

# USER INVOLVEMENT IN THE DEVELOPMENT OF AN INTELLIGENT ASSISTIVE TOILET SYSTEM FOR PEOPLE WITH DISABILITIES



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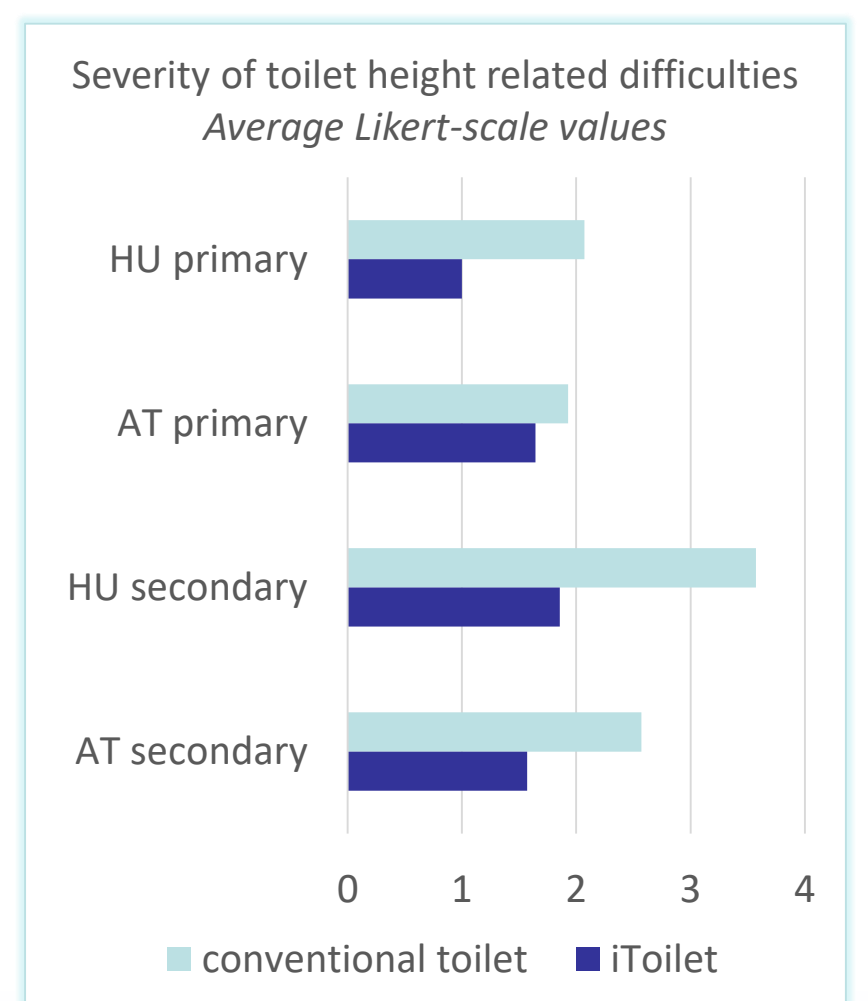
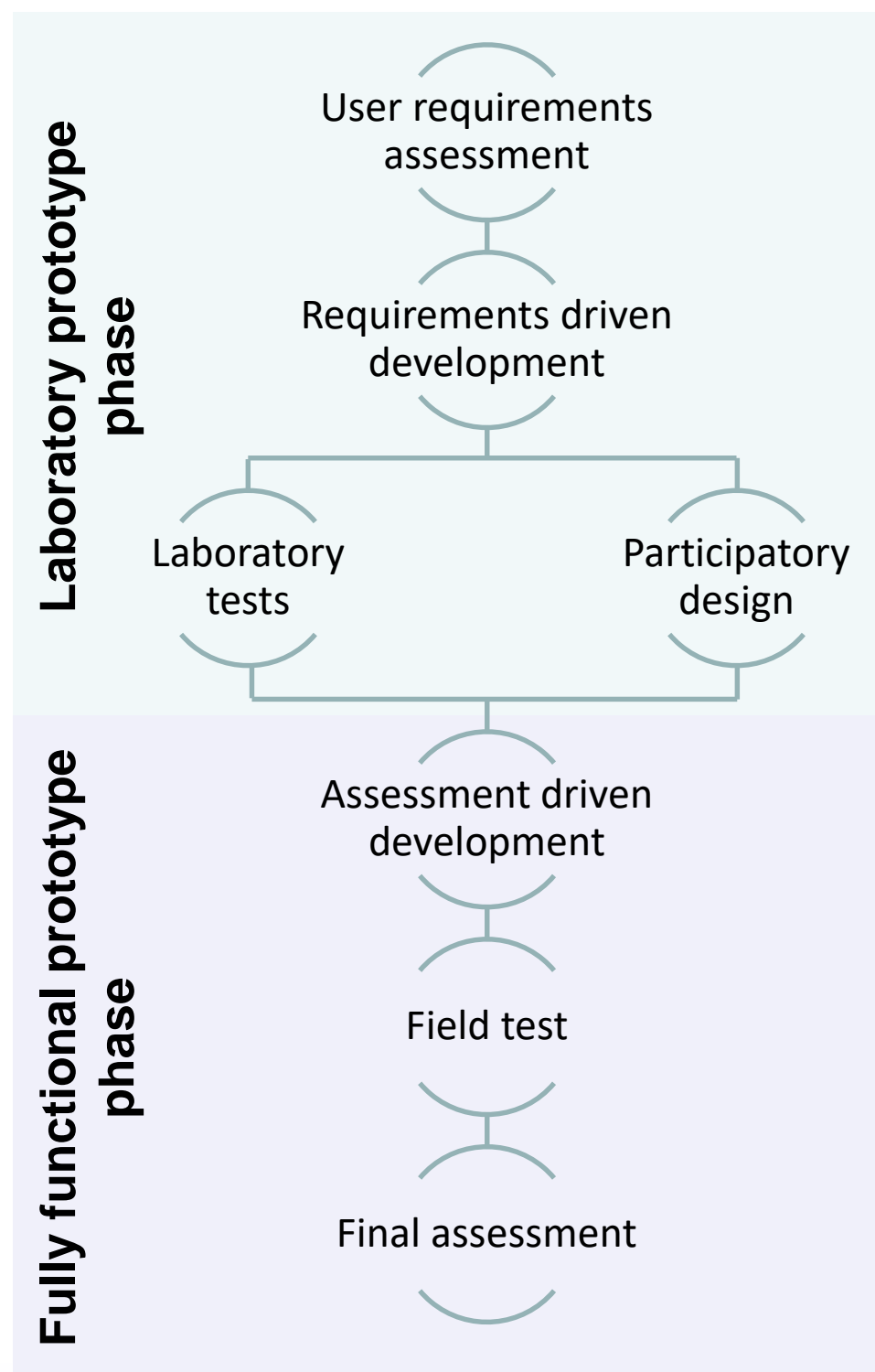
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**Introduction:** Toileting is one of the most common activities of daily living that poses numerous risks for people with physical disabilities. The iToilet project of the Active and Assisted Living Programme of the European Union aims to develop an intelligent assistive toilet system so as to make the toilet use of people with disabilities safer and easier.

**Methods:** Development and assessment of the iToilet system has been supported with extensive user involvement starting with a preliminary user requirements assessment, then, during the development phase, by repeated testing of modules and functional laboratory prototypes at an Austrian day-care centre and at a Hungarian rehabilitation hospital. 28 users (11 male and 17 female, mean age 58.2±6.9) tested the laboratory prototype. Users were asked to imitate toilet use as realistically as possible from entering till leaving but without undressing. After the test, they assessed the difficulties of toilet use and the functions of iToilet on a 1-5 Likert-scale. In addition to the primary users 14 caregivers also gave their opinion about the iToilet system.

**Results:** The users confirmed that using the iToilet is less problematic compared to conventional toilets. Austrian/Hungarian primary users gave 0.29/1.07 less Likert-scale scores to the difficulties related to toilet height when using the iToilet system. In addition to these, stand-up support got also high ratings from caregivers.

**Conclusions:** Laboratory testing of the iToilet prototype revealed strengths and weaknesses of different iToilet modules. Bearing the gathered user recommendations in mind, development of the fully functional prototype has begun.



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