

# U-CARE: REQUIREMENTS ELICITATION FOR AMBIENT ASSISTED LIVING

J.W. van 't Klooster<sup>1</sup>, B.J.F. van Beijnum<sup>1</sup>, H.J. Hermens<sup>1,2</sup>

<sup>1</sup>University of Twente, Faculty of Electrical Engineering, Mathematics and Computer Science, the Netherlands

<sup>2</sup>Roessingh Research and Development, the Netherlands

## 1 Introduction

Western countries are facing similar trends in healthcare: population is aging, life expectations are growing, the number of healthcare professionals is decreasing, cost pressure on healthcare systems is increasing and urbanization is taking place [1]. ICT can however provide routes to more efficient healthcare solutions: it may provide both quantitative and qualitative improvements by improving access, reducing cost and raising quality [2].

Home care is one important healthcare area. It aids elderly to stay at home as long as possible before moving towards more intensive care environments; it has the potential to alleviate care needs and costs; and it potentially improves the health status of elderly by empowerment and context-dependent monitoring and treatment. This submission presents our requirements elicitation approach for ICT-based home care services, also referred to as Ambient Assisted Living (AAL).

## 2 Challenges and Goals

Integrating and tailoring home care applications potentially improves home care. However, we identify 3 main challenges: 1) how to successfully merge home automation, home care and telemonitoring services; 2) what are viable business models; and 3) how to identify, tailor and evolve the desired services. These 3 challenges are addressed in the 4-year U-Care project, which started in November 2008.

The goals of the project are to develop 1) a model of the home care domain and its stakeholders; 2) a validated prototype of the U-Care services platform addressing the three challenges mentioned; and 3) a business model to assure the platform viability. We foresee that personalized, adaptive and integrated home care support can be viable from both an economic and functional point of view. Therefore, business level, application and technical aspects are studied. Previous research efforts are incorporated (e.g. with respect to telemonitoring systems [3]). This contribution is however limited to application requirements aspects.

## 3 Interview Design and Results

The ICF was used in semi-open interviews to obtain the current health status, problems, needs and current technology familiarity of 10 clients aged 60+ in a care valley in Sittard, the Netherlands, and 4 care professionals. The resulting client wishes for support were checked with their caregivers. Subsequently, a scenario development workshop was held to prioritize these wishes, among different stakeholders and project partners. Then, the prioritized wishes were formatted into scenarios, narrating person's future use of the to-be-developed technology [4]. The consortium scrutinized and validated the scenarios afterwards.

The interviews revealed the following items of interest for future technological support: providing daily structure, memorizing events, information on activities, support for medication, safety monitoring, and finding friends to conduct activities with. Using this input, three scenarios were synthesized and validated for three service classes: reminder and information services; remote monitoring and feedback services; and social interaction support services.

## 4 Concluding Remarks

We found that the ICF aids in home care services identification. Its holistic health model facilitates a broad client assessment and understanding. By involving stakeholders and experts in the requirements elicitation process, agreement on further developments was obtained, focusing on reminder, health management and community services.

## References

- [1] J.W. van 't Klooster et al. What do Elderly Desire? A Case For Virtual Communities. *PROVE 2009 conference*, Thessaloniki, 2009.
- [2] T. Broens et al. *Medical Informatics*, Springer-Verlag, 2001.
- [3] MyoTel, available online: [www.myotel.eu](http://www.myotel.eu).
- [4] Alexander, I.F. et al. *Scenarios, Stories, Use Cases*. John Wiley and Sons, Chichester, 2004.