ERGONOMIC **REVOLUTION**

ERGONOMY

XR FOR THE STUDY OF ERGONOMICS

The advancing technology of Extended Reality not only has the potential to take us into fascinating virtual worlds, but also offers innovative possibilities for application in ergonomic contexts. Ergonomics refers to the design of products, systems, etc. to optimize the interaction between people and their environment and improve health, safety and efficiency. Applying XR for ergonomic purposes opens up new ways to analyze workflows, optimize work environments, and test and adapt the ergonomics of products.

ADVANTAGES

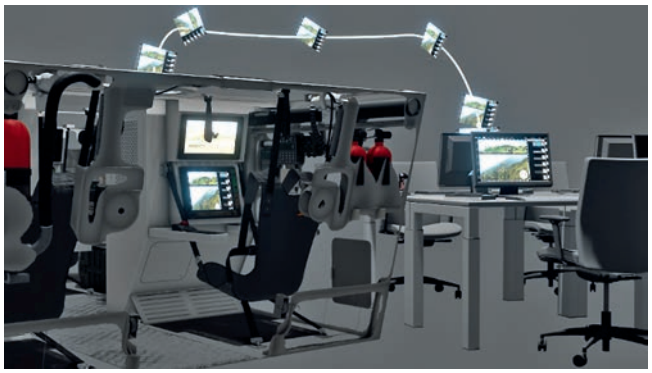
- **Realistic and immersive experience:** Users can immerse themselves in a virtual environment that resembles real working and environmental conditions.
- **Interactive manipulations:** Users can grab, move and interact with virtual objects to test different scenarios.
- **Time and cost savings:** Virtual simulation allows ergonomic testing to be performed earlier in the design process, reducing expensive physical prototypes and later adjustments.
- **Repeatability:** Testing can be done repeatedly and consistently to produce accurate and comparable results.
- **Data collection and analysis:** VR enables the collection of motion data and other relevant metrics to perform detailed analysis.

TECHNICAL REQUIREMENTS

- **VR headset** with a high resolution and refresh rate to ensure a realistic representation of the virtual environment.
- **Tracking systems** to precisely capture the user's movements and actions.
- **Input devices** (e.g., controllers) to interact with the virtual environment.
- **Powerful computer** to render the environment smoothly and in high quality.
- **Software** to create a virtual environment adapted to the ergonomic study.
- **Ergonomic measurement tools** such as motion sensors, EMG systems, eye tracking devices, etc., to collect additional data during the examination.

APPLICATION AREAS

- **Workplace design:** Evaluation of ergonomic conditions at workplaces, review of posture, position changes, accessibility of objects, etc.
- **Product design:** Evaluation of the usability of products, analysis of handling, identification of potential strains and fatigue phenomena.
- **Vehicle design:** Analysis of the usability of vehicles, placement of controls, assessment of visibility and ergonomics in the driver cockpit.
- **and much more**



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