An Automatic Toilet to Support Active Living

The European AAL project iToilet develops a computer-based toilet system which allows independent living with more dignity and reduces care requirements.

The iToilet research and development project supports older persons living independently at home through an ICT-enhanced toilet system. This empowers older persons to live more independently and with increased dignity and reduces the workload of care persons when providing personal assistance with daily hygiene.

Background and Motivation
Despite rapid technological developments, surprisingly, there is one very common appliance we use several times a day which has not changed much since its invention: the toilet. The iToilet project addresses the needs of older or physically challenged persons by designing a supportive toilet adapting to the individual user's needs.

The solution is based on a height- and tilt-adjustable toilet seat placed on top of a standard toilet bowl. Additional features include, for instance, voice control, automatic adaptation to user preferences, recognition of potentially dangerous situations (e.g. falls), as well as an interface to care documentation or guidance for use. The iToilet system increases primary end users' independence by enhancing body stability when sitting on the toilet (individually adjustable optimum height, hands are free for handles), by dynamically adapting tilt and height to support the sitting down and standing up process and by increasing safety via emergency detection.

User-Centred Approach
The iToilet project follows a strictly user-centred transdisciplinary approach with continuous ethical supervision. End users are involved right from the beginning in eliciting user requirements and in participatory design activities. The iToilet project evaluates prototypes together with end users in a laboratory. The final prototype will be tested at two institutions over a period of four months, each involving at least twenty-five end users and five to seven caregivers.

Room with iToilet

Project Title
iToilet – ICT-Enhanced Toilet Supporting Active Life
Programme
Active and Assisted Living Programme
Consortium Manager
Vienna University of Technology
Project Coordinator
Prof. Dr Geraldine Fitzpatrick
geraldine.fitzpatrick@igw.tuwien.ac.at
Further Project Partners
CareCenter Software GmbH
CS Caritas Socialis GmbH
Országos Orvosi Rehabilitációs Intézet
Santis Kft.
Smart Com d. o. o.
Synthema Srl
Participating Countries
Austria, Hungary, Italy, Slovenia
Project Duration
2016–2018
Project Website
http://itoilet-project.eu
Taalxonomy
T01-06 Personal Hygiene (main category)
T01-09-01 Care Services (further category)
T01-09-03 Care Documentation
(further category)
T02-04-03 Sanitary Services (further category)
T03-05-03 Automatic Alarm (further category)