



VESC-CONSO

VALUE CREATION IN SMART LIVING ENVIRONMENT FOR SENIOR CITIZEN

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The main goal of the VESC project is to develop and analyze the smart services which have potential to support the aged persons in their daily activities and health care. The living environment will develop by multidiscipline point of view focusing on mobile based ambient intelligent services that exploit sensor network. The technology should not be a means for control but rather to motivate, activate and empower ageing people to take charge of their activities daily living.

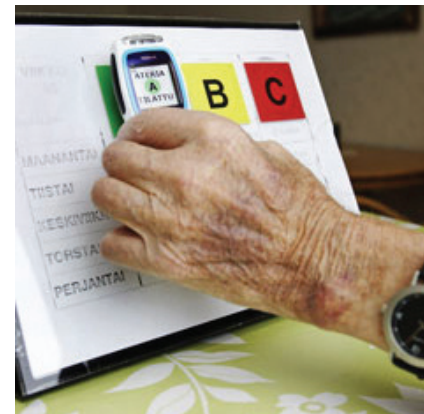
Smart living environment technology will be design with living lab approach by taking account aspect of human-computer interaction, communication, products and services as well as human interaction. The technology's requirements and potential will be studied from technical, medical, societal and architectural point of view. User-centred techniques for generating daily living process will be studied. Beside technological issues, evaluation of value creation networks from non-financial viewpoint is essential.

This means that project will explore and define frameworks for modelling the value creation networks related to the specific technologies and appliances examined

in the project, frameworks for estimating and describing the value created for all actors (i.e. elderly) of the value creation, and frameworks and methods for describing and evaluating the impacts and ethical considerations related to adoption of the technology. These frameworks contribute towards better understanding of the impact of technology onto the processes involved with the IADL and quality of life of the elderly people and other relevant actors.

The VESC-project will create and investigate high-impact living processes for adaptation and compensation. These processes will be based on thorough understanding of the physical and cognitive changes caused by aging, and the needs of the elderly people. A thorough understanding of the needs of the user group and the environment they live in will be achieved through active co-operation of people from different research backgrounds. The processes will focus on: 1) running errands outside home (e.g. grocery shopping), and 2) increasing safety and trouble avoidance (e.g. bone fracture) through preventive and proactive means, and in a case of fall, help without delay.

These processes will be supported by building blocks from technology and architecture that contribute to 1) ontology based software platform that supports the selected daily living process, 2) algorithms for safety detecting conditions, 3) technology-supported spatial solutions for compensating the effects of ageing on vision and visuoconstructive abilities, and 4) touch-based human-computer interaction. The project will produce a prototype of a smart living environment for long-term pilot use, and report on experiences and best practices discovered.



KEY PUBLICATIONS TO DATE:

- Häikiö, J., Wallin, A., Isomursu, M. "Digitally-enhanced services for the elderly" *International Journal of Services Sciences*. Inderscience Publishers. Accepted for publication.
- Isomursu, M., Tähti, M., Väinämö, S. and Kuutti, K. "Experimental Evaluation of Five Methods for Collecting Emotions in Field Settings with Mobile Applications" *International Journal of Human Computer Studies*. Elsevier. Volume 65 (Issue 4), 2007, pp. 404 – 418.
- Isomursu, M., Häikiö, J., Wallin, A., Ailisto, H. "Experiences from a Touch-Based Interaction and Digitally Enhanced Meal-Delivery Service for the Elderly." *Advances in Human-Computer Interaction*. Hindawi Publishing Corporation. 2008.
- Jämsä, T., Vainionpää, A., Vihriälä, E., Korpelainen, R., Leppäluoto, J. Effects of daily physical activity on proximal femur. *Clinical biomechanics award 2004*. *Clin Biomech* 21(1), 2006. pp 1-7.
- Pulli P, Zheng X., Rissanen, M., Antoniac P, Hickey S., Manninen T., Leinonen, E., Martikainen O., Kuroda T., Design and Development of Mobile Services Processes for Senior Citizens. *Proceedings of the 14th International conference on concurrent enterprising*. Lisbon, Portugal 23-25 June, 2008, pp. 293-300.

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