



## **Timocco: Virtual Reality in Therapy**

### Using an Innovative Gaming Environment in the Unit for Child Development.

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“Timocco” is a virtual gaming environment activated by detecting movement. The system allows the child to play games by moving his hands in front of a webcam while receiving on-screen feedback. Contrary to other interventions that can be frustrating and unrewarding, Timocco is attractive, friendly, and encourages the child to participate in a fun challenging game. The system was designed for children with motor and cognitive difficulties (e.g. cerebral palsy (CP), ADHD, coordination difficulties, etc.) and allows them to enjoy therapy in a playful and imaginative surrounding.

The Neurology and Child Development Unit has tested approximately 65 children ages three to seven, 30 of whom have been diagnosed with ADHD, 24 with CP (mostly hemiplegia), and the rest with various other diagnoses.

#### **Results:**

ADHD: 27 children (90%) showed immediate improvement in their ability to remain attentive in structured 40 minute tasks (including sitting undistracted next to a table). This result was consistent over ten or more sessions.

CP: 19 children (79%) used their affected hand better than before. Moreover, unlike other methods of therapy they got a positive and fun experience that

encouraged them to continue using their affected hand. It is unclear how frequent the sessions should be to maintain these results.

### **In conclusion:**

From this pilot study, it is evident that Timocco is beneficial to many children with a wide array of developmental difficulties. We are currently planning larger scale research that will enable us to evaluate Timocco's efficiency in a wider populations.