

Dear Wireless Industry Colleagues:

On behalf of all my colleagues at the Wireless RERC, I hope this Fall/Winter issue of our industry newsletter finds everyone happy and healthy in this New Year. 2009 will see the Wireless Rehabilitation Engineering Research Center follow a few new paths of research, as well as build upon the progress already made during our multi-year project efforts. The fourth quarter of 2008 saw a lot of activity, which is detailed below. There is much to report, so let's get started. As always, feel free to distribute amongst your peers.

Sports Stadium Captioning Has Gone Real-Time with: *intelligent* **Access**

Leanne West's Intelligent Access mobile captioning system provides real-time captions to deaf and hard of hearing patrons in a variety of venues, such as sports stadiums, movie theaters or classrooms, or anywhere there are large group settings. Using the venue's existing WiFi network patrons receive captioned text of the event on their personal Windows Mobile smartphone/PDA, iPod Touch, or iPhone. Plans are to make devices running other OS's compatible with the system. Below are some of the Stadium System features:

- Captioning is generated in real-time through CART (Computer-Assisted Real-Time Translation) captioning or typed from keyboard, or any other external serial or network source.
- Song lyrics can be stored and easily selected line-by-line from files to send on demand.
- Text is simultaneously sent to PDA's and other sources such as big stadium screen, or sideline screen.
- Multiple languages can be sent simultaneously.
- Emergency Mode notifies patrons by a custom message in red text that the following message is an emergency notification. The patron is also notified when the emergency is past.
- Captions appear in a scrolling fashion.
- The system has been tested in various baseball and football stadiums.



Ms. West is considering additional venue spaces for implementing Intelligent Access. If you are interested in partnering on Intelligent Access, please contact us.

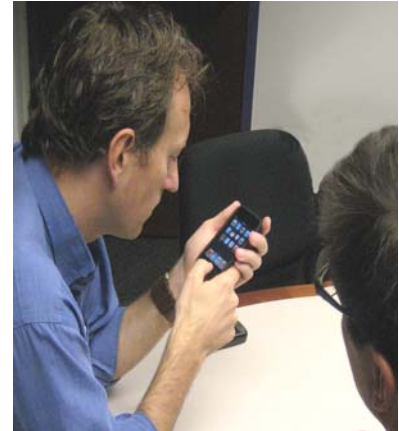
Hearing Aid Compatibility Improves From 2006-08

Results of an annual study begun by the Wireless RERC in 2006 indicate that the index of satisfaction with the choice of a compatible wireless phone by hearing aid users has increased from 2.4 in 2007 to 3.5 in 2008 (5 = very satisfied). Among those who changed phones within the last year, satisfaction index increased from 3.6 in 2007 to 3.7 in 2008.

However, findings of this study also indicate that, despite some progress, roughly half of people using hearing aids continue to have difficulty in finding a compatible wireless phone.

Consumers Explore Touchscreen Usability

With the number of handsets with touchscreen interfaces continuing to grow, the RERC asked a small group of its Consumer Advisors to help explore usability of this type of interface, using the iPod Touch as an example. Consumers with significant visual and/or manual limitations performed a variety of touchscreen tasks in an office setting, as well as while using public transportation. These users were able to complete all tasks successfully, but noted increased fatigue from the effort. For example, users with visual limitations found that the lack of tactile feedback taxed their limited visual abilities, while users with limited coordination found themselves working harder to avoid accidental inputs.



Collaborative Policy Network and Social Networking

Policy research, and the consequent development of policy initiatives, is a critical, though sometimes overlooked tool for reducing technological inaccessibility and participatory barriers for people with disabilities in the workplace and the larger community. One roadblock in the path to successful development of policy approaches, instruments, and initiatives results from the dissimilar nature of the disability community, which can be characterized as having multiple issues, disabilities, and philosophies. The Collaborative Policy Network (CPN) research project investigates:

- 1) key factors and practices that can be used to develop a virtual platform-based network of collaborating participants that supports a community of practice focusing on disability and technology policy
- 2) the role of new media and social networking applications in maintenance of communities of interest.

We are exploring the development of an online CPN that focuses initially on disability and technology policy/research. An assessment is in progress of potential Web 2.0 , social networking, and other online collaborative environments to determine the best platform for the CPN. The end results is to create a common language/”place” among disparate groups via an online community that effectively coordinates cross-disability research interests, which would be a tremendous improvement (and perhaps model) in the larger disability policy community.

