VIRGINIA COMMONWEALTH UNIVERSITY

"LOW COST GRAPHICAL DISPLAY SYSTEM FOR VISUALLY IMPAIRED INDIVIDUALS" VCU #06-041

Applications

- Use by blind individuals to view graphs, figures and simple images
- Applicable in a variety of settings, including classrooms, work and on-the-go
- Designed with Deaf/Blind individuals in mind

Advantages

- Works in typical, highly interactive environments
- Low cost, simple operation and maintenance
- Highly portable, unobtrusive and does not need any extra devices for its use

Inventors

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Market Need

For individuals who are blind, there are a few cost-effective tools available to help them "see" 2 dimensional graphs, figures and simple images in real-time. Existing technologies are expensive and often require the intervention of a sighted person to translate a visual image into a format, such as text or raised images on embossing paper, which can be tactilely viewed or heard. These approaches result in delayed viewing of the material and diminished self-reliance for visually impaired individuals.

Technology Summary

Biomedical engineers at VCU have developed a simple graphical display device that overcomes the challenges of existing technology. In designing this device, the following criteria were used: 1. low cost, 2. high portability and real-time utility, 3. simple to use and maintain, 4. comfortable and safe, and 5. applicable to Blind and Deaf/Blind individuals. The prototype they have developed meets all of these criteria and is actually worn as a glove with no other extraneous devices (computers, printer, etc.) required. This device uses the haptic system, which is a combination of tactile and kinesthetic sensing, to allow the user to sense visual information on printed material. Preliminary testing of the prototype has shown higher accuracies than current methods. The inventors are interested in collaborating with a commercialization partner to finalize this assistive technology and bring it to the marketplace.

Technology Status

Initial prototypes developed and tested.
Patent pending, US and foreign rights available (see WO/2009/082682).
This technology is available for licensing to industry for further development and commercialization.