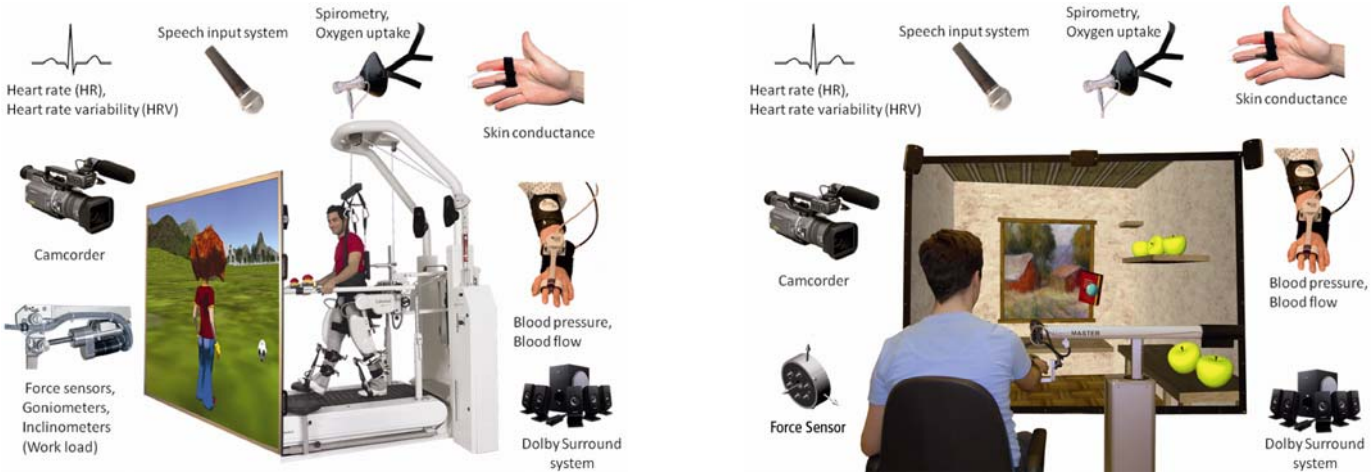
MIMICS

www.mimics.ethz.ch

MIMICS - Multimodal Immersive Motion rehabilitation with Interactive Cognitive Systems

Seventh Framework Programme: Cognitive Systems, Interaction and Robotics

Robot-assisted rehabilitation methods are to be enhanced with multimodal display and cognitive systems so that the patient's motivation can be improved leading to a more intensive training and to an improved therapeutic outcome.



Setup for lower and upper extremity rehabilitation with the Locomat® and HapticMaster®.

Project

MIMICS will enhance a robot-assisted motion rehabilitation system with adaptive feedback based on physiological and cognitive data (motion, forces, voice, muscle activity, heart rate, skin conductance etc.). These data will be acquired in real-time, and the state of the patient and the overall psycho-physiological condition will be inferred from them.

In order to make rehabilitation training more realistic and motivating, this information in combination with immersive virtual reality (VR) systems including 3D graphics and 3D sound will be used to drive the rehabilitation robots.

Technical progress is most likely to occur in real-time sensing, fusion of multi-sensory real-time data streams and multi-modal immersive VR interaction. Much effort will be devoted to patients who will play an important role in evaluating the effectiveness of the system.

It is expected that MIMICS technology will enter clinical routine so that large patient populations (e.g. stroke, spinal cord injury patients) can benefit.

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For further information please visit our project website:
www.mimics.ethz.ch

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