Wireless Emergency Communications Project

NAS Workshop on Public Response to Alerts and Warnings on Mobile Devices
April 13, 2010

Wireless Emergency Communications Project

Ø **Purpose:** Develop and test accommodations needed by people with disabilities in next-generation, wireless emergency alerting systems.

Ø **Objective:**
- Ø Generate policy and research recommendations
- Ø Generate technical recommendations

Ø **Why?** Wireless devices that can receive accessible emergency alerts can increase independence for people with disabilities.

Wireless Use Among People with Disabilities

Survey of User Needs -- RERC Consumer Advisory Network
1600 plus people with disabilities

2009:

- ø **85%** use wireless products
- ø **77%** state access to wireless important
- ø **65%** state a wireless device was important for its role in emergencies

WEC Methodology

Ø **Research and develop prototypes to deliver alerts in accessible formats over wireless devices**

  Ø Administer **12 field trials** and **two** focus groups

  Ø Administer a **pre-test** and **post-test** questionnaire

  Ø Tabulate **quantitative** and **qualitative** data

  Ø Report **findings** and **recommendations** on feasible approaches to accessible wireless alerts

The Testing Begins

Ø Over 100 participants

Ø Blind and/or low vision and/or deaf or hard-of-hearing

Ø Level of experience with wireless devices
  Ø Technology savvy
  Ø Mixed ability
  Ø Infrequent users

Ø Some testers used mobile phones
  with custom software, others used standard
  Blackberry devices

Testing Formats

Ø Standard SMS text messages and Web pages

   Ø Essential information in SMS body
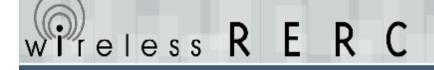
   Ø Link to web page with full alert details

Ø Custom software with enhanced accessibility features

   Ø Distinctive attention signals using audio and vibration

   Ø Synthesized speech to read alerts

Findings of EAS Field Trials

- **EAS Trials** (Nine groups at three sites):

  Ø **Site 1: 94%** of blind, low vision participants stated wireless emergency alerting system they evaluated was an improvement over other methods they currently use for receiving emergency alerts.

  Ø **Site 2: 81%** of deaf and hard-of-hearing and deaf-blind found the alerts over client software to be an improvement.

  Ø **Site 3: 92%** of deaf and hard-of-hearing and visually impaired found devices an improvement.

Ø **EAS Post-field tests: 83%** of people with sensory limitations said receiving emergency alerts via wireless devices was highly desirable.
