



EU-Japan coordinated research project “CARESSES” Fact Sheet  
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**Full name:** Culture-Aware Robots and Environmental Sensor Systems for Elderly Support (CARESSES)

**Duration and starting date:** 37 months from 1<sup>st</sup> January 2017

**Funding:**

- 2,084,248.75 EUR from the EU Commission: this project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 737858;
- 60,000,000 JPY from the Ministry of Internal Affairs and Communication of Japan.

**Partners:**

CARESSES is a multidisciplinary project involving researchers from different European countries and Japan, with backgrounds in Robotics, Human-Robot Interaction, Artificial Intelligence, Smart Home Automation, Transcultural Nursing, Culturally Competent Healthcare, Social Psychology, Human-Behaviour Analysis, Evaluation of Health- and Wellbeing-related Technology, along with a world leading Robotics Company, and a Network of Residential and Nursing Care Homes.

**Joint/EU Coordinator:**

- University of Genova, Italy (**Robotics, Artificial Intelligence**).  
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**Other EU Partners:**

- Orebro University, Sweden (**Robotics, Artificial Intelligence**).  
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- University of Bedfordshire, UK (**Evaluation of Health- and Wellbeing-related technology**)  
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- Softbank Robotics Europe, France (**Robotics company**).  
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- Advinia Healthcare Limited, UK (**Network of Residential and Nursing care homes**)  
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**Japan Coordinator:**

- Japan Advanced Institute of Science and Technology (**Human-Robot Interaction, Smart Home Automation**).  
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- Chubu University (**Human-Robot Interaction, Human Behaviour Analysis**)  
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## Objective:

CARESSES will design **culturally aware** and **culturally competent** elder care robots. These robots will be able to **adapt how they behave and speak to the culture, customs and manners** of the person they assist. CARESSES' innovative approach will translate into care robots that are designed to be **sensitive to the culture-specific needs and preferences of elderly clients**, while offering them a safe, reliable and intuitive system, specifically designed to support active and healthy ageing and reduce caregiver burden.

## Innovation/breakthrough:

With a view to dramatically improving the acceptance of elder care robots, as well as their marketability, CARESSES will develop and test the first ever culturally aware and competent robot. Indeed, no previous research effort or commercial enterprise has explored this possibility.

## Robot platform:

CARESSES' culturally aware solution will expand the capabilities of the Pepper robot, which is designed and marketed by Softbank Robotics, a partner of the project.

## Culturally aware robot capabilities will include:

- communicating through speech and gestures;
- moving independently;
- assisting the person in performing everyday tasks (e.g. helping with to-do lists and keeping track of bills, suggesting menu plans);
- providing health-related assistance (e.g. reminding the person to take her medication);
- providing easy access to technology (e.g. internet, video calls, smart appliances for home automation);
- providing entertainment. (e.g. reading aloud, playing music and games)

## Experimental phase:

In the last year of the project, CARESSES' culturally aware robots will be tested at:

- Advinia Healthcare care homes (UK; project partner);
- the HISUISUI care home (Japan);
- the iHouse facility at JAIST (Japan; project partner), a duplex apartment that is fully equipped with sensors and smart appliances for home automation.

## Motivation/Rationale:

Ageing populations across the world are placing health systems under increasing pressure. Elderly care robots can be a means to relieve that pressure in hospitals and care homes, as well as a way to improve care delivery at home and promote independent living for the elderly. Care robots that are culturally aware and competent are likely to meet with greater acceptance from both the elderly and their caregivers.

For reference:

- Markets & Market (*Medical Robots Market by Product (...) & Application (...) - Global Forecasts to 2020*);
- Robotics Business Review (*Healthcare Robotics 2015-2020:Trends, Opportunities & Challenges*);
- International Federation of Robotics (<http://www.ifr.org/service-robots/statistics/>)

**Additional Information:** For additional information, please **contact Prof. Antonio Sgorbissa**, antonio.sgorbissa@unige.it, tel.: +39 3204218938.