

## PROJECT CHALLENGE 4

New technologies for improving the independence level at home of people with some degree of specific control and assistance.

**We are all now familiar with chatbots and voice assistants. Their possibilities can go beyond the current collection of applications mainly focused on answering questions, home automation, music selection, and chatting. Their openness to be programmed by ICT professionals, enables the creation of specific solutions for several complementary range of possibilities to those with some degree of dependence at home. Until assistive robots could be a reality (the movie 'Robot & Frank' is suggested here), current devices can offer very interesting alternatives.**



Voice assistants, such as Alexa or Google Nest, come with a whole range of cheap devices from just a speaker to a complete display. Using the most up-to-date voice recognition and Natural Language Understanding, ICT developers are in an excellent position to create specific solutions not only able to help users but social-healthcare professionals, caregivers and relatives.

**Taking into account the current possibilities of the current devices, students are asked to conceptualize possible applications in different domains, where monitoring, automatic reminders, direct access to caregivers and relatives etc. could be considered:**

- A possible distribution of these cheap devices can be placed at any home+
- These devices are open to be programmed by ICT professionals
- These devices can provide specific conversation-based solutions totally adapted to user's profile and special needs
- These devices are connected to Internet, and every interaction can be controlled and monitored by caregivers and social-healthcare professionals, such as reminders to

take medication, daily activities, automatic conversation with relatives and caregivers, and, even, automatic detection of unusual patterns or situations that must be warned.

- Display voice assistants have also camera, that can complement many of these interesting possibilities, allowing video-conferencing to professionals and caregivers
- These devices never get tired, being able to repeat and insist in front of some required actions, such as medication and other required activities
- Everything can be captured and centralized in a server, with specific front-ends to relatives, caregivers and professionals

#### **Possible suggestions for what the solution might look like**

- Specific combination of smart voice assistant devices and even mobiles
- Specific software solutions for these devices and backend/frontend for storing and managing user daily activities

#### **What skills are needed to produce a solution?**

- Social and health skills, services for patients
- Digitization and application skills
- Service design, customer experience, customer orientation