via User-Centered Design

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Background

Repetition is a crucial factor of succ in neurological rehabilitation¹. Techn assistance can help to raise patient's motivation. In REHA2030, developed a needs-oriented serv model for stroke rehabilitation an related technical prototype.

Results

The prototype consists of 4 main parts: an app for patients, a web interface for therapists, a robotic device for hand rehabilitation and a back end. The patient's app provides support in terms of exercise plans, activity monitoring and communication with therapists. It connects with the robotic device for exercises and games. The therapist's web interface provides support during the entire therapy process.



Materials and Methods

| cess | The technical prototype w |
|-------|----------------------------|
| nical | based on the User-Centered |
| the | approach. The require |
| we | gathered in workshops with |
| vice | and therapy experts, |
| d a | technical solutions and ev |
| | iterative manner. |
| | |

Patient user interface: from initial design drafts to a demonstrator



Design² (UCD) ements were rehabilitation converted to valuated in an





The inclusion of the later users during the whole design process allows the development of a system that is based on actual users' needs. The final prototype will be evaluated with therapists and patients in a real-life test setting and improved based on the findings.

¹ Daly JJ, Ruff RL. Construction of Efficacious Gait and Upper Limb Functional Interventions Based on Brain Plasticity Evidence and Model-Based Measures For Stroke Patients. The Scientific World JOURNAL. 2007;7:2031-45. ² ISO 9241-210:2019. Ergonomics of human-system interaction — Part 210: Human-centred design for interactive systems. 2019.

Conclusion and Outlook