

**Special Event at the 9<sup>th</sup> Dbl European Conference**  
**Wednesday, September 6<sup>th</sup>, 2017, at 17:30**

## **Demo: Tactile aids, Wednesday September 6 at 17:30 / 5.30 pm**

Dr. Parivash Ranjbar has developed and will demonstrate five different prototypes of tactile aids

Place: Room W5 / Latinerstuen

Haptic technical aids Distime, Monitor, Good vibrations, Ready-Ride and VibroBraille for improvement of Time perception, Environmental perception, music perception, mobility and communication for persons with deafblindness.

Parivash Ranjbar<sup>1</sup>, Dag Stranneby<sup>2</sup>, Erik Borg<sup>1</sup> and Cheryl Akner-Koler<sup>3</sup> <sup>1</sup>Audiological Research Centre, University Hospital At Örebro, Örebro <sup>2</sup>School Of Science And Technology, Örebro University, Örebro <sup>3</sup>Theoretical & Applied Aesthetics At Industrial Design, Konstfack, University College Of Arts, Crafts And Design, Stockholm

There are approx. 1300 people with deafblindness (DB) in Sweden where about 100 of them are with complete deafness (D) and blindness (B). The number will reach about 30000 if we also include people older than 65 with severe visual impairment (VI) and hearing impairment (HI) and several million worldwide. Difficulties in time perception, environmental perception, music perception, mobility, social participation and communication are examples of their frequent problems. Five haptic technical aids are developed to reduce these problems. Distime is an application in a smart phone to inform the user about the planned activities by choosing different information channel depending on the sense that works and her/his ability.

The activities can be presented as sound or vibrations for users with B; as images, movies and also as vibrations for those with D and vibrations for those with DB.

Monitor informs users with D and DB about ongoing events with the aim to increase their environmental perception. Using an specific algorithm for environmental sounds, it converts the audible sounds produced by events to sensible vibrations which can be sensed and interpreted as events.

Good Vibrations uses an specific algorithm for music and converts the audible music to vibrations which can be felt with the aim to increase music perception for users with severe HI, D/DB as well as for users with normal hearing who want extra enhanced experience of the music.

Ready-Ride is a positioning and communication aid to improve the mobility of riders with severe VI, B or DB. It is used for distance communication between a trainer and a rider with VI where the trainer can send information about the rider's position give commands or feedback about the riding.

VibroBraille informs users with B/DB about the short notifications received from different applications in her/his cell phone. It converts the text to its corresponding Braille pattern where the active points are vibrating.