

RAMCIP at a glance...

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Upcoming Events

23rd International Conference on Telecommunications (ICT2016), May 16-18 - Thessaloniki, Greece – Workshop: ICT2016 Trends and Challenges of Cyber Physical Systems: Design, Architecture and Applications

RAMCIP will be presented in this year’s ICT conference, during this full-day workshop that is jointly supported by the RADIO, ARGO and RAMCIP H2020 EU funded projects

10th Biennial Conference Barcelona – Pittsburgh, May 25-28, 2016 - Barcelona, Spain

RAMCIP will participate in this year’s Barcelona – Pittsburgh Conference where the project’s overview and several aspects related to the current project’s R&D aims and efforts will be presented.

5th Plenary Meeting of the RAMCIP Project, July 7-8, 2016 - Chania, Greece

The fifth plenary meeting of the RAMCIP project will be held in Chania, Greece on July 7-8, 2016 and will be hosted by Foundation For Research and Technology Hellas (FORTH).

Human Computer Interaction International Conference 2016, July 17 – 22 - Totonto, Canada

RAMCIP will be represented in this year’s HCI conference by FORTH and CERTH, who will present recent results of their R&D efforts within the project.

ISSUE

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1st version of the RAMCIP mobile platform has been developed

RAMCIP partner ACCREA has developed the first version of the RACMIP robot mobile platform and presented it to the rest of the consortium during the project’s 4th plenary meeting.

Right after, the platform was shipped to CERTH to commence experimentation.



Robotic Assistant for MCI Patients at home

Supporting elderly people with Mild Cognitive Impairment (MCI) is key to helping them lead independent lives for longer. This is a labour-intensive process. RAMCIP (R**o**botic A**s**istant for M**C**I P**a**tients at home) is a three-year research project funded by the European Commission under the HORIZON2020 programme, which started in January 2015 to tackle this problem.

RAMCIP is going to research and develop a novel robot that can provide proactive and discreet assistance to elderly people with MCI in their own home, to support their independent living and quality of life.

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.

Nevertheless, major challenges still need to be addressed towards service robots of the future; ones that will be capable of assisting older persons in a wide variety of activities, discreetly and transparently, yet proactively and in tight cooperation with the human, acting at the same time as effective promoters of the patient’s mental health, being solutions that will evolve along with the user, thus capable to match her/his 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 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 cognitive and physical skills. 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.

ASSIST IN...	Food preparation	Eating activities	Dressing activities	Safe, Proactive and Discrete Assistance	
	Socialization	Lower-body treatment activities	Taking medication		
	Managing the home and keeping it safe	Maintaining positive affect	Exercising cognitive and physical skills		
HOW TO ASSIST	High-level cognitive functions			Safe, Proactive and Discrete Assistance	
	Home Environment and Human Activity Modelling and Monitoring	Human Robot Communication			Safe Manipulations Object Grasping/ Manipulation/Handover High object Reaching pHRI
		Multimodal	-Touch screen -Speech -Gestures -AR		
Adaptive					
	Empathic				

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RAMCIP 4th Plenary Meeting – March 3 - 4, 2016, Lublin

The fourth plenary meeting of the RAMCIP project was held in Lublin, Poland, in 3-4 March 2016, hosted at the premises of the Medical University of Lublin (LUM).

During this meeting, the RAMCIP partners presented their advancements, especially in the scope of the project's technical developments, on the algorithms and methods that are planned to be integrated on the first version of the RAMCIP robot.

Moreover, during the meeting, the project partners gave a visit to the LUM apartment that is being prepared to host the project's pilot trials in Lublin.



[Read more...](#)

RAMCIP Project Third Plenary Meeting in Munich

The third plenary meeting of RAMCIP was held in Munich on October 14-15, 2015, at the premises of the TUM (Technische Universitaet Muenchen).

The meeting was an exciting opportunity for consortium members to discuss the project and the future directions of the project and plan next steps and activities. [Read more...](#)



RAMCIP invited speech at the International Symposium on Companion Technologies (ISCT) 2015

The point of view regarding emotion recognition of the RAMCIP project was presented in an invited speech that was given by CERTH in the [International Symposium on Companion Technologies 2015](#). The symposium was held in Ulm, Germany, on 23-25 September 2015. ISCT provided the consortium with the great opportunity to introduce present aspects of the

ISCT 2015

project and possible solutions for emotion recognition in service robots for assisted living environments. Moreover, it was given the chance to discuss them with scientific personnel specializing in this field.

RAMCIP at the IEEE Conference on Decision and Control

The Technische Universitaet Muenchen (TUM) has participated in the [54th IEEE Conference on Decision and Control](#) which was held in Osaka, Japan on December 15-18, 2015, presenting the paper: "Spline Deformation of Locally Optimal Trajectories: Feasibility and Upper Bound on Control Inputs" authored and presented by Alexander Pekarovskiy. The paper proposes a novel approach for robot cruising, where optimal trajectories are created offline through numerical direct optimal control methods. Then,

the trajectories are deformed online with a spline deformation approach, providing minimum acceleration deviation between optimal and deformed trajectories and considerably reducing the computational complexity of the algorithm during run time. Moreover, the method provides a feasibility check for the deformed trajectory, the controller tracking error and the resulting torque. This work guarantees correct task execution in the presence of unmodeled dynamics.

