12.3 Publication à la conférence Innsbruck – Juillet 2004

"Portanum : a new reading aid for visually impaired"

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Format of presentation : panel

Program description :

Developed by THALES, Portanum is a reading aid which allows visually impaired people to read texts (located at a distance) on a classroom blackboard or slides presented in a meeting. The useful system for seeing distances consists in a camera connected to a laptop and an image digital processing software. The image processing improves the legibility, corrects the defects of lighting, increases contrasts, enlarges the image and then offers quality and optimal visual comfort.

Degree of difficulty : intermediate

Abstract:

Developed by THALES, Portanum is a reading aid which allows visually impaired people to read texts (located at a distance) on a classroom blackboard or slides presented in a meeting. The useful system for seeing distances consists in a camera connected to a laptop and an image digital processing software. The image processing improves the legibility, corrects the defects of lighting, increases contrasts, enlarges the image and then offers quality and optimal visual comfort. According to the nature of the captured image, various

treatments will be carried out in order to make the most readable possible image and adapted to the user deficiency. The traditional treatments available on the Screen enlarger technology are integrated in the system. The choice of the representation mode is left to the user appreciation.

For one year, an experiment has taken place with the Montéclair Institute in Angers (France), on children, in integrated classes, during an academic year. Thanks to the remarks of these users, the software could be improved in order to meet, as well as possible, the need for visually impaired people. An experiment took also place in the ISAIP school (Superior Institute in International Action and Production) in Angers. Students prepare a Baccalaureate +4 diploma ("project management in data processing, industrial networks and international culture (IRII)"), title approved level II. Seven visually impaired people has benefit, since September 2001, of a theoretical teaching to the ISAIP, and training courses in France, Spain and Germany. All students from this first year are now graduated and one of them follows its studies with a Baccalaureate +5 training in a master of internet development. This experiment has been repeated with other students in 2002 and 2003.

The CRDV (Reeducation Center for Visually Impaired) in Clermont-Ferrand also decided to spread the system with children aged from 8 to 20. Since January 2004, computers and numerical equipments have been distributed.

Thanks to these partnerships, the idea is to follow the development of the software and to propose new functionalities. Thus, Portanum could offer the possibility of reading papers on a table. The system's use via a network (a single video camera and a signal distribution) could be an interesting solution (according to precise characteristics). At the same time, for the young children under 12, we would propose a simplified interface.

The first reactions show that it is necessary to change practices, but this tool is a useful aid for the pupil to read the blackboard and documents.