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A virtual coach for smart ageing

The intelligent assistant is designed to help seniors remain active in their own living environment. Cooperation in European-Japanese lighthouse project e-VITA.

Together with 11 European and 11 Japanese partners, the University of Siegen is developing a virtual coach for smart aging at home. The e-VITA project is creating an intelligent assistant that older people can use individually at home - tailored to their own living environment and personal wishes and ideas. "Our goal is to empower older people to remain independent and active, manage their daily activities and improve their well-being," explains Professor Dr. Marc Hassenzahl, Dean of Faculty III at the University of Siegen. The focus areas in the development of the virtual coach are mobility, social interaction, leisure, cognition, physical activity, mood and spirituality.

The task of the Siegen researchers will be to design user-friendly language interaction and to shape the assistant in so-called practice labs together with the users - in other words, a trustworthy assistant that is specifically geared to the older target group. To this end, the university would like to cooperate with local authorities and social associations in Siegen-Wittgenstein, among others, so that the system can also be linked to their social services and activities. The coach provides natural language interaction. This has two goals: First, it allows the person and coach to converse and understand each other better. Secondly, the coach should create trust and at the same time provide information through the conversations in a privacy-compliant manner. Question-answer functions from knowledge graphs such as Wikipedia and data, collected and integrated, from various sensors are used for this purpose. For example, the system analyses data from smart household appliances and can also connect health-related devices such as blood pressure monitors or fitness wristbands if required. Based on all this information, the coach will provide personalized recommendations for the elderly in the different languages of the participating countries. For example, the coach could remind people to exercise regularly or go for a walk, read from the Bible or recommend cultural events - as needed. It could also help people chat more easily with family or friends, eat healthier, or strengthen social bonds within communities and neighbourhoods.

The specific functions and tasks the coach is to assume and the form it is to take will be determined together with the older people in the course of the project. "It is crucial for the project, that the users accept the technologies. We can only achieve this if we make the users themselves the focus of the design and development," says Elisa Irlandese, project officer at the European Commission. Dr. Rainer Wieching agrees. He is the overall project manager of e-VITA and an expert in the field of active aging, healthy living and social robotics.

Should the virtual coach remain discreetly in the background or always be present? Which functions make sense, which are annoying or even a hindrance? And what about data protection

- after all, not everyone wants to reveal all their data. "We design for real life and for real people, not for the lab," emphasizes Dr. Matthias Laschke. "The technologies we develop in the project should not only be practical and pragmatic, but also meet individual needs - for example, safety and autonomy - and be fun," he explains.

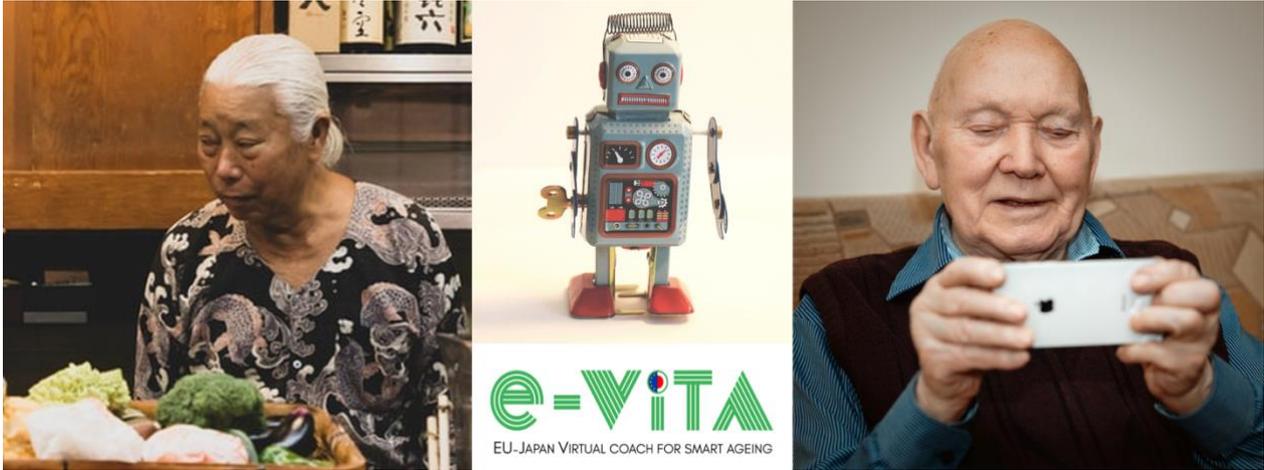
The researchers will later provide a support system for the older users to learn and use the virtual coaching system and independently manage their data. The coach will be tested and evaluated in France, Germany, Italy and Japan. In the medium term, it should be possible to use the service throughout Europe and Japan, which will be underpinned by an international application study and, if necessary, enable further rounds of funding and studies. "South Westphalia is a rural region with a declining number of family doctors and an increasing number of elderly people. This demographic and structural development applies to many rural regions in the EU and also in Japan," says Prof. Dr. Volker Wulf, explaining the cooperation and the benefits of the coach. Wulf is Prorector for Digital and Regional Affairs and Professor of Information Systems and New Media at the University of Siegen,

Project partners in Germany include the Fraunhofer Institute IAIS, the Diocesan Caritas Association of the Archdiocese of Cologne, and other partners from Europe, including the Public Hospital Association of Paris, the Italian National Institute for Research on Aging, and the AGE Platform Europe, which works across Europe to address the concerns of the aging society. Project partners in Japan include TOHOKU University and the National Institute of Gerontology and Geriatrics and the National Institute of Advanced Industrial Science and Technology (AIST). The University of Siegen acts as the EU coordinator of the project. A first online conference with all partners as well as representatives of the EU Commission and the Japanese Ministry of Science took place to launch the research in January. The three-year project is funded by the EU's Horizon 2020 framework program for research and innovation and by public funding from Japan with a total of four million euros in the EU plus four million euros in Japan. The University of Siegen will receive about 750,000 euros of this.

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Designing for enjoyable and meaningful practices mediated through technology



Autonomy
»I can do what I want the way I want it«



Security
»I'm safe from threats and uncertainties«



Competence
»I'm good in what I do«



Physicality
»That my body was getting just what it needed«



Relatedness
»I feel close to the people I care about«



Stimulation
»I was experiencing new activities«



Popularity
»I have impact on what others do«



Meaning
»I feel a sense of deeper purpose in life «

