## Technical Abstract

**Title:** iUtileyes – A Talking Smart Phone and Tablet Application that Helps People Who are Blind or Visually Impaired to Fully Utilize Devices with Visual Flat-Panel Displays.

The overall goal of this multi-phase project is to combine low cost consumer electronics with an innovative approach and state-of-the-art software to deliver a device capable of removing barriers in vocational settings for individuals who are blind or visually impaired. In Phase I, CreateAbility will develop an application that runs on a smart phone or tablet to help individuals who are blind or visually impaired to fully and safely utilize devices, equipment, kiosks and tools that incorporate small visual displays (SVDs). Not only is the information displayed on these devices with embedded SVDs not accessible, the complexity and extensive use of "soft" keys results in keys having multiple functions; precluding the typical accessibility methods of memorization combined with Braille labels or tactile markings.

This project will demonstrate the technical merit, feasibility and cost effectiveness of combining ground-breaking image processing technology that will enable optical character recognition and text-to-speech software to literally voice the information and instruct the user on navigating the user interface.

Specific Phase I objectives include: 1) determine end user requirements, 2) develop a proof-of-concept prototype of the system, and 3) evaluate of the utility of the prototype with actual individuals who are blind or visually impaired.

**Anticipated Results**
Barriers to employment will be reduced as people with visual impairments will for perhaps the first time, be able to fully utilize ubiquitous devices that incorporate flat panel displays. Users of iUtileyes will have a greater sense of safety, freedom and independence and will be more efficient than relying on colleagues for assistance. Information voiced by the App will promote understanding on how the tool, equipment, Kiosk or device is to be used without having to rely on co-workers or commit a daunting breadth of information to memory.

**Potential Commercial Applications**
The iUtileyes App will address a large pent-up demand, as nearly 11 Million Americans are classified as having a visual impairment of which 2.3 Million have a profound visual impairment. The multiple functionality, affordability and ease of installation of the App will enable this group to more readily utilize devices and tools typically found in vocational settings, such as office and manufacturing, as well as educational and independent living settings. The iUtileyes App will facilitate more effective functioning in workplace and educational settings as well as in the home. Development undertaken in this project will have direct application in commercial and industrial settings where equipment with SVDs is becoming increasingly embraced. Other markets include helping people with intellectual disabilities.