Design and developments of therapeutic videogames ('serious games') directed to elderly people is a growing scientific and commercial field inside the more general theoretical framework of gerontechnology[1]. Videogames have been widely used as cognitive training for elderly since the mid 80th: Pac Man and Donkey Kong[2], Super Tetris[3], Brickles and Concentration[4] are but a few examples. In the last years, several games have been proposed with the intent to address cognitive disease. Rehabilitation tools, like VividGroup's Gesture Xtreme™ and Sony PlayStation II Eye Toy[5], have the purpose of augmenting the mediated experience of the user and have proved useful for mild stroke or chronic patients. Other devices allow users to manipulate virtual objects in a natural way, like Nintendo DS and Wii (www.touchgenerations.com). Some games are directed towards memory[6] or visual attention[7]. Against this background, ElderGames is an interactive videogame platform developed on a comfortable mixed-reality table-top solution, allowing simultaneous monitoring and training of several cognitive abilities (*Figure 1*). The design process started with the selection of the cognitive function to be addressed, and will finish with psychological assessment instruments embedded in to the games. 62 Experts with different scientific background (psychologist, occupational therapist, social worker, educator, medical doctor, physiotherapist, ICT professional) were divided in three geographically based groups (south, central and north Europe) and participated in a collaborative design process involving a series of brainstorming sessions, structured focus groups, contextual interviews, questionnaires and open discussions. Outcome of this work were three points that constituted the first step in the design of the prototype but also represent guidelines for gerontechnology design in general: (i) promote physical and psychological independence of elderly, (ii) stimulate healthy style of life, and (iii) support social relationship and especially cross-generation communications. Also emerged the need of a gerontechnology to be able to empower and motivate participants to persist in exercising, training and learning, without getting bored, requirements that are easily met in games. Subsequently, experts identified the cognitive functions to be treated and ranked them by importance. Attention, memory, fine psychomotor control and executive function emerged as the most important skills in gaming session. Language and mathematic calculation, although not considered as much important for monitoring, were also included in the game design requirement as variables that should be stimulated and trained. Currently, the prototype is being tested in three centers in Norway, UK and Spain.

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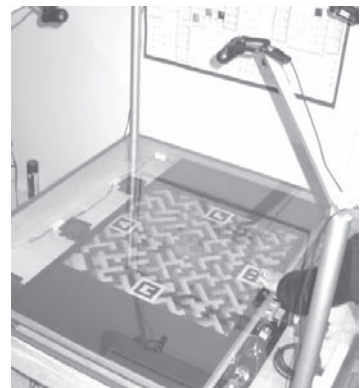
Figure 1 The ElderGames mixed-reality table-top solution