



EU-JAPAN VIRTUAL COACH FOR SMART AGEING

A virtual coach for smart ageing

AGE Platform Europe embarks on a joint European – Japanese cooperation for smart ageing. E-VITA's aim will be to design an intelligent assistant to support older people in remaining active in their living environment.

The University of Siegen, the project coordinator, with 11 European and 11 Japanese partners, will develop a virtual coach for smart ageing at home. The e-VITA project objective is creating an intelligent assistant that older people can use individually at home - tailored to their own living environment and responding to their personal needs and wishes. "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 the shape of the virtual assistant in so-called practice „labs together with the users“. In other words, a trustworthy assistant will be co-created with end-users and will follow a design-for-all approach. To this end, the University will cooperate with local authorities and non-profit organisation in Siegen-Wittgenstein, among others, so that the support system can also be linked to their social services and activities. The virtual coach will respond to the older adult via natural language interaction. This dialogue system has two main goals. First, enable a smooth verbal interaction between the older person and the coach. Secondly, the coach will create a trustful environment providing information through the conversations that respect privacy and are compliant with GDPR. Question-answer functions from large databases helping discovering new information such as Wikipedia and data from various sensors are used for this purpose. For example, the system evaluates 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 older person in the different languages of the participating countries. For example, based on the needs of the older adult, the coach could remind them to exercise regularly or go for a walk, or recommend cultural events. It can also help people to connect easily with family or friends, to eat healthier, or network with communities and find social activities in their neighborhoods.

The specific functions and tasks that the coach will assume and the form it will take will be determined together with the older adults during the whole project duration. "It is crucial for the project that the users accept the technologies. We can only be successful in the project if we put the users at the centre of the design and development process," says Elisa Irlandese, project officer at the European Commission. Dr. Rainer Wieching, the overall project

manager of e-VITA and an expert in the field of active aging, healthy living and social robotics, agree with her statement.

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 application 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 and training 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" - region where the University of Siegen is located - is a rural region with a declining number of family doctors and an increasing number of older people. This demographic and structural change 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 ageing 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 digital Kick-off-Meeting with all partners as well as representatives of the EU Commission and the Japanese Ministry of Science took place in January 2021 to launch the research. 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.

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