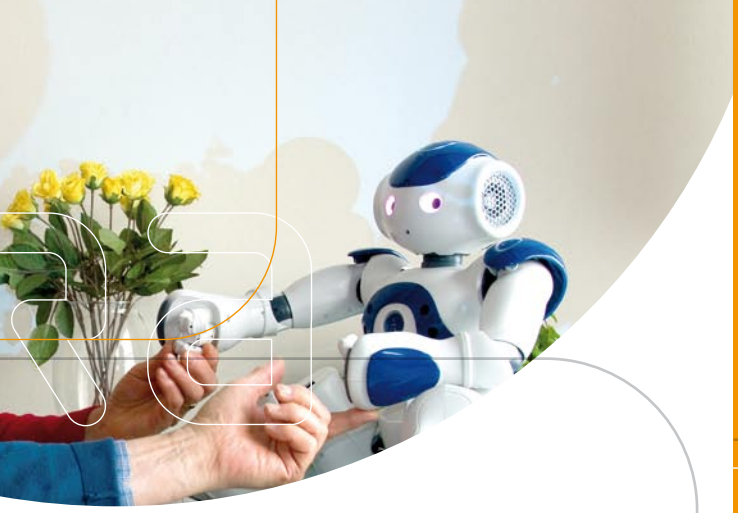
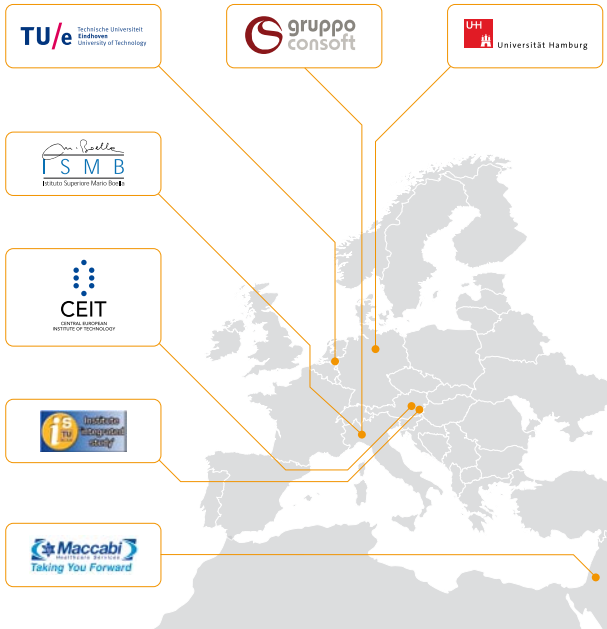


PARTNERS

- Technische Universiteit Eindhoven (TU/e)
- Instituto Superiore Mario Boella Sulle Tecnologie Dell'Informazione e delle Telecomunicazioni (ISMB)
- Maccabi Healthcare Services (Maccabi)
- Technische Universität Wien (TUW)
- CEIT RALTEC gemeinnützige GmbH (RALTEC)
- Consoft Sistemi S.P.A. (Consoft)
- Universität Hamburg (UH)



The KSERA project is co-financed by the European Commission under the 7th Framework Programme (FP7) for Research and Technological Development.

K-SERA FACTS & FIGURES

- 7 partners.
- 353 person-months of work.
- Start date 1 February, 2010.
- 3 year duration.
- Overall budget of €3.9 M.
- EC co-financing of €2.9 M.

For more information visit our website:
www.ksera-project.eu

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K-SERA

K-SERA

KNOWLEDGEABLE SERVICE ROBOTS FOR AGING

ABOUT K·SERA

KSERA investigates the integration of assistive home technology and service robotics to support older users in a domestic environment. The KSERA system helps older people, especially those with COPD, with daily activities and care needs and provides the means for effective self-management.

The main aim is to design a pleasant, easy-to-use and proactive socially assistive robot (SAR) that uses context information obtained from sensors in the older person's home to provide useful information and timely support at the right place.

KSERA addresses socio-economical needs:

- **Independent living:**
  - Desirable: older people want to live as long as possible in their own homes and enjoy good quality of life (QoL).
  - Necessity: the support ratio: i.e., the number of people of working ages per person of 65 and older, decreases from 1:5 in 2000 to 1:2 in 2050.

- **Chronic Obstructive Pulmonary Disease - COPD:**
  - 3rd leading cause of death in the world in 2030.
  - Annual EU healthcare cost of €7.6 billion for outpatient care and inpatient care.
  - Age-related illnesses cause a decline of the patients' capabilities, including mobility limitations and self-care restrictions.

K·SERA OBJECTIVES

The overall objective is to obtain a successful, effective interaction between the human and the socially assistive robot to guarantee acceptance and adoption of service robots and assistive home technology.

More specifically the KSERA objectives are:

- **Robot mobile behaviour** i.e. machine navigation and following a target person through a variable and domestic environment.
- **Ubiquitous monitoring** of physiological, behavioural and environmental data through direct measurements and interaction with wearable and household sensors to detect normal and anomalous daily living patterns.
- **Human-robot interaction** including shared attention, tracking user intentions, affective technology, and communication and entertainment via adaptable multimodal interfaces.

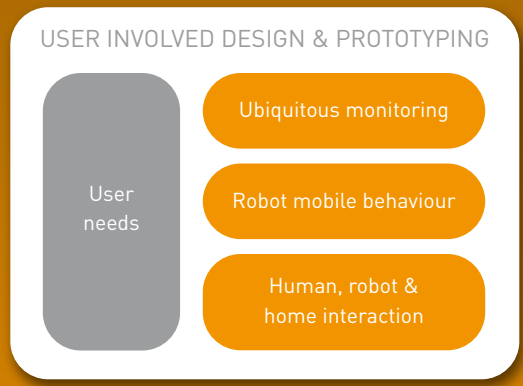
APPROACH

- Multidisciplinary team: medical & care professionals, expertise of robotics, sensors, IT, assistive home technology, environmental variables, user-system interaction, cognition, psychology and ethics.
- Real user scenarios and participative design drive the research.
- In an iterative design, two prototypes will be developed and validated in a real end-user environment based on measures of safety, user acceptance, care efficiency and QoL.

APPLICATIONS

- A mobile assistant to support and interact with an older person.
- Delivering useful communication (video, internet) to an older person.
- Advise an older person or caregivers of anomalous or dangerous situations on the basis of health and behavioural monitoring.

Integration, prototyping and validation. Evaluation with real users in a domestic environment.



EXPECTED IMPACT

- Increasing the acceptance and adoption of service robots in domestic environments.
- More independence and a better QoL for older people particularly those with COPD.
- Decreasing burdens on family and caregivers.
- Decreasing healthcare costs.