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RAMCIP

Press Release

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RAMCIP: Robot Research to help people with mild cognitive impairment

Supporting elderly people with Mild Cognitive Impairment is key to helping them lead independent lives for longer. This is a labour-intensive process. RAMCIP (Robotic Assistant for MCI Patients at home) is a three-year research project funded by the European Commission under the HORIZON2020 programme, which starts in January 2015 to tackle this problem. The Information Technologies Institute (Centre for Research and Technology Hellas) is the coordinator of the project RAMCIP, which is going to research and develop a **novel robot** that can provide **proactive** and **discreet** assistance to elderly people with Mild Cognitive Impairment (MCI) in their own home, to support their independent living and quality of life.

Dr. Dimitrios Tzovaras, Coordinator of RAMCIP and Director of the Information Technologies Institute (ITI/CERTH), said: "Ageing is typically associated with physical and cognitive decline, which alter the way an older person moves around the house, manipulates objects and senses their home. These issues make it harder for older persons to execute daily home activities on their own; effects that are made worse by MCI and its evolution into dementia. Assistive robots can play a major role in helping older persons to live independently for longer and with a better quality of life."

Sandra Hirche, Professor in the Department of Electrical Engineering and Information Technology of the Technical University of Munich, (TUM) said: "We still need to solve difficult problems: the robots should be able to assist older persons in a wide variety of activities at their home, discreetly and transparently; the robots should act as effective promoters of the patient's mental health and become solutions that will evolve with the user, matching their needs as they evolve over time."

The RAMCIP vision is of future service robots for assisted living environments that can provide safe, proactive and discreet assistance in the significant aspects of the user's daily life, ranging from food preparation, eating and dressing activities, through to managing the home and keeping it secure. At the same time, the robot should help the user maintain a positive outlooks and also to exercise their cognitive and physical skills. Excitingly, RAMCIP will work towards future robots which help the users to perform exercise as part of their assistive work, thus embedding exercise in their daily behaviour.

The key research strands the RAMCIP consortium will address to make this possible are:

- Cognitive functions based on advanced modelling and monitoring of the user and home, allowing the robot to decide when and how to assist, acting autonomously or in cooperation with the user.
- Adaptive multimodal human-robot communication interfaces, with a strong emphasis on empathic communication and augmented reality displays.
- Advanced, dextrous and safe robotic manipulation capabilities, for the first time applied in service robots for assisted living environments, enabling grasping and manipulation of a wide variety of home objects, as well as

safe physical HRI, introducing assistance activities that involve physical contact, all with special emphasis on safety.

Note: The RAMCIP project is coordinated by the Information Technologies Institute of the Centre of Research and Technology Hellas (Greece), while its consortium brings together researchers from the Technische Universität München (Germany), the Scuola Superiore Sant' Anna (Italy), the Foundation of Research and Technology Hellas (Greece), the Lublin Medical University (Poland), Fundacio ACE (Spain), as well as two SMEs, ACCREA Engineering (Poland) and the SHADOW Robot Company (UK).

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