RAMCIP at the MindCare 2015

The Information Technologies Institute of Centre for Research & Technology Hellas (CERTH/ITI) has participated in the [5th EAI International Symposium on Pervasive Computing Paradigms for Mental Health](#) which was held in Milan, Italy on September 24-25, 2015, presenting the paper: "RAMCIP: Towards a Robotic Assistant to



Support Elderly with Mild Cognitive Impairments at home" authored by I. Kostavelis, D. Giakoumis, S. Malasiotis and D. Tzovaras.

RAMCIP publication in "Computational and Mathematical Methods in Medicine Journal"

A scientific paper related to CERTH's Virtual User Modelling research has been published in the Computational and mathematical Methods in Medicine journal (Hindawi): *Segkouli, S., Paliokas, I., Tzovaras, D., Tsakiris, T., Tsolaki M. & Karagiannidis, C., "Novel Virtual User Models of Mild Cognitive Impairment for Simulating Dementia."*

This issue's highlight

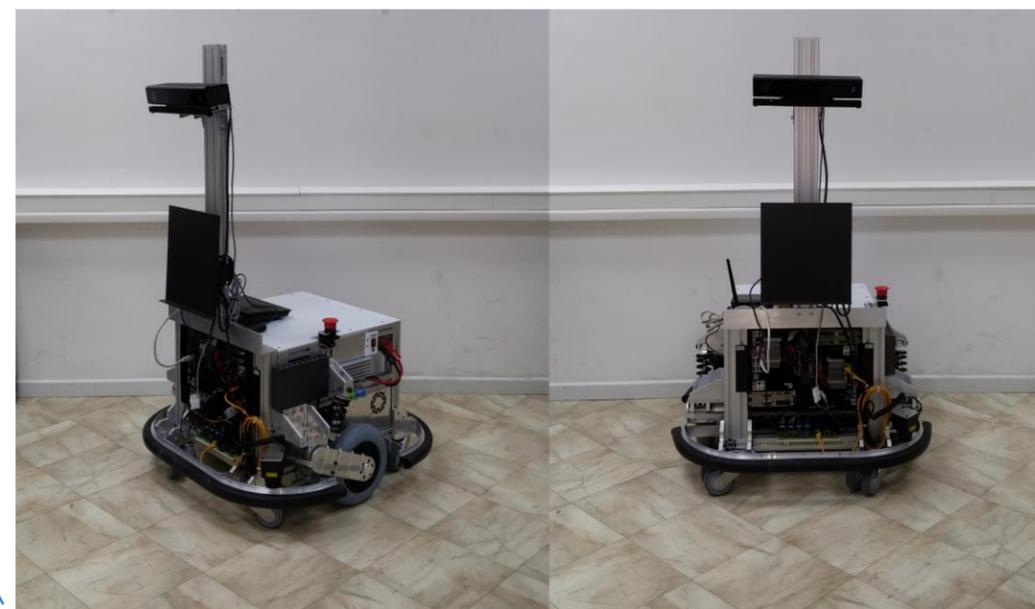
First version of the RAMCIP mobile platform, developed by ACCREA and is shipped to CERTH

Based on the survey that was conducted among patients suffering from MCI, early stages of AD and professionals dealing with everyday problems of the patients', RAMCIP partners collected and organized the users' needs and expectations.

This collection worked as a conduit for designing the exterior of the RAMCIP's robot which subsequently designated the formulation of technical specifications that need to be taken into account when designing the hardware components, so as to meet the performance requirements. The study regarding the system H/W components, their properties and dependencies is completed as well as their harmonization as an overall system. Such advances led to the development of the first version of the

RAMCIP mobile platform by ACCREA, which was [demonstrated](#) to the RAMCIP consortium in the 4th plenary meeting. Once the meeting was concluded the mobile platform was shipped to CERTH to initiate software integration phase.

Currently, CERTH works towards adaptation and compliance of the already developed software modules with respect to the H/W as well as among the S/W components. Priority has been given to those modules that are essential in order to examine the use-cases targeted for the first version of the robot. As a result, emphasis has been given to the robot localization component, environment modeling and understanding as well as to object recognition and tracking.



RAMCIP designs a trial protocol for HRI of patients with Alzheimer disease

LUM has developed, in collaboration with Fundació ACE and the technical consortium partners, the pilot trial protocol that will serve to the collection of data regarding human robot interaction of patients with Alzheimer Disease in early stages.

RAMCIP at the XIII International conference on "Medical Robots 2015"

RAMCIP's robot presented as one suitable for people with MCI and early AD developed in the XIII Conference of Medical Robots, which was held in Zabrze on December 2015.

RAMCIP at the Future Challenges Workshop

RAMCIP participated in the Future Challenges Workshop that was held on 11-13/3/2015 in London, by members of two project partners, SHADOW and SSSA.

RAMCIP at the 9th IEEE Conference on Decision and Control

TUM gave a presentation of a RAMCIP related module in the 54th CDC conference, in Osaka, on December 15-18, 2015.