Development and Evaluation of Assistive Terminals for the Improvement of Functional Performance of the Elderly in a Variety of Life Centers

Abstract:
In this paper the authors present the equipping of a 1:1 scaled AAL laboratory apartment with prefabricated compact “terminals” that concentrate on assistive technology. The development has been conducted within the Project LISA HABITEC, which is funded by the City of Bozen, Italy. Within this project new possibilities have been investigated, to enable an independent and self-sufficient life for elderly. Therefore, terminals for the different life centers of an apartment (bed, bath, living room, entrance area), have been developed, where service and support modules can be easily attached, e.g. by plug-and-play. Thereby, the proposed AAL solution is highly customizable towards the user’s needs, health situation, and financial resources. The service modules contain functions such as unobtrusive detection of health data (e.g. ECG, temperature etc.), active support systems like stand up support (e.g. by decent integrated handles), and service robotics integrated into the furniture. This paper describes the outcomes of the second development and evaluation cycle in the project (formative, pretesting) in which through standardized qualitative test in a laboratory test apartment, with 9 test subjects (N =
9), terminals of four different live centers, have been evaluated (technology verification, workflows, usability, etc.), in order to provide input for improvement, automation and extension of the functionality of each terminal in the third (final) development testing cycle.

Abstract:
Active Assisted Living, Smart Home, Unobtrusive ICT Implementation, Modular Subsystems, Sensor Application

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