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First results from the SafEE project: Safe & Easy Environment for Alzheimer's

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Purpose The SafEE (Safe Easy Environment) project¹ is financed by ANR (National Research Agency) and CNSA (National Solidarity Fund for Autonomy). The aim is to improve the safety, autonomy and quality of life of older people at risk or suffering from AD (Alzheimer Disease) and related disorders with ICT solutions. More specifically, in the SafEE project we have developed: (i) An ICT-based behavior analysis platform able to detect, recognize and assess daytime (such as agitation) and nighttime (such as sleep disturbances) behavioral patterns (BEHAVIOR), walking/balancing capabilities (MOTRICITY), orientation and procedural memory (COGNITION); (ii) Tailored non pharmacological therapeutic solutions for (a) sleep and related behavioral disturbances, using stimulations with aromatherapy and music therapy, and (b) cognition, using a training interface based on Kinect sensors and tactile tablets; (iii) two pilot studies (at home and in nursing home) in order to validate the acceptability, sensitivity and efficacy of the systems. **Method** French partners of the projects include clinicians (CHU, CoBTeK), research engineers (INRIA) and industrials (Aromatherapeutics, SolarGames, Music Care). Similarly, Taiwan partners include clinicians (TVGH, NCKUH) and research engineers (SMILE NCKU). In the first pilot study (SafEE at home) two groups of patients with frailty syndrome living at home have been included. Patients in the first group (mean age: 79 years; all female) had only the ICT-based behavior analysis platform, while patients in the second group (mean age: 89 years; all female) had the ICT-based behavior analysis platform and the non-pharmacological therapeutic responses. In the second pilot study (SafEE in nursing home) patients with Alzheimer's disease living in nursing homes have been included (mean age: 84 years; all female). All participants of this second pilot studies had ICT-based behavior analysis and non-pharmacological therapeutic solutions. Recorded data were processed by the ICT-based behavior analysis platform, and then analysed. Evaluations during different phases of the two pilot studies have been conducted with video sensors and clinical evaluations to test the acceptability, sensitivity and efficacy of the SafEE solutions. **Results & Discussion** So far, we have analyzed the results of the first two patients, one patient at home with frailty syndrome and one patient in nursing home with Alzheimer's disease. Both patients had ICT-based behavior analysis and non-pharmacological therapeutic solutions. Preliminary results show that it is possible to use an ICT-based behavior analysis platform with video sensors at home or in nursing home for patients with Alzheimer's disease or with frailty syndrome. They also show the acceptability of this platform for patients at home and in nursing homes. On the over hand, analyses of the first results seem to show an efficacy of non-pharmacological interventions on the cognitive evaluations in patients at home, but not in nursing home.

References

1. <http://safee.cmrr-nice.fr/>; retrieved January 2015

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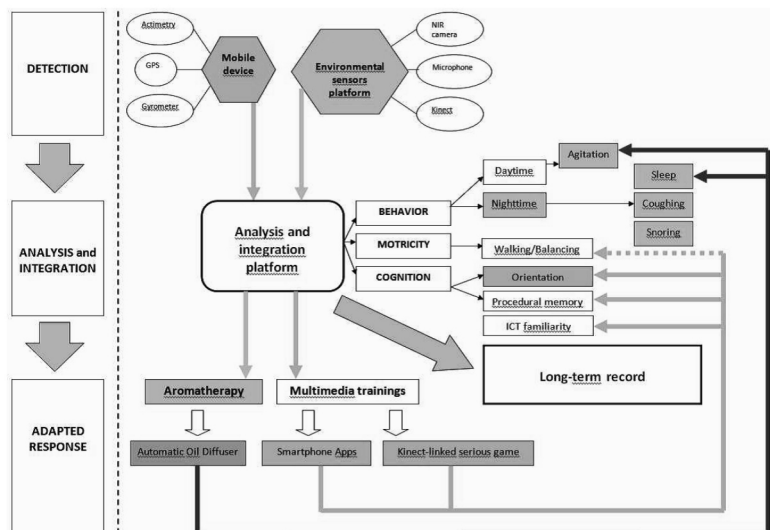


Figure 1. A global description of the SafEE project