

J. Fernandez, A.B. Martinez. *A handheld game console as a companion for elder people*. *Gerontechnology* 2008; 7(2):101. Elderly people have specific requirements taking into account their social and health state. Two main factors that affect the quality of life of old people are their motor and cognitive abilities. Recent advances in information and communication technologies make possible to propose new tools to improve or maintain the well-being of old people. This paper presents an electronic device (the e-Companion). It is meant for daily motor and cognitive training at home. It is based on a handheld game console (the Nintendo DS or NDS) that both allows to program a lot of training activities, as well as offering a wireless communication channel with a care or/and training person. This e-Companion will help elderly people to enhance their lives, increase their independence and gain greater social inclusion. The selection of the NDS to implement the e-companion is based on its low weight and measures (275 gr., dimensions 148.7x84.7x28.9 mm), its simple and intuitive interface (10 buttons, 2 separate 3-inch TFT LCD -the lowermost display is overlaid with a resistive touch screen-, 1 microphone, 2 stereo speakers and a Wi-Fi Network Connection -802.11b compatible-), its robustness, and low-cost (approximately \$US 129). The facilities that the current version of the e-Companion offers to its users are: (i) *Motor training activities*; these activities are similar to video games, stimulate motor coordination, visual sharpness and reflexes. These activities use, at least, the touch screen and its stylus. Some examples are a target tracking with the stylus, drawing forms following an example, moving the stylus along a given path or drawing the way to the exit of a maze. (ii) *Cognitive activities*; these activities are designed to stimulate the users 'brain'. Some examples are to resolve simple arithmetic operation, object association games, writing activities (using the touch screen and its stylus or a finger) and memory games. (iii) *Wireless Phone*; the microphone, the speakers and the Wi-Fi connection allow exchanging digital audio between the e-Companion device and an assistance workstation. This feature is useful in residential homes for the elderly or hospitals. (iv) *Diary and alarm facilities*; user or care personal from the assistance workstation can write down reminders, alarms or scheduled activities. Future facilities that can be added to the e-Companion are an e-pet (a program to interact with an avatar that the user has to take care of), and e-Companion localization (in broad area, where it can be difficult to find a person, with an infrastructure of multiple Wi-Fi access point, the approximate position of a e-Companion device can be determined in the assistance workstation).

## References

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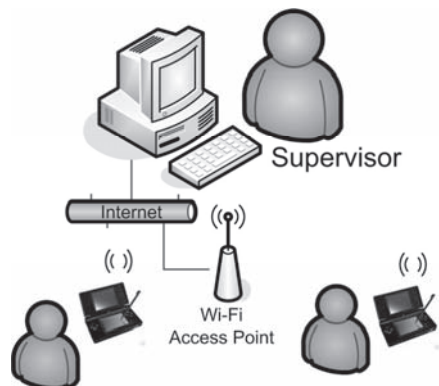


Figure 1 e-Companion Overview. Assistance workstation and several users using its e-Companion