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Creating smart textiles and technology to assist people with deafblindness.

In this document, the latest results of the SUITCEYES project are presented. This version includes the contents of the latest promotional material created.

The HIPI, is our Haptic Intelligent Personalised Interface. It is a smart textile garment that conveys environmental information to a person with deafblindness through haptic signals to enhance navigation and social interaction.

To further explain what the HIPI is, and what we have accomplished, we present four important aspects of the HIPI.

1. Talking and learning with our users:

After discussing with people with deafblindness from 5 European countries and experts, we have analysed their needs and considered the potential scenarios where they could benefit from technology. This was crucial to agree on the direction of our designs.

2. Playing and learning:

Thinking ahead, gamified scenarios for joyful learning about navigation and social interaction are being tested, aiming to offer a constructive experience to HIPI users.

3. Sensor technology:

Objects, people and environmental cues are detected using sensor system, such as camera, ultrasonic sensor, laser scanner and iBeacon sensors.

All of this information is analysed to identify people and objects, to guide users in indoor navigation and obstacle avoidance.

4. Translating information into vibration signals:

Design of vibration “haptograms” with participants, based on Social-Haptic Communication. These haptograms are being tested to convey environmental information to users.

Conclusion: How does the HIPI assist people with deafblindness?

- Navigation and obstacle avoidance.
- Visual recognition of people and objects.
- Information for navigation and visual recognition will be conveyed via vibration haptograms.
- The HIPI will feature gamified scenarios to joyfully learn to use the HIPI.

Project milestones:

- January 2018: Project kickoff.
- December 2018: Definition of personas, environments and use scenarios.
- June 2019: First generation prototypes available and tested.
- December 2019: Second generation prototypes available and tested.
- October 2020: Third generation prototypes available and tested.
- December 2020: Project completion.

What is next?

Integrate the different components into a third-generation prototype to be tested by project participants.

Project general information:

The SUITCEYES consortium consists of five European research institutions; a partner from industry producing cutting-edge and flexible solutions for people with disabilities; and a non-profit organisation that creates tactile illustrated books for visually impaired children. The respective areas of expertise of this group have been specifically brought together to meet the demands and objectives of this project.

- University of Borås, Sweden (project coordinator).
- Centre for Research & Technology Hellas, Greece.
- Offenburg University of Applied Sciences, Germany.
- University of Leeds, United Kingdom.
- Eindhoven University of Technology, Netherlands.
- Dreaming Fingers, France.
- Harpo Sp. z o.o., Poland.

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