

G. CONTI, P. BAMIDIS, G. UCELLI. **The importance of indoor location and monitoring to increase safety of ageing people.** *Gerontechnology* 2016;15(suppl):75s; doi:10.4017/gt.2016.15.s.650.00

Purpose The goal of this work is to show how indoor location technology can be beneficial to ensure improved supervision and higher safety standards to frail, cognitive impaired or physically disabled persons. A specifically developed solution, called MentorAge® is presented within this work. MentorAge® can be used to detect (if required due to conditions of the user) when an old adult has fallen, or is starting a night wandering episode, or has entered the toilet without coming out after a given time, or, furthermore, the person is about to rise from the bed. The technology, which is now being used in an Alzheimer unit within a large nursing home in Italy, has shown that it can significantly increase safety in case of patients with cognitive impairments who cannot step off the bed without support from caregivers (e.g. due to fracture). In addition, it has demonstrated that it can deliver increased efficiency and lower operational costs when compared to a single caregiver as it can monitor an increased number of seniors (especially during night shifts). **Method** The solution uses a small low-cost device (Figure 1), made of a micro-pc and a 3D sensing unit, is installed on the ceiling in the areas that need to be monitored. To protect privacy, the unit can only detect silhouettes. It cannot capture all body details (Figure 1, left side) and it does not record any image. The unit can be installed and configured within minutes. No infrastructural work is required and only a power supply and a network connection (or Wi-Fi) are needed. The solution tracks the position of the different body limbs (head, arms, legs) and identifies conditions of danger, sending out an alert to the smartphone of the nurses whenever a condition of danger is identified. **Results & Discussion** The monitoring system is now in use at the nursing home S. Bartolomeo in the North of Italy and used to monitor the corridors and 20 rooms for patients with Alzheimer's disease. It has proven to be beneficial to ensure that guests are safe while remaining as independent as possible, in turn reducing the burden on caregivers. In addition, the technology is now being integrated within the wider UNCAP toolkit, a platform for active and healthy ageing people developed in the context of the project UNCAP funded by the Horizon 2020 programme of the European Commission³. This will ensure a wider set of features providing interoperable access to positioning and biosensing information that can be used to infer an even larger set of conditions of risks. UNCAP is going to eventually be piloted for 12 months in 13 pilot sites around Europe with the involvement of approximately 1000 users (both aging people and caregivers).

Reference

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Address: Trilogis, Rovereto, Italy;
E: giuseppe.conti@trilogis.it



Figure 1. The MentorAge® system showing detecting a person rising from the bed