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Title	The perceptions of people with dementia on robot companions and their potential to reduce loneliness and isolation
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Publication Date	2016-06-22
Publication Information	Casey, D., Kouroupetroglou, C., Koumpis, A. and Murphy, K. (2015). The perceptions of people with dementia on robot companions and their potential to reduce loneliness and isolation. Paper presented at the International Conference on Social Robotics: Improving the quality of life in the elderly using robotic assistive technology: benefits, limitations, and challenges, Paris.
Link to publisher's version	<a href="http://doi.org/10.13025/S8PP43">http://doi.org/10.13025/S8PP43</a>
Item record	<a href="http://hdl.handle.net/10379/5895">http://hdl.handle.net/10379/5895</a>
DOI	<a href="http://dx.doi.org/doi:10.13025/S8PP43">http://dx.doi.org/doi:10.13025/S8PP43</a>

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Conference Oral Presentation: 'Perceptions of people with dementia and carers on robot companions'. Presentation Slides. No Proceedings.

Citation: Casey, D., Kouroupetroglou, C., Koumpis, A. and Murphy, K. (2015). The perceptions of people with dementia on robot companions and their potential to reduce loneliness and isolation. In: International Conference on Social Robotics: Improving the quality of life in the elderly using robotic assistive technology: benefits, limitations, and challenges, Paris, 31st October .

Acknowledgement: This project has received funding from the European Union Horizons 2020 – the Framework Programme for Research and Innovation (2014-2020) under grant agreement 643808 Project MARIO 'Managing active and healthy aging with use of caring service robots.'



# MARIO PROJECT

**M**anaging **A**ctive And Healthy Aging With Use Of **C**aring Service **R**obots.

- Many people with dementia live meaningful lives and retain many abilities if a supportive psycho-social environment exists. However people with dementia report that dementia affects their confidence to engage in social activities, leaving them lonely and isolated. The impact therefore is life limiting and places significant burden on individuals and societal support systems.

# The Partners

Name	Short Name	Country
Stockport Metropolitan Borough Council	STOCK	United Kingdom
	RUR	United Kingdom
R.U. Robots Limited		
Universitat PASSAU	PASSAU	Germany
National University of Ireland, Galway	NUIG	Ireland
ROBOSOFT Services Robots	ROBO	France
	ORTELIO	United Kingdom
Ortelio Ltd		
Fondzione Casa Sollievo Della Sofferenza	IRCCS	Italy
Conisglio Nazionale Delle Ricerche	CNR	Italy
R2M Solution SRL	R2M	Italy
Caretta-Net	CNET	Greece



# MARIO: Managing active and healthy aging with use of caring service robots

- Aims to address the difficult challenges of loneliness, isolation and dementia in older persons through companion/service robots.
- 10 partners from 6 Countries- France, Italy, Greece, Germany, Uk, Ireland
- 3 pilot sites for the introduction of MARIO robot –
  - Italy (Acute Hospital) , UK (Community) & Ireland (Nursing Homes)
- Value of Grant: €4million
- Duration 3 years February 2015- February 2018

# The Robot - MARIO Kompai

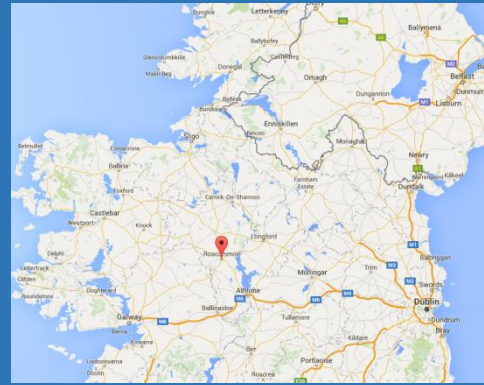


<http://www.robosoft.com/news/kompai-at-the-2nd-wic-award/index.html>

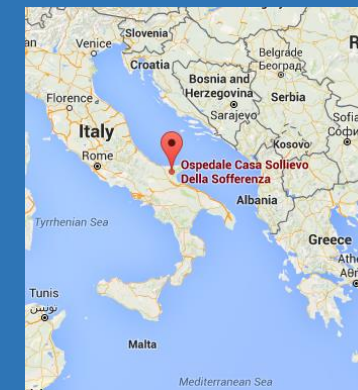
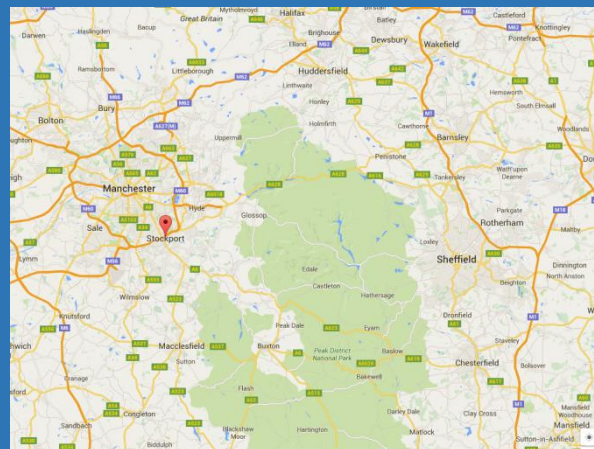
To find out more go to <http://www.mario-project.eu/portal/>



