



# An ICT platform for independent living and remote health monitoring



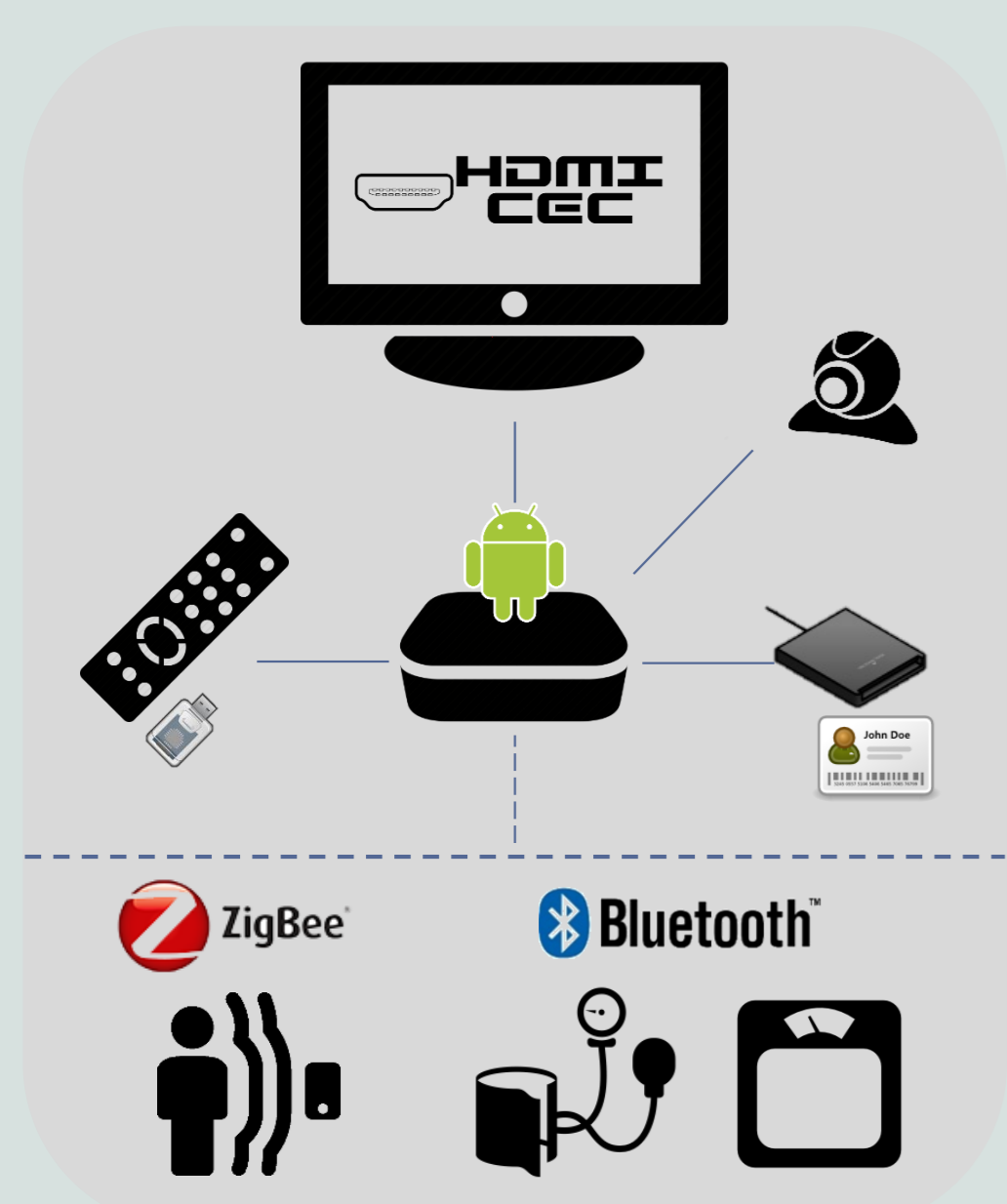
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## Abstract

Active ageing and tele-health platforms are, nowadays, the most sought-after means to overcome the rising problem of population ageing. Helping older adults live autonomously in their homes through ICT solutions could be a way to relieve the burden on the Healthcare Systems. This poster presents a novel ICT platform designed specifically for the elderly and aimed to improve their independent living and their health status, exploiting remote health monitoring features. Preliminary studies on usability allowed to improve the system in preparation for the field trials in three European countries

## Hardware at home



## HEREiAM platform architecture

The HEREiAM platform architecture can be divided in three levels:

- The **Home Level** includes all the hardware and software components installed in the users' homes.
- The **Platform Level** includes features enabling the secure exchange of medical data with a remote server, according to the current regulations. It follows a Service Oriented Architecture (SOA) and a documental approach. It is an evolution of the commercial product X1.V1. The medical data comply with an XML schema derived from the CDA, an HL7 draft standard.
- The **Third Party Level** includes external service providers, caregivers or relatives of the users that, through a web portal developed for them, will have access to some data and will be able to communicate with the users at home.

