

RAMCIP at a glance...

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Upcoming Events

**3<sup>rd</sup> Plenary Meeting of the RAMCIP Project, October 14-15, 2015 - Munich, Germany**

The third plenary meeting of the RAMCIP project will be held in Munich, Germany on October 14-15, 2015 and will be hosted by Technische Universitaet Muenchen.

**54th IEEE Conference on Decision and Control (CDC), December 15-18, 2015 - Osaka, Japan**

TUM will represent RAMCIP in the 54th IEEE Conference on Decision and Control in, by presenting the paper: Pekarovskiy, A., Nierhoff, T., Hirche, S., & Buss, M., "Spline Deformation of Locally Optimal Trajectories : Feasibility and Upper Bound on Control Inputs."

**International Symposium on Companion Technologies (ISCT 2015), September 23-25, 2015 – Ulm, Germany**

The RAMCIP project will participate in this year's International Symposium on Companion Technologies, through the invited speech: "Emotion recognition in service robots for Assisted Living Environments – the RAMCIP project approach".

**RosCon Conference, October 3-4, 2015 - Hamburg, Germany**

ROSCon 2015 is a chance for ROS developers of all levels, beginner to expert, to spend an extraordinary two days learning from and networking with the ROS community. Shadow will present the new open-source build toolset: <https://github.com/shadow-robot/sr-build-tools/>

ISSUE

01

SEPTEMBER  
2015

1<sup>st</sup> press release of the RAMCIP project

The 1<sup>st</sup> press release of the RAMCIP project is available and online in the project's website, under the title:

*"RAMCIP project: Robot Research to help people with mild cognitive impairment"*

The 1<sup>st</sup> press release of the project has been featured in a series of media throughout Europe, among others in Greece, Germany, Spain, Poland Italy and the UK, as well as on the HORIZON 2020 news section of the European Commission.

The visitors of the RAMCIP website can find at its pages, apart from the different versions of the project's first press release, also further dissemination material, including the project's leaflet, public reference presentation, poster, and others.



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 -AR		
Adaptive					
	Empathic				

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This project has received funding from the European Union's Horizon 2020 Framework Programme for Research and Innovation under grant agreement no 643433





## RAMCIP 2nd Plenary Meeting – April 27-28, 2015, Barcelona

The second plenary meeting of the RAMCIP project took place, in Barcelona, Spain on April 27-28, 2015.

The main objective of the meeting was to discuss the progress of the user needs & requirements analysis and technical specifications activities of the project, while focusing on specific issues related to our target users population.

Moreover, during the meeting, the partners discussed about the current work progress in respect of all active tasks, while the action plan until the next project meeting was agreed among the partners.



[Read more...](#)

## RAMCIP Project Kick-Off Meeting in Thessaloniki

The kick-off meeting of RAMCIP was held in Thessaloniki on January 29-30, 2015, at the premises of the project coordinator, CERTH (Information Technologies Institute).

The meeting was an exciting opportunity for consortium members to discuss the project and its aims from their perspectives, setting



the grounds for the successful project implementation.

## RAMCIP invited speech at the RoboBusinessEU 2015 Conference and Expo

The vision and objectives of the RAMCIP project were presented in an invited speech that was given by CERTH in the RoboBusinessEU 2015 Conference and Expo.

The conference was held in Milan, Italy, on 29-30 April 2015, as a part of DISRUPTIVE WEEK MILAN 2015. RoboBusiness EU provided the consortium



with a great opportunity to present the project and discuss it with key players of the European robotic sector, both from the scientific and business domains, within a session dedicated to robotic solutions for healthcare.

## RAMCIP participates in the RRI – ICT forum

The RAMCIP project was represented at the [Responsible Research Innovation - ICT 2015 workshop](#), which was held in Brussels, on the 8-9th of July 2015, by Dr. Antoni Gelonch (Fundacio ACE), who has been nominated as the "RRI reference person" of the RAMCIP project.

The event, organized by the [RRI-ICT Forum Project](#), kicked off the launch of the RRI-SSH (RRI – Social Sciences and Humanities) approach among ICT-related H2020 projects, giving life to the ICT-RRI-SSH ecosystem, linking its

parties, and kick-starting discussions on how to enact a responsible approach in research & innovation.

The RAMCIP project follows a User Centred Design approach, placing the target end users in the centre of its Research and Development efforts, maintaining a clear focus on the needs and expectations of RAMCIP robot end users throughout the project's duration, to ensure that the final result will be in line with their needs.



