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RAMCIP: – Developing a service robot to support MCI patients at home

The RAMCIP project, which is supported by the European Commission in the context of the Horizon 2020 Programme, and is aimed to develop a novel robotic assistant to support MCI patients at home, is approaching the completion of the second year of its duration, having at the current stage a series of outcomes to report.

Among these are first versions of the RAMCIP robot hardware components, including the robot's mobile platform with elevation mechanism allowing the robot to reach objects at increased height, the robot's manipulator arm and hand, and the robot's head which encompasses a facial expressions display and a module adding augmented reality capabilities into human-robot interaction. These hardware components have been integrated, leading to the realization of the first version of the RAMCIP robot as a physical device.

Alongside to the above hardware-oriented outcomes, significant progress has been made in the scope of the development of the RAMCIP robot's software components. Currently, advanced methods for robotic perception and cognition towards the establishment of proactive and discreet robot assistive behaviours, methods enabling robotic navigation and dexterous manipulation, as well as methods for advanced human-robot communication have been developed by the RAMCIP Consortium. The initial versions of these software components have been integrated on the first version of the RAMCIP robot.

Following the above, the project is currently at the phase of the preliminary tests of the first version of the RAMCIP robot. This phase started with iterative cycles of lab testing and integration refinements and concludes with preliminary trials with end users, where the first version of the RAMCIP robot is being demonstrated within a subset of the target project use cases. The project's preliminary trials with target end users are currently being held in Lublin, Poland.

This process is anticipated to provide valuable feedback concerning refinements that should be made while the Consortium will be developing the second and final version of the RAMCIP robot, during the third project year. The second version of the RAMCIP robot will be evaluated in two pilot sites, in Lublin, Poland and in Barcelona, Spain, with MCI and early AD patients, while pilot trials will include the robot's operation in real home environments.

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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