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Solutions on assistive robotics at cester-larm

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Agewell project approaches an open problem in healthcare for the aging population of Europe, committing to provide a viable solution of the (sub)acute therapy for stroke patients. The implementation team aims to deliver a solution that can be extended towards robotic assisted rehabilitation in different phases of the post-stroke therapy/rehabilitation as well as an exercise/training devices for healthy aging of the elderly population. Some proposed solutions shall be outlined as referring to LAWEX, ASPIRE, and PaRReX patent pending designs. The structure of LAWEX is a non-conventional cable-driven open architecture, which allows accessibility of patients under treatment. Using wristbands, cables are connected to the end-effector which covers the limb to be trained. ASPIRE is a spherical parallel architecture intended for shoulder assistance as it can perform multiple feasible shoulder motion ranges. PaRRex can be seen as a wearable exoskeleton with modular structure, consisting of two parallel modules, one for the forearm mobilization (elbow flexion) and the pronation/supination, the second parallel module is designed to mobilize the wrist (flexion/extension and abduction/adduction).

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