M.L. Alcañiz Raya, J.A. Gòmez, L. Gamberini, M. Martinelli, L. Prontu, B. Seraglia, D. Varotto. Design and development of a mixed reality solution for gerontechnology applications. Gerontechnology 2008; 7(2):66. The 'Eldergames' Mixed Reality system consists of an interactive table-top that includes several games specifically designed for monitoring and training old people's cognition. Mixed Reality is a new form of shared space that augments the real world with synthetic electronic data and, in this sense, is located in a continuum between Virtual Reality and Augmented Reality[1,2]. In our case, the virtual element is the game content and the real element is the interface. As mentioned above, the main activity that elderly carry out on the interactive table is playing. The Eldergames platform contains several games, specifically designed to allow old people to wield their cognitive abilities, under the monitoring by experts. Eldergames also enables players to communicate with each other through an internationalized chalkboard. The Eldergames Mixed Reality system presented here is a prototype currently under study. It has been designed and developed following the most important usability and ergonomic principles and has been revised according to an ergonomic evaluation carried out on the first prototype. The platform is composed of several components: a 120x120 cm table that incorporates a 60x60 cm 47'' LCD TV; a PC to manage all the system functions; a pen with marks for the interaction with the interface; four webcams tracking the marks' position. The Eldergames table allows a maximum of 4 users, playing either face-to-face or through the web. In the first case, players sit around the table and utilize an Intranet connection; in the second, they are located in different centers (or countries) and connect to the game by using Intranet as well as Internet connection[3]. The system includes an Application Server (AS) and an Eldergames Prototype (*Figure 1*). The AS, designed according to the principles of simplicity and functionality, contains three modules: the users management, to enter and manage the users' personal data; the cards management, to handle personalized cards used in the Eldergames prototype; and user monitoring to track the user's performance. The ElderGames prototype comprises the Eldergames zone with a Memo game, and the Minigames zone with games allowing cognitive training planned by experts on the basis of the needs of the individual user.

References

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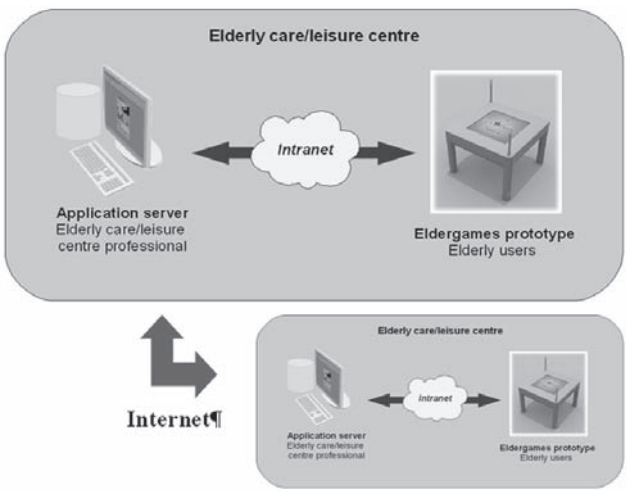

Figure1 ElderGames application server and prototype