

# **Fitness@home – A training center in your living room**

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New projection techniques, combined with exercise and an individually regulated supply of oxygen and scents, can transform your living room into a virtual training environment. Fraunhofer researchers and pro4senses GmbH will present the system at CeBIT.

Anyone wishing to train for their next mountain hike will be able to benefit from the new possibilities. Simply get on the stepper, switch on the projector, let your eyes wander over snow-covered mountains, and breathe in the corresponding concentration of oxygen through a comfortable mask. Before you know it, you'll feel like you are actually climbing the Zugspitze.

New projection techniques combined with modern fitness devices and an individually regulated supply of oxygen and scents can create a virtual training center inside your own living room.

Researchers at the Fraunhofer Institute for Computer Architecture and Software Technology FIRST in Berlin have developed an innovative technology that projects razor-sharp images in one piece onto surfaces of any curvature. Special software automatically calibrates the projectors required and merges the images with pixel-precise accuracy.

Even in cupolas, on pillars or on curved walls, films can be played back seamlessly and undistorted with a resolution of up to 4096 x 2048 pixels. Curved and wide-angled projection surfaces have the great advantage that they correspond to the angle of vision of the human eye and give

viewers the sensation of being at the heart of the action. The speed at which films are played back can also be individually controlled by the viewer's own movements via an integrated fitness device, thus enhancing the films' natural, realistic effect.

At present, pro4senses GmbH is working on a system that can measure the current level of oxygen in the user's breathing air. The system then suitably adjusts the degree of difficulty of the training program and doses the supply of oxygen accordingly. The new technology can be used for fitness training at home, as a means of preparation for competitive sports, or for therapeutic treatment.

The system will be presented for the first time at CeBIT in Hanover on March 4 through 9. At the Fraunhofer stand visitors can get on an exercise bicycle and try out the virtual training center for themselves.

Source: Fraunhofer-Gesellschaft

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