## Health telemonitoring service

Home level



Platform level



Caregivers level

## Platform evaluation: elderly

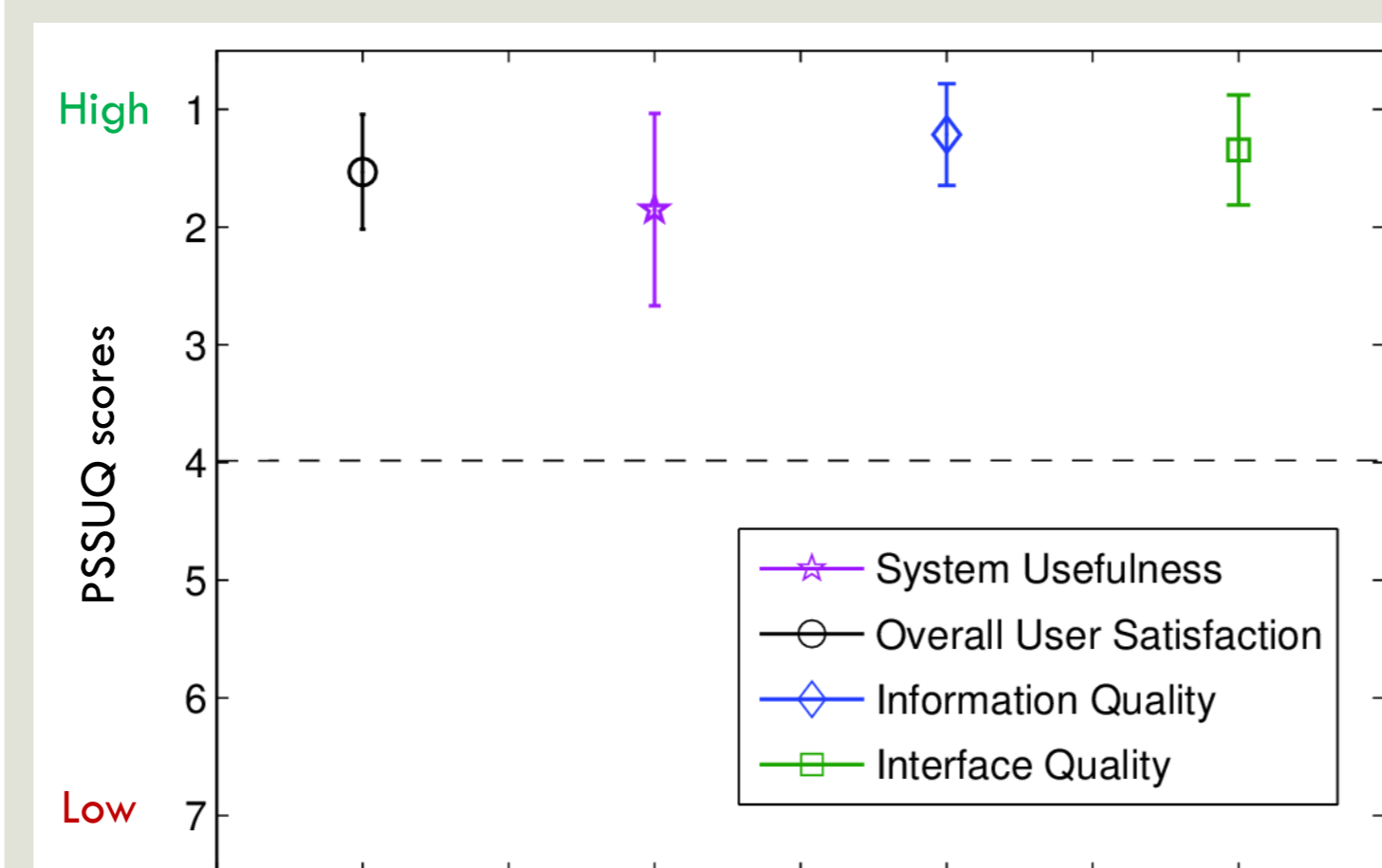
Materials and methods

**User sample:** 28 older adults (14M and 14F, aged  $79 \pm 6$ ). Three of them had a primary school certificate, 22 had a high school diploma and the remaining 3 had a university degree.

**Test methods:** brief presentation of the system by the experimenter and set of tasks to be performed with the app and the medical devices. No sensible data have been gathered during the tests.

**Evaluation:** all participants filled in two usability questionnaires, the System Usability Scale (SUS) and the Post-Study System Usability Questionnaire (PSSUQ).

All the results are encouraging. The elderly rated the system  $85.8 \pm 13$ , over 100, with the SUS, whereas the four different results generated by the PSSUQ questionnaire are:



## Platform evaluation: general practitioners

**User sample:** 7 general practitioners (3M and 4F, aged  $41 \pm 13$ ).

**Test methods:** to evaluate the Health Portal usability, the GPs were asked to autonomously use the website, populated with real data taken from one of the researchers.

**Evaluation:** all participants were asked to fill in two questionnaires, the Website Quality (WQ) and the WebQual 2.0 questionnaire and one semi-structured interview..

	Mean	Stdv
Technical adequacy	6.063	0.312
Content quality	6.167	0.167
Specific content	5.762	0.218
Appearance	6.086	0.167

Website quality

	Mean	Stdv
Usability	6.089	0.106
Information quality	6.122	0.192
Service interaction	5.735	0.344
Overall	6.286	0.488

Webqual 2.0

## HEREiAM project overview

HEREiAM - An interoperable platform for self care, social networking and managing of daily activities at home.



**Name of the project:** HEREiAM  
**Coordinator:** University of Cagliari  
**Duration:** 42 months  
**Starting date:** 1st July 2013  
**Partners:** IT, BE, NL, RO  
**Website:** [www.hereiamproject.org](http://www.hereiamproject.org)  
**Twitter:** @HEREiAMproject



## Acknowledgements

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