

## ONLINE GAMING AND TRAINING PLATFORM AGAINST FRAILITY IN ELDERLY PEOPLE

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Frailty, a condition associated with functional decline caused by insufficient mental stimulation, physical activity and healthy nutrition (Gomez et al., 2013), is a common occurrence among older adults. To counter this effect and decrease the risks for disability, dementia and hospitalisation, we developed a community-based service supported by technology called PERSSILAA (PERsonalised ICT Supported Services for Independent Living and Active Ageing). People who can particularly benefit from such a self-management service platform are in a so-called pre-frail state; declining but not yet in need of professional care.

Since becoming frail is often going unnoticed by the person itself, the service starts with a screening process to identify the older adults with functional decline. They are offered a monitoring and training program that supports them in maintaining or improving on the three abovementioned dimensions of daily functioning. In addition, subjects with proper levels of functioning are also encouraged to use the service since by training in the different modules vulnerability for age related health decline can be prevented.

To realise indispensable long-term engagement of the user to the service, an online gaming platform has been developed. Its user experience design relies on our previous research outcomes on gaming, gamification strategies and player motivation for the older adult (De Vette et al., 2015) to match the various preferences, abilities and prior game experience of this target group as well as possible. The game serves as an alternative interface to the standard way of exercising by providing access to the other modules from within the game environment. In the game, the player is an adventurer that is shipwrecked on an unknown island in a storm. A meaningful and motivating experience is created by reflecting the user's performance on the training modules in the progression of the game. For example, every next level is opened after passing a predefined threshold of performance on the PERSSILAA services.

Both in the Netherlands and in Italy, end-users have been involved in short evaluation cycles to quickly investigate and solve issues, thereby ensuring optimal acceptance and usability. In an ongoing evaluation study among long-term users, information is gathered on preference for game content, usability, clarity and accessibility through an online questionnaire, and provides direct input for further implementation. In addition, actual use is monitored objectively through data logs. The refinement of the game environment by means of new study outcomes and developments is an ongoing iterative process toward the realisation of an enjoyable game-based service platform for the older adult that is also employable in similar future services. Final evaluation results are expected end of 2016.