# The Pilot Sites



The first pilots will be undertaken in two long stay care residential settings in the West of Ireland, the second in community settings in Stockport, UK, and the third in the acute hospital setting in Casa Sollievo Della Sofferenza Hospital, Southern Italy.





# Methodology

- Three focus group interviews with people with mild/moderate dementia.
- 2 Focus groups with health care staff in nursing homes
- Qualitative content analysis was used to analyze the data
- Criteria identified by Lincoln and Guba (1985) was used to ensure and maintain rigor
- Ethical approval obtained

# Perceptions of people with dementia and carers on robot companions (MARIO)

Professor Dymphna Casey & Kathy Murphy  
National University of Ireland Galway



# Demographics of People with dementia

- Nursing Home A (n=8)
  - Female (n=5)    Male (n=3)    Majority > 80 Year (n=7)
- Nursing Home B (n=5)
  - Male (n= 5)    Majority >80 yrs (n=4)
- Community (n=9)
  - Male (n=5)    Female (n=4)    All > 65 yrs

## **THINK POINT!**

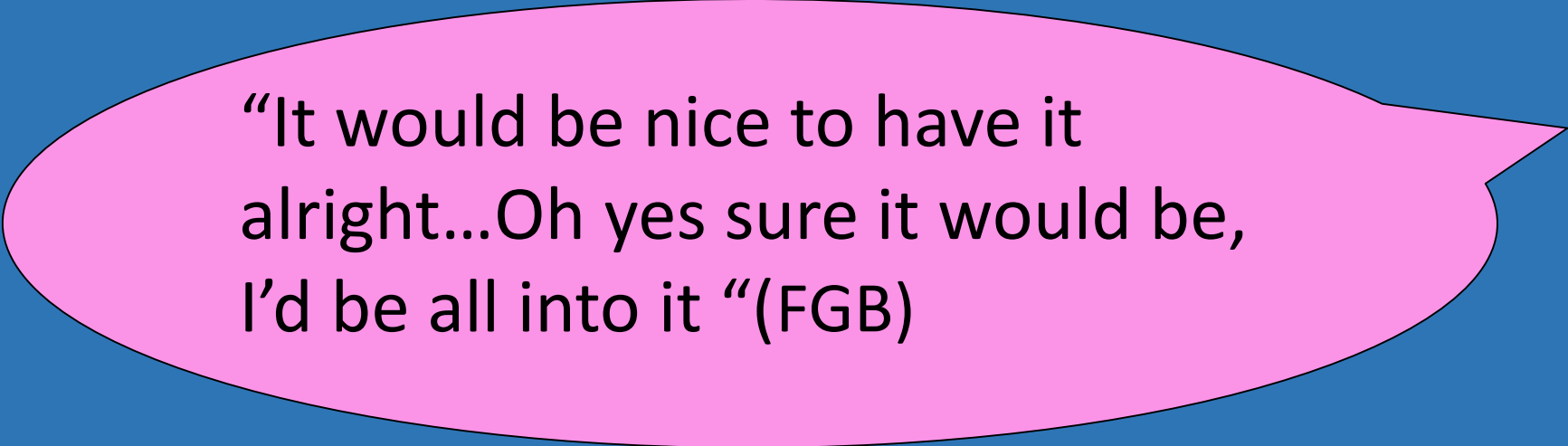
What do you think people with dementia

1. thought about having MARIO as a companion?

2.wanted MARIO to do for them?

# Findings

- The majority of participants were receptive to the idea of having the robot companion Mario Kompai



“It would be nice to have it alright...Oh yes sure it would be, I’d be all into it “(FGB)

# What I would like Mario Kompai to do for me

- Recognise peoples individual voices and remind me of daily and weekly events;
- Store my phone numbers and important events like birthdays and anniversaries;
- Store and play on demand my favourite music and movies;
- Remind me to take my medications, and to eat and drink;
- Contact medical help if I fall or am unwell;
- Know the lay out of my home so he can direct me e.g. to the bathroom;



- Locate my keys or handbag
- Know my favourite book and read it to me
- Have interactive games that I would enjoy and would help me retain my abilities for longer
- Recognise faces so he could prompt me as to who people were.
- Interact with and regulate other technologies in my home

