



# ABBI Project Newsletter

September  
2016

## Research and Development

by The ABBI team

In the last six months the ABBI consortium has worked on multiple experimental and technological aspects:

- A new rehabilitation program to increase social interactions in visually impaired children aged between 6 and 18 years old has been performed by Chiossone and IIT teams.
- New tests assessing mobility and posture control have been developed by the University of Hamburg in conjunction with Chiossone and IIT teams.
- A new version of the application that controls the ABBI bracelet is being released thanks to the collaboration between IIT and ULund teams.
- Dissemination activities have been carried out by all members of the project.

### Social rehabilitation with ABBI

In order to increase social interactions among peers, we performed a social rehabilitation with visually impaired children aged between 6 and 18 years of age using the ABBI bracelet for three months. During the rehabilitation, children performed several social games adapted for blind individuals in order to improve their ability to make social contacts with peers. For example, they played the red light/green light and the home base games with the use of sounds. Before and after the training, we tested their social competence with an imitation test in which they had to synchronize their movements with the movement of a person standing in front of them. Our preliminary results indicate that after the rehabilitation performed with ABBI, all visually impaired children are better able to perceive and reproduce the movements made by another person, indicating a better sense of social imitation. We are now

performing the same social rehabilitation in a group of 1-5 years old children.

### Development of new tests

The University of Hamburg developed and performed new tests to assess the ability of visually impaired children to orient themselves in the environment and maintain a stable posture despite balance displacements. The data collection on visually impaired children has been performed thanks to the collaboration with the Italian Institute of Technology and Istituto Chiossone. The data collection on sighted children is still ongoing.

### Development of a new app

The University of Lund in conjunction with the Italian Institute of Technology is developing a new app that allows to better perform the social games proposed in the social rehabilitation of

6-18 years of age (see first paragraph). The app will allow a better control over the general functioning of the bracelets when performing social games.



1

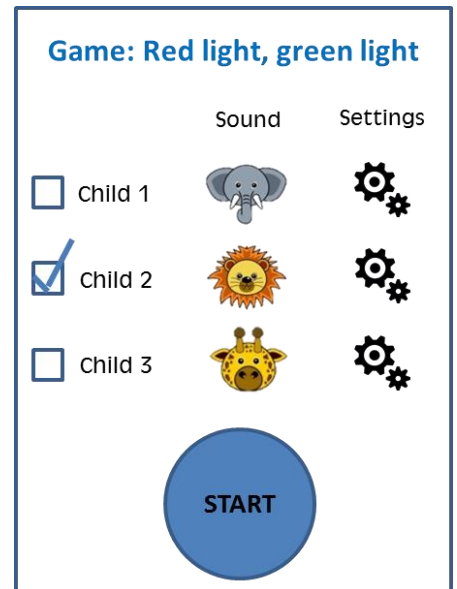
The figures (1,2,3) show a therapist and a visually impaired child performing some spatial and social games during the three-months rehabilitation training with ABBI. The last figure (4) shows one of the possible designs of the new application.



2



3



4

# Dissemination and exploitation activities

by The ABBI team

ABBI project has been widely disseminated in both scientific conferences and technical fairs.

IIT presented the results of the spatial rehabilitation in children 1-5 years old performed during the second year at the European Conference of Visual Perception in Barcelona (ECVP) and the International Conference in Neuroscience in Copenhagen (FENS).

The results of the social rehabilitation in children 6-18 years old have been presented by the IIT team at the BMVA technical workshop "Vision for Interaction: from humans to robots" in London and at the Italian Conference "Brains in Action" in Milan.

In addition, the main achievements of the ABBI project have been widely reported in national journals (see figure).



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