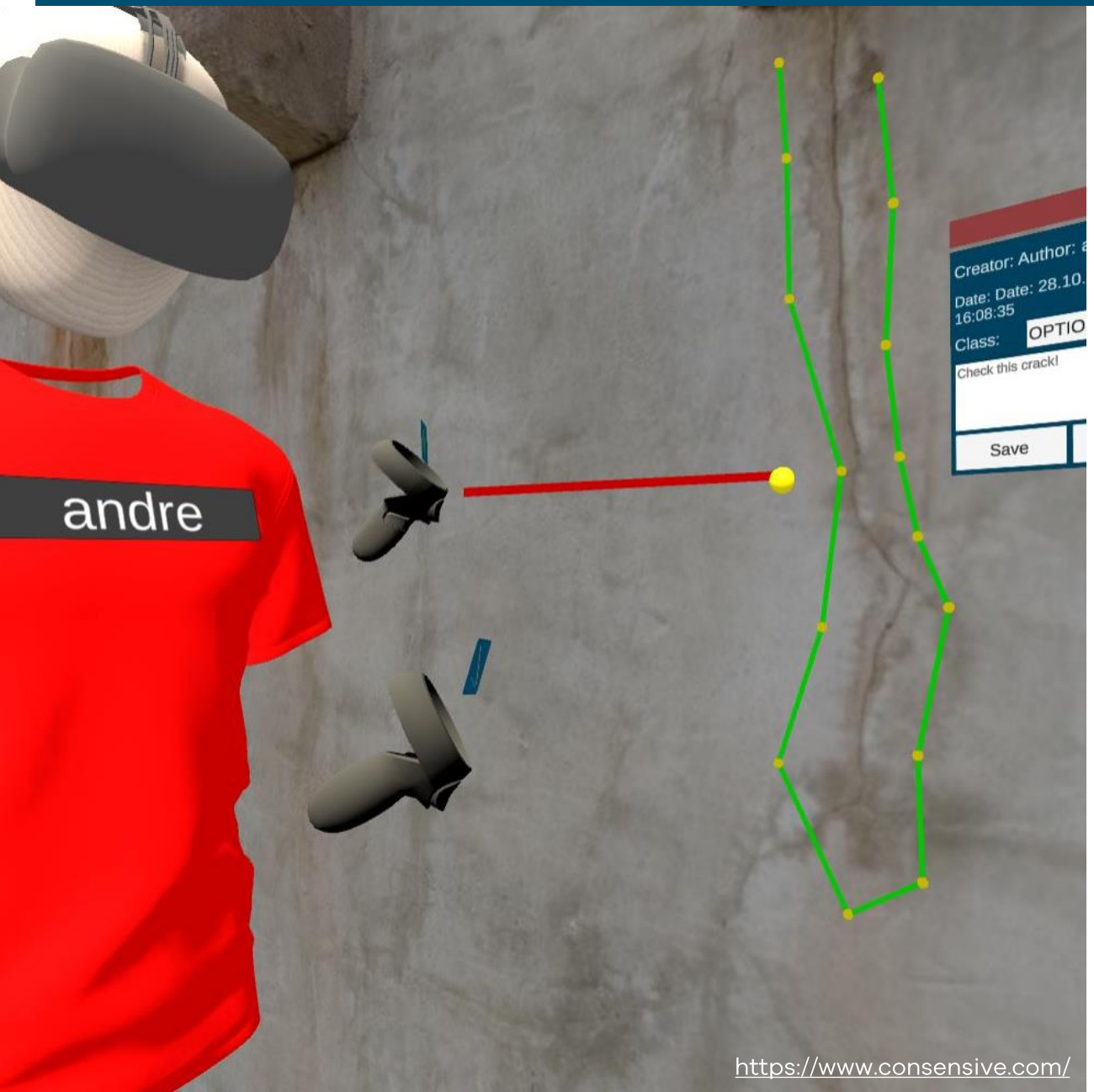
Collaborative Damage Mapping with Digital Twins



High-resolution 3D reconstructions of buildings, e.g. from photogrammetric acquisition, allow for a very detailed analysis of the surface quality. Visible cracks, spalling, discoloration or growth, for example, provide clues to the condition of a masonry structure. Even more meaningful is their change over time.

Damage mapping on the digital twins are accurate, comprehensible, and provide a basis for discussion among experts and those responsible for preserving the objects in question. Most importantly, they are easy to manage and linked to the time stamp of the annotated record. Thus, they simplify the observation of developments by comparing annotated recordings of the same details at different points in time.