*“Maybe putting on a television... You want the channel or something. This yoke is, how do I get the channel, you know, it’s not easy...but if you had something that would say ok just give me a tip again about how to get BBC6 if there was such a thing...Because some of these remotes are so complicated, you’d want to be in the full of your health to follow them, I have to say”.*

*(FGC)*

- Motivate me and deliver words of encouragement when I'm less inclined to do something e.g. 'lets do it" "Don't give up" " come on have a go" .
- Remind me what clothes to put on when I get muddled e.g. put your underwear on first Mary, ...now put on your dress"
- Play soothing music to me at night and to gently wake me in the morning
- At the start of the day tell me the date and time and year and a list of the day's activities and events planned for that day.
- Remind me that I had visitors earlier in the day and who they were as sometimes I forget and think no one has visited?

# Appearance

- To speak more like a human maybe have the voice of someone I know
- But others thought that a familiar voice would be confusing
- The voice needs to be clear, he needs to speak slowly and a bit loudly so we can hear
- To have more softer or warm features- 'he is like a fridge'
- Could he have some hair? Can we put a shirt of some clothes on him to make him a bit more friendly looking?
- Could he have a bright warmer colour
- Can he appreciate humour and 'have a laugh' with us.

# Concerns

- He needs to be robust, what if we accidentally knock into him or maybe we could even fall over him?
- Where will he hold all his information, on a 'chip in his head? 'Who can access my information that he has?
- Will 'my secretes' be safe with MARIO?
- Who will have access to the information that I give to MARIO and he has in his memory?
- Will he share private conversations that I have with one family member with another family member? Will he tell my business to someone else?

# Staying Connected

- Most participants recognized the potential of Mario Kompai to keep them connected to family and friends
- Wanted him to have skype and thereby connect them to their friends and family

*“...I could talk to my girls on skype” (FGA)*

- Wanted him to have access to their life history/life story, their interests and hobbies and could use this information to foster conversations and reminisce about events that they could remember more easily.

- It is clear that that Mario Kompai has to really get to know the person and their daily routines

“...{Its} building in the person’s routine so it’s like you’re getting up, you’ve got to go to the toilet, you’ve got to brush your teeth, you’re going to have your breakfast now so it’s the routines as well as the memories but the routines I think are important...”(FGC)



# Demographics of health professionals

- Nursing Home A (n=23)
  - Female (n=20)    Male (n=2)    1 did not answer
  - Majority (n= 17 ) >40 yrs.
  - 13 RGN's    6 HCA    2 Activity Cord.    1 Physio.    1 OT.
- Nursing Home B (n=26)
  - Male (n=4 )    Female (n=21 )    1 did not answer
  - Majority (n=18) >40 yrs.
  - 15 RGN's    7 HCA    1 Activity Cord.    1 Physio.    2 OT.

## **THINK POINT!**

What do you think Health professionals in Nursing homes

1. thought about having MARIO as a companion for their clients?

2. wanted MARIO to do for them?

# What we would like in Mario Kompai

- **All welcomed the idea of MARIO and were keen to meet him in person!**
- Have MARIO undertake some of the Comprehensive Geriatric Assessment,
- Have a falls detection sensor; Sensors to pick up the residents physiological status;
- Voice activation and face recognition
- Ability to skype ; take photos of the resident to share with family members
- Record visitors names and details when they visit?
- Orientate residents to time place and date ;
- Must have the persons life story and be individualised to each person.
- Be able to read out local parish newsletters, show local football games on his TV screen; the horse racing etc.
- Identify someone in distress in terms of their emotional wellbeing

- Could he smile, express some emotion, appear to make eye contact
- Needs to speak like a human not a computer or a 'sat nav'
- Maybe give him a wig and put a shirt on him, make him more friendly

# Concerns

- Space
- Privacy and confidentiality of the information stored in MARIO.
  - Who owns that information? How will it be stored ? Will the information be backed up and will it be safe?
- Needs to be robust as they could hit him with their stick on the head or the body.
- Who will be responsible for MARIO when he is in the home, what if his system crashes while he is here, how does he reboot?
- Will MARIO replace the need for a nurse ?

# What Next in the project?

- **Translating the wish list into reality**
- Developing the functionalities and architecture for Mario Kompai



# Stay up-to-date on the MARIO Project at:

- <https://www.facebook.com/mario.project.eu>
- <https://plus.google.com/116012490277146118083/posts>
- <http://www.mario-project.eu/portal/>
- [https://twitter.com/mario\\_project](https://twitter.com/mario_project)
- <https://www.youtube.com/channel/UCdxaxbf9BLZjl698HCuTyBQ>