Two Separate Tests for the Wireless Emergency Communications Project

The Wireless Emergency Communications (WEC) team undertook two additional field trials last year; one on September 25, 2008 in Raleigh, NC, and the other on December 3,

2008 in Atlanta, GA.

WEC received good news during the field trial conducted at the North Carolina Department of Health and Human Services, Division of Services for the Deaf and the Hard of Hearing (NC DSDHH). The participants in the North Carolina test were all deaf or hard of hearing. Results indicate that:

- 84 percent of deaf, hard of hearing and deaf-blind test subjects found WEC to be an improvement over their current methods of receiving emergency alerts. Prior to testing the equipment, test subjects were surveyed to gather data on their current methods of receiving emergency alerts and information, their usage of wireless devices and their level of interest in receiving wireless alerts.
- The pre-test survey revealed that 89% of test subjects would be interested in a text alert service.
- After experiencing the WEC method on BlackBerry devices running on the AT&T wireless network, the post-test data revealed an increase to 96% of test respondents that would be interested in receiving text alerts via a wireless device.

The second field trial, occurring in Atlanta, was designed to solely test FCC recommendations of the Commercial Mobile Alert Standard (CMAS). This test, the first of its kind, was designed to test the proposed CMAS regulations to see how well they meet the needs of people with vision and hearing impairments. RERC staff found three areas where they will recommend changes to the FCC

- Although 90 percent of participants who are blind or have low vision found the alert attention signal to be loud enough and long enough to get their attention, only 70 percent of deaf and hard of hearing participants indicated the same regarding the vibrating cadence. Comments regarding the vibrating cadence suggested that it would only be effective if the individual were holding the phone in their hand, but easily missed if in a purse or even in one's pocket.
- All hearing participants expressed concern that the early part of the message was missed because the tone went too quickly into the 90-character spoken alert, causing the first few words of the message to be missed. The required Commercial Mobile Alert System message format places the event type first (i.e., tornado, flood, etc.). In this format crucial information may not be heard by blind consumers using text-to-speech software on their mobile phones. Many suggested the need for a header such as "*This is a...*" to allow for more clarity. Such a header is currently employed by the Emergency Alert System (EAS) messages broadcast on television, radio and cable systems.
- Deaf and hard of hearing participants commented that they would like to see enhancements such as strobe lights, screen flashes and stronger vibrating cadences. While these enhancements can be addressed by cell phone manufacturers, they aren't required by the FCC.

State of Technology Conference – September 21-23, 2009

Save the date! The Wireless RERC's is pleased to announce plans for its State of Technology (SOT) Conference on Wireless Emergency Communications to be held

September 21-23 2009 in Atlanta, GA, U.S.A. This international conference will bring together leaders to examine the potential of wireless technology to improve support and assistance for persons with disabilities during emergency situations.

The target audience is the wireless industry, emergency management and public safety officials, broadcast and cable industry, manufacturers of assistive technology, and researchers working on issues of emergency communications.

The topic of wireless emergency communications is important for several reasons:

- Industry's transition from analog to digital
- Consumer's increasing reliance on handheld wireless devices for their information and connectivity.

2007 data from the Wireless RERC's Survey of User Needs (SUN) of more than 1200 people with disabilities indicated they were significant users of wireless products and services, approaching 85%. Further field testing on wireless emergency alerting indicates that an increasing number of users of wireless devices depend on their wireless devices as the number one choice for receiving information. This conference in a think-tank environment will examine industry advances, consumer needs for emergency alerts and collaborative research and development activities to insure future accessible alerting.

Our SOT conference in 2004 had 74 speakers, more than 200 attendees, and more than a dozen exhibitors, which included domestic and international representatives from government, regulatory agencies, state legislators, consulates, advocacy groups, and the wireless industry. Fully one quarter of the attendees had a self-identified disability.

Additionally, the U.S. is not in a vacuum in the area of wireless technology and its use in the rehabilitation engineering field. Europe has unique approaches to these problems and opportunities, and speakers from both continents will help create a global community of interest.

The Wireless RERC is seeking sponsors for this important event. Corporate sponsors will have opportunities to raise their awareness among this community, demonstrate devices, interact with the all stakeholders and show their dedication to helping improve the quality of life of persons with disabilities. If you'd like details about sponsorship opportunities, please contact us.

Ben Lippincott
Wireless RERC
404-894-7034
ben@imtc.gatech.edu
www.wirelessrerc.org