



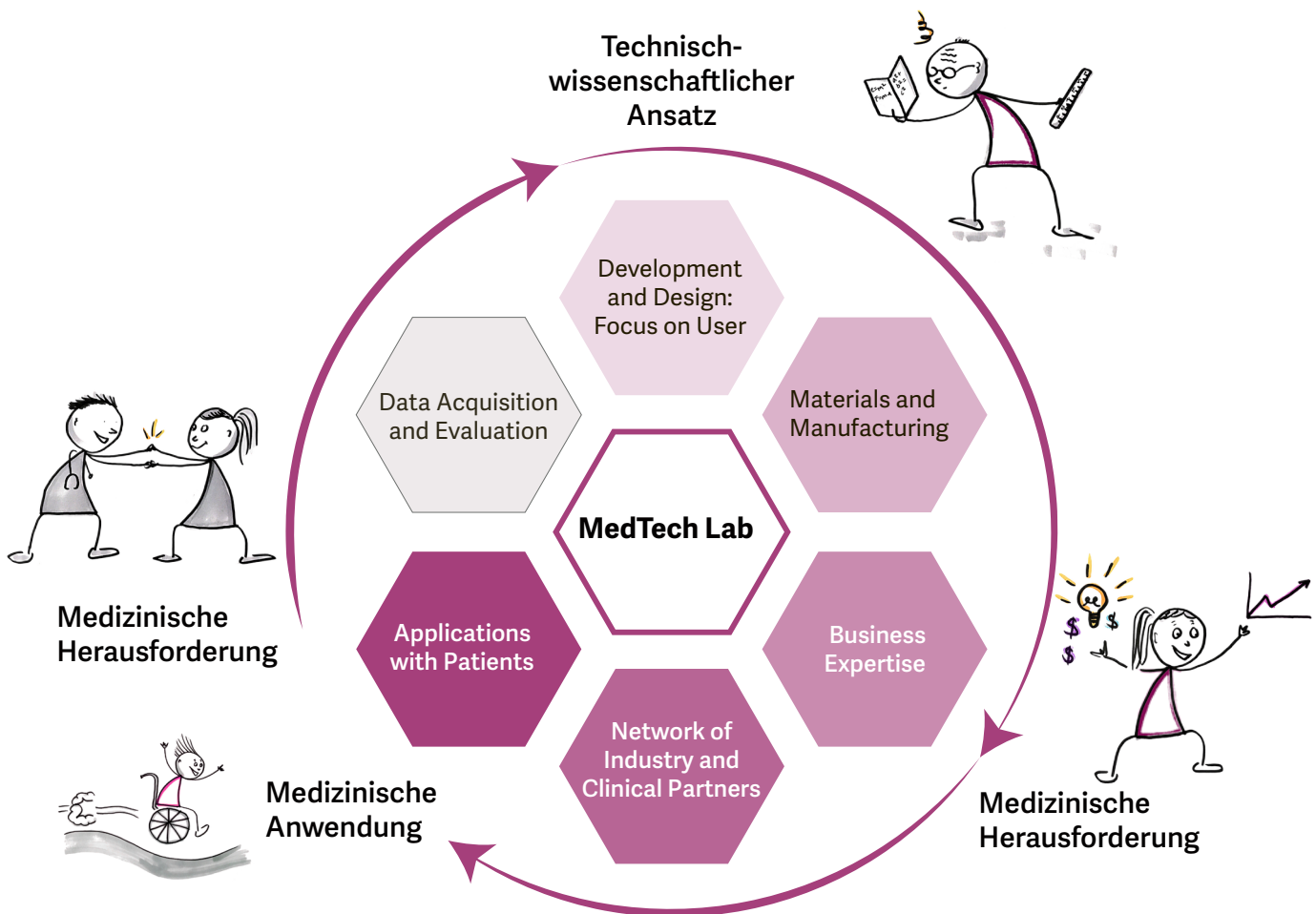
MedTech Lab

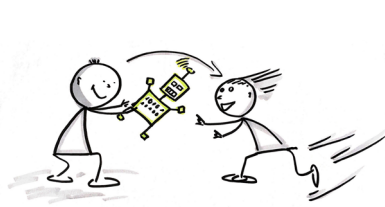
Competence in medical engineering

MedTech Lab

Competence in medical engineering

The MedTech Lab supports partners in finding commercially successful solutions to their clinical challenges. Our methods are based on technically and scientifically approved approaches. In workshops, we will elaborate how we may support you efficiently and effectively.





Technology transfer

We support you in the whole project life cycle for medtech projects. We are specialised on filling the gap between research and clinically applicable products.



Networking

We connect experts for successful projects on a networking platform and enable access to this network.



Consulting

We offer competent consulting in regulatory questions that occur in the development process of medical products. Our support especially focuses on the application of risk management (ISO 14971) and usability (IEC 62366).

Project examples

Individualized footlifter orthosis made of carbon composites improves gait patterns and reduces workload for orthopedic technician

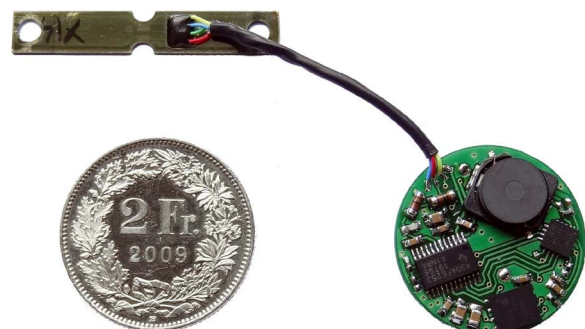
Footlifter orthoses enable patients with plegic or spastic impairments in the ankle joint to walk more easily. Existing footlifter orthoses are modified to fit patients only after a pre-selection of configurations, which leads to inadequate care.

Together with partners from industry, medical science and research, IWK Institute for Materials Technology and Plastics Processing developed an innovative orthosis based on modular parts which enables a very efficient configuration for each individual patient. Input for the mechanical design and optimization of the carbon fiber lay-up was gathered with a patient walking in a movement lab. The influence of structure and materials was hence modeled and applied with regard to the patient.

An implantable data logger allows for continuous monitoring of bone healing

Flexible internal fixation is an essential modality in today's fracture treatment. It promotes secondary bone healing by imposing confined mechanical stimuli at the fracture site, while still permitting early recovery of limb function. However, clear guidelines for optimal healing outcome require in-depth insight into fracture healing under in-vivo conditions. An implantable and autonomously working electronic unit was developed for continuous recording of fracture motion under unimpaired natural locomotion by ICOM Institute for Communication Systems. The microprocessor acquires and processes movement data such that only statistically meaningful parameters are stored. This lean data management

allows for quick data download using an RFID transponder. Battery lifetime is around 4.5 months. A pilot study in ten sheep was conducted by AO Research Institute Davos. Reliable functionality of the data logger was proven and first insights into the bone healing process could be derived. These insights will be applied in a consecutive study in humans.



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