Gefördert durch:

Bundesministerium für Wirtschaft und Klimaschutz

aufgrund eines Beschlusses des Deutschen Bundestages

Forschungsnetzwerk Mittelstand

IRIS
Instrumented rehabilitation systems for the identification of specific movement patterns.

Project Information:

AIF Project

Duration: 01.07.22 - 30.06.24

Motivation

- Relevance and lack of rehabilitation activities that can be performed under telematic monitoring independent of location.

Goals:

- Instrumentation of a Bicycle Ergometer
- Detecting potentially harmful posture of a patient
- Assessing the effectiveness of rehabilitation measures critically and objectively
- Telematic implementation of rehabilitation

PFI Germany

ISC Germany

Project description :

The aim of the project is the development of a demonstrator, which enables the detection of potentially damaging movement sequences and postures by means of inexpensive sensor technology and thus an evaluation of the quality of rehabilitation measures based on objective data. The system is being developed as a telemedicine tool that records and analyzes data during movement, transmits it to the therapist, and enables the therapist to care for his patients in their physical absence. The solution includes the definition and procurement of the required electronic components, the development of a positioning concept for the attachment of the sensor technology, the integration and construction of the demonstrator as well as the development of evaluation software. Subsequently, the first test version will be evaluated, the telemedical application will be developed and a larger number of test persons will be recruited to verify the demonstrator. Comparative measurements will be carried out between the demonstrator and an optoelectronic measurement system.
The project's significant innovation lies in its impact on the health care and information technology sectors (predominantly SMEs) in terms of the use of a wide variety of sensors and their temporal synchronization (sensor data fusion). Interdisciplinary synergy effects promote the development of new business concepts. The use of intelligent technologies, in the sense of the further development of bicycle ergometers, leads to an expansion of the customer base with a simultaneous expansion of existing business areas. Companies that produce similar products can diversify their product ranges through their own further developments, based on the findings of the research project.

If you are interested in the project and would like to be invited to the meetings of the Project Monitoring Committee, please contact :

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