

S. BEDAF, G.J. GELDERBLOM, F. GUICHET, I. IACONO, D. SYRDAL, K. DAUTENHAHN, H. MICHEL, P. MARTI, F. AMIRABDOLAHIAN, L. DE WITTE. **Functionality of service robotics for Aging-in-Place: What to build?** *Gerontechnology* 2012;11(2):361; doi:10.4017/gt.2012.11.02.555.00 **Purpose** Sustaining independent living of seniors is both desired by citizens and a goal for societal policies. Substantial care interventions are provided to European elderly citizens to support-independent living. This involves mainly human care provision. Robotics has great potential to answer the growing demand for support. While developing service robots to meet this need, the selection of its functionality should be increasingly guided by user needs and the societal perspective on care provision to support continued independent living and to optimize the future applicability of the robot. In this research inventories were made of problematic activities associated with independent living and of current care interventions supporting independent living in four European countries. On the basis of this material high potential robot functionality can be identified. **Method** The inventory of problems in daily life that most threaten continued independent living of elderly persons was made on the basis of desk-research. Also, the website of the European Commission¹ was searched for past and ongoing service robot projects aimed at aging-in-place, in which user needs assessments are a recurring theme. For the qualitative inventory of care interventions provided in four European countries a questionnaire was compiled. This questionnaire was then completed for four European countries represented in the consortium (the Netherlands, the UK, France, and Italy). After completing the description, the results were validated by available national expertise to confirm appropriateness. **Results & Discussion** On the basis of the inventories, activities threatening the continued independence of the elderly were prioritised to be solved by a service robot. The underlying analysis for this involved three perspectives: (i) reported problems by the elderly in maintaining their level of independence in daily life; (ii) the range of activities supported by public care provision in the four countries; and (iii) the suitability of robotics technology to solve each of the collected problems. This third perspective includes aspects such as the existence of cheaper alternatives or the need for robot technology to solve the problem at hand. This results in a list of mainly physical activities such as (indoor) mobility and ADL-activities. This study was executed as part of the Accompany Project (EU FP7). The pre-existing Care-O-Bot 3 robot (*Figure 1*) by Fraunhofer² will be adapted for this project to enable the robot to support independently living older persons. Functionalities to be added to the robot will in part be based on the reported results. More generally, it seems clear that it will be challenging with the current generation of robots to develop robots that are actually able to deal with these task adequately. Also, the list of activities contrasts with many of the core functionalities currently developed in many service robot developments.

References

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2. Fraunhofer IPA. Care-O-bot; www.care-o-bot.de/english; retrieved April 5, 2012

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Figure 1. Care-O-bot 3