

SOCIALROBOT: ELDERLY HOME CARE AND SOCIALIZATION

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ABSTRACT

Most elderly people prefer to live independently, for as long as possible, in their preferred environment. Nowadays, the predominant care model for supporting elders living alone at home is based on informal carers' (i.e., relatives, friends, neighbours, etc.) assistance. Considering the demographic changes this model is expected to pose major challenges both in the economy as well as the society.

The SocialRobot solution, funded under the FP7 Industry-Academia Partnerships and Pathways IAPP Marie Curie Programme 2011, is an innovative practice-oriented elderly care robot system that integrates state of the art, standardized and interoperable robotic technologies, ICT-based care services and a virtual social care network². ICT based services address the categories of Care&Wellness, Guidance and Mobility Monitoring. SocialRobot provides daily care assistance to the elder through close virtual social interaction with their informal and formal carers, reducing thus actual care demand.

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² SocialRobot extends the Virtual Social Care Network developed in Co-Living (<http://www.project-coliving.eu/>).

Technological innovation is provided mainly in the areas of i) human-robot interaction (emotion recognition, intelligent dialogue) and behaviour modelling considering related context of daily routine occurrences of the elderly as they aged; ii) new methods for gesture recognition and tracking; and iii) robot-human learning and understanding.

The main SocialRobot's target end-user group are people with light physical or cognitive disabilities who can find pleasure and relief in getting help or stimulation to carry out their daily routine at home. SocialRobot considers the elder as an active collaborative agent able to make personal choices and adapt the care model to his/her lifestyle, personalized needs and capabilities changes over the ageing process.

To ensure usefulness and usability of the SocialRobot system, end-users were involved from the beginning of the project in the collection of user requirements and specification of realistic use case scenarios. Different end-user groups were selected representing a diversity of physical and cognitive abilities. SocialRobot gives emphasis in supporting the elders to maintain their self-esteem in managing their daily routine at home, by addressing the elder's security, privacy, safety and autonomy; i.e. it allows them to decide whether and when they want to have the system on or off.

Two pilots are scheduled to be carried out in the Netherlands and Cyprus. Up to 50 elderly people and their caregivers will use the SocialRobot system over a six month period where it will be investigated up to which point the SocialRobot services improve the self-management of daily routine at home, and how the services can leverage economic opportunities. Initial involvement of the selected end-user groups in system development and prototype testing have shown positive end-user acceptance related to the increase of the elders' motivation and reduction of their hesitations in carrying out their daily routine with the support and company of the SocialRobot.

SocialRobot focuses in the growing high potential elderly care market in Europe and beyond, tackling initially the area of preventive care at an early stage of the ageing process. The system will be introduced early enough in the life of the elderly when the first signs of physical to

cognitive disabilities appear, providing thus initially for simple essential personalized functionality covering daily care needs. This will ensure that the elderly will be given enough time to become acquainted and increase acceptance of more complex robot care functionality introduced gradually to address further ageing capabilities degradation.

SocialRobot is expected to launch the final product onto the market two years after the project end; in 2016.