GrowMeUp - an innovative service robot for ambient assisted living environments

It is feasible with today's technology to build a robot that can interact with older people in a more human way? It is possible that this robot learns to cope with the changing needs and habits of individuals and therefore dynamically adapts its functionality, managing to increase the quality of service of these people continuously over time?

The main objective of the project called "GrowMeUp" is to develop and test an innovative robot (the GrowMu robot), which will support the needs of older people (65+) in their daily life activities. Eight companies and research organizations from five European countries, led by the University of Coimbra (Portugal) will cooperate towards the development of the GrowMeUp system and test it with real users from two European countries.

The main goal of the project is to provide an affordable robot that will be able to learn from older people's routines and habits, therefore enhancing and adapting its functionality to dynamically compensate the constant deterioration of the cognitive ability of individuals, while simultaneously ensuring a consistent service provision and quality of life throughout the aging process. Moreover, cloud-computing technologies will be explored and developed so as to allow different robots to share information between each other, where each unit will be able to capitalize from a collective knowledge base of service information.

One important advantage of the robotic system GrowMeUp is its ability to *grow* over time to cope with elderly specific preferences. More specifically, the system provides an adaptable and intelligent dialogue component that will make the system more attractive for older people to interact with. By correlating dialogues with recognized emotions during the interaction, the system will be capable of holding multiple interactions and building emotional bonds with the older person in the same way that humans do. For example, the system will remember and learn from previous interactions and use this knowledge in future dialogues and decisions.

Furthermore, the involvement of elderly at an early stage of the project will increase the robot's ability to understand and combine different contextual information for older people, such as emotional states, daily behavior routines and preferences. This in turn stimulates and motivates older people to remain active. In the long term, the system will provide a practical, psychological and social benefit that helps the older people to remain active in their home, thus prolonging their independence and improve their quality of life.

To determine the effectiveness of the GrowMeUp system, trials will be performed in two end user organization (the Netherlands and Portugal) with 60 and more elderly in a period of six months.

The research program GrowMeUp co-funded by the European Union under the Framework Programme Horizon 2020. The partners of the research program are:

- University of Coimbra (Portugal)

- University of Geneva (Switzerland)

- Atrium-Orbis: Cure and Care organization (Netherlands)

- University of Cyprus (Cyprus)

- PAL Robotics (Spain)

- ProBayes (France)

- Citard IT Services (Cyprus)

- CARITAS DIOCESANA DE COIMBRA: Care Centre (Portugal)

Further information can be found under: www.growmeup.eu