# REIWork: Reconfigurable Environments for Interactive Workspaces

The aim of the project is to develop a new kind of interactive work environment. The devices, depending on the current user, as well as the work performed by him, will dynamically adjust the physical surfaces by changing the arrangement of individual table segments and their height. In addition, the segments on the table surface are also complemented by mobility in order to reach objects located on the distant edges of the table.
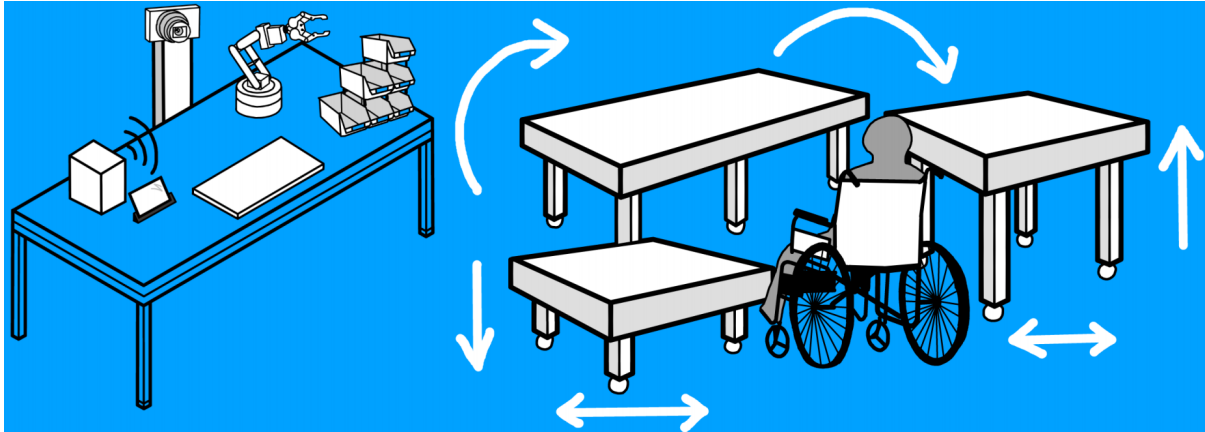
Previous research mainly focused on adaptation and modification only in the digital domain on device screens. Of course, the use of adjustable desks is also becoming more and more popular on the market, but they require human intervention to change the height. In the case of the presented project, the system will constantly monitor the condition and position of the user using machine learning and biomedical sensors (EMG, EEG) with RGB-D cameras. Thanks to the collection and analysis of data, the environment will support the concentration and productivity of the employee while ensuring work safety in mixed environments - industrial, semi-automatic, automatic and, above all, in a situation of cooperation between people and manipulators. Based on the collected data, the actuator system will be responsible for changing the position.

In order to test the system, a series of preliminary studies (literature review, questionnaires and interviews with the target group) and two user experiments will be carried out. Initial research will help define system characteristics and understand employee needs. The main study will be to verify the acquired knowledge through practical tests carried out with the prototype.

The result of the project will be the final version of the prototype, which can be patented and implemented in the target environment. The project will result in a set of new rules for designing innovative work environments. The effects of all work and results will also be included in articles published at high-class international scientific conferences. The project will contribute to a more equal and diverse society by creating places for work, where people can happily work irrespective of their physical limitations. Our results will contribute to work quality and efficiency while prioritising the wellbeing of the workers. Adaptive interfaces will prevent boredom and repetitive movements, thus making everyday work more engaging and healthier.