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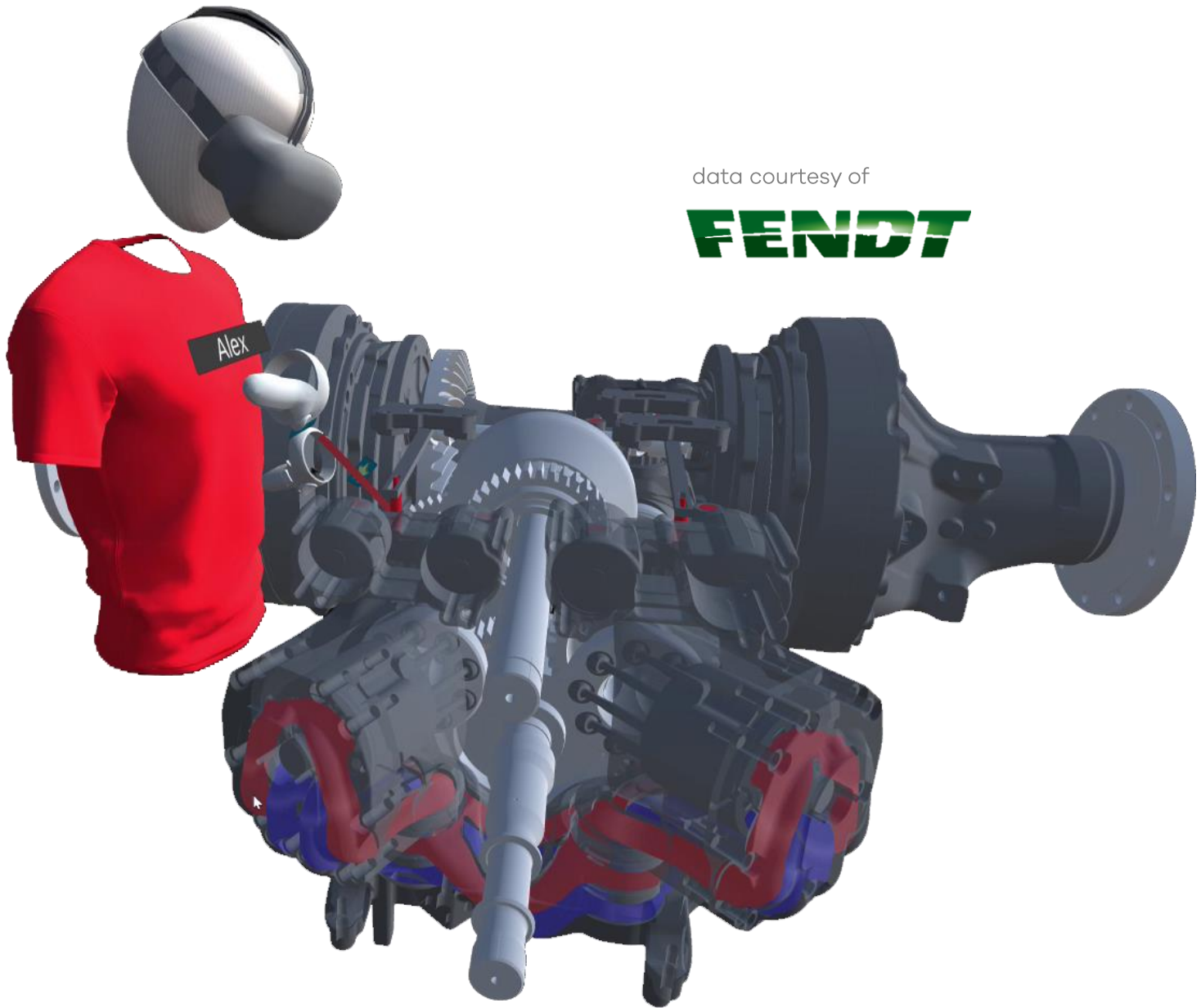
Explaining and Learning with Behavioral Models



Complex mechanical systems become comprehensible through observation and own experiments with them. The physical simulation in a mixed social reality offers a cost-effective and risk-free alternative to the real object, which often does not allow direct in-situ observation of its behavior.

The mechanical behavior often does not need to be simulated, which is computationally expensive. Mathematical modeling can be a better option, so that the resulting teaching/learning applications are data-saving and can also be run efficiently on mobile devices.

For further information, please contact
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Training and Evaluation in Immersive Simulations

Digital training applications for machine operation, for example in construction, not only require the simulation of machine behavior, but also of the behavior of the media being processed.

We develop heuristic models to simulate granular media such as earth, clay and gravel. On this basis, realistic training tasks can be created ad-hoc during runtime.

Our collaborative training applications can be used across locations. For local collaboration, we ensure that all participants are registered in the same coordinate system in order to maintain the consistency of audiovisual communication and to be able to react better to each other, for example when exchanging real interaction devices.

Für weitere Informationen wenden Sie sich bitte an info@consensive.com

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