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Low Cost Augmentative Electronic Travel Aid for the Vision Impaired

AzTE Cases # M01-036 & M06-057

Invention Description

People without natural obstacle detection capability, due to a visual impairment, require some type of an aid to effectively maneuver within their environment. Although Electronic Travel Aids (ETA) have been in existence for over 40 years, a combination of economic, technical, and other issues has prevented them from becoming mainstream assistive tools for the vision impaired.

Researchers at ASU have developed a new design focused on overcoming these challenges to provide the right balance of cost, functionality and ease of use. Additionally, a potentially novel concept is presented; the use of modular sensor pairs to offer simultaneous scanning in multiple directions while eliminating sensor alignment problems and fitting people of all sizes. It detects obstacles in multiple directions in a hands-free and easy-to-use package.

Potential Applications

The market for ETAs is poised to grow rapidly, fueled by the need for a device that can provide the right balance of cost, functionality and ease of use to a broad cross section of people with vision impaired mobility such as:

- Working age blind or vision impaired
- Automotive (i.e., parking radar)
- Robotics (i.e., guidance and obstacle detection)
- Limited or low-light environments (i.e., mine workers)

Benefits and Advantages

This invention offers several benefits to current mobility aid devices on the market:

- Cost effective inexpensive and low cost of manufacture (estimated <\$100)
- **Ease of use** complementary mobility aid device requiring little to no formal training. It is a passive hands-free system, designed to detect obstacles with no effort from the user and does not require constant sweeping like other aids.
- Cosmetic benefit small package type, lightweight, and modular
- Long battery life powered by disposable AA batteries

Intellectual Property Status:

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