## RAMCIP at the RSS 2015

The Information Technologies Institute of Centre for Research & Technology Hellas (CERTH/ITI) has participated in the [Human-Robot Hand-Over Workshop](#) at the [Robotics: Science and Systems Conference](#) which was held in Rome, Italy on July 13-17, 2015, presenting the paper: "Human-inspired object load transfer in hand-over tasks" authored by Efi Psomopoulou and Zoe Doulgeri and presented by Efi Psomopoulou.

The paper proposes a human-robot object hand-over strategy for cases where the robotic



participant is the giver. It is receiver initiated and it involves a rich haptic human-inspired interaction between the participants. In this strategy, the giver is a stably grasping robotic hand that follows closely the receiver's lead and ensures haptically that the receiver has stably grasped the object before opening its grip. Therefore, the strategy can be applied to robots that are intended to assist older adults and people with motor impairments.

## RAMCIP publication in "Autonomous Robots"

A scientific paper related to TUM's initial efforts in RAMCIP has been accepted for publication in the Autonomous Robots journal (Springer): Nierhoff, T., Hirche, S., & Nakamura, Y., "Spatial adaption of robot trajectories based on laplacian trajectory editing."

## This issue's highlight User needs and requirements analysis workshops and surveys in Poland (Lublin) and Spain (Barcelona)

So far little is known about the requirements and needs of the Mild Cognitive Impairment (MCI) and Alzheimer's-Diseased (AD) patients in the initial stages, in the scope of robotic assistance interaction in the home environment (in general and including particular tasks foreseen in the RAMCIP project).

In the present research we focused on identifying the requirements and needs of the MCI/AD patients using mixed methods, workshops and surveys included. The data was gathered using the same protocols in two locations: at the Medical University of Lublin, Poland and at Fundació ACE Barcelona Alzheimer Treatment & Research Center, Spain, by LUM and ACE, the project partners responsible for analysis of the needs and requirements of the RAMCIP target end users.

These first project workshops and surveys enabled the project consortium to obtain the view of the main target end users of the RAMCIP robot, namely MCI and early AD patients, as well as their caregivers and related medical personnel, on the functionalities that should be implemented by the foreseen robotic assistant, safety, usability and acceptability issues.

The obtained results from moderated group discussions revealed differences in terms of professional and cultural backgrounds which were

taken into account while preparing the questionnaires. Ideas gained during the workshops were analyzed and influenced the determination of user requirements and implementation of the robotic assistant. A special session of the workshops, organized by ACCREA and LUM, was dedicated to safety, where we discussed "Objects limits and foreseeable hazards for RAMCIP robot"; a preliminary safety analysis for the RAMCIP robot was gained as outcome.

The questionnaire-based surveys involved target end users of RAMCIP. The results of the surveys' aimed to advance our understanding of the needs and requirements of the RAMCIP target end users, focusing directly on their own perspective over the foreseen robotic assistant.

The overall obtained information drives our efforts to design a robotic assistance that is acceptable by this group of patients and useful in specific tasks related to the personal care and leisure activities. Specifically, on the basis of the overall data collected through the workshops and surveys, the stablished thorough analysis of the RAMCIP user needs and requirements serves as the basis for the RAMCIP project to define the target use cases for the foreseen robot, as well as the robot's detailed technical specifications.



## RAMCIP at the EURobotics Forum 2015

RAMCIP was represented in the [EURobotics Forum 2015](#) that was held on 11-13/3/2015 in Vienna, by members of two project partners, SHADOW and CERTH; this was an exciting opportunity for RAMCIP to present its vision to the Robotics community

## RAMCIP at the 25<sup>th</sup> annual conference of Alzheimer Europe

An overview of the RAMCIP project, its vision and objectives was presented by Fundacio ACE at the 25th Annual Conference of Alzheimer Europe, which was held in Ljubljana on May 2015.

## RAMCIP at the 4<sup>th</sup> Int'l Symposium on Pervasive Computing Paradigms for Mental Health (MindCare)

RAMCIP will participate in this year's "MindCare" Symposium (September 24-25, 2015 – Milan, Italy), presenting the paper: "RAMCIP: Towards a Robotic Assistant to Support Elderly with Mild Cognitive Impairments at home".

## RAMCIP at the 8<sup>th</sup> Clinical Trials of Alzheimer Disease congress

Fundacio ACE will give a poster presentation of RAMCIP in the 8<sup>th</sup> CTAD congress, in Barcelona, on November 5-7, 2015.