



ABBI Project Newsletter

September 2015

Research and Development

by The ABBI team

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

- A new prototype that includes sonification has been developed.
- The spatial rehabilitation program for children aged 1-5 has been outlined.
- Audio user evaluation in children aged 1-5 has been performed.
- ABBI dissemination has been largely reported in scientific conferences and technical fairs.

ABBI sonification prototype

A new prototype that includes sonification has been developed.

It will be used in the upcoming months by the University of Hamburg team in the postural rehabilitation of blind adults.



Figure 1. ABBI sonification prototype.

The figure shows a blind adult performing a postural task with ABBI. ABBI gives an audio feedback related to the postural sway while performing this task.

The Spatial rehabilitation program for children aged 1-5

IIT and Chiossone Institute team defined the goals for the upcoming spatial rehabilitation in young children aged between 1-5. The spatial rehabilitation program started in the middle September and will end in the middle December. Ten children will participate in a 12 weeks rehabilitation program. The main goal is to increase in all visually impaired children the ability to accurately encode the auditory spatial properties of the surrounding environment,

Performance tests designed to evaluate spatial cognition before and after the rehabilitation training, have been developed and performed in sighted children aged 1-5, in order to have a reference value for blind children.

A set of 15 rehabilitation exercises of increasing difficulties has been developed to arouse visually impaired children in exploring and refine their ability to mentally represent the auditory space.

Game/activity development

University of Lund together with IIT and Chiossone Institute has organised game co-design workshops where children with visual impairments have used the ABBI device to create fun and challenging games. These games show that the ABBI already as it is today can be used in games and play that involve both sighted children and children with visual impairments.

Audio user evaluation

IIT in collaboration with Chiossone Institute and Lund University organized a workshop involving blind and low vision young children. Children were asked to report their preferences for say specific natural sounds. The preferred sounds are the ones used in the spatial rehabilitation program of young children aged between 1-5.



Figure 2. Audio user evaluation.

The figure shows an activity performed by children aged between 1-5 during the workshop organized by IIT in collaboration Chiossone Institute and Lund University.

Dissemination activities

by The ABBI team

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

IIT presented the preliminary results of the spatial rehabilitation in children 6-18 at:

- IMRF: International Forum of Multisensory Research.
- ECVP: European Conference of Visual Perception.
- IEEE EMBC: IEEE Engineering in Medicine and Biology Society.

University of Lund presented ABBI with a poster at MobileHCI 2015, and with a presentation at the conference workshop "Mobile Collocated Interaction With Wearables" that won the best paper award.

University of Glasgow presented the first results on the effects of sound type on recreating the trajectory of a moving source at the CHI conference.

Furthermore ABBI will be presented in 3 national and international events:

- Techshare UK, fair in UK on technology.
- Abilitando, fair in Italy for technologies for disabilities.

ICT 2015, Innovate, Connect, Transform, the Biggest ICT event of Horizon 2020.

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DETAILS

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ABBI - Project number: 611452

Small or medium scale focused research project (STREP)

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Topic: Objective ICT-2013.5.3 ICT for smart and personalised inclusion

EC contribution: 1,849,995 €

Coordinator: Monica Gori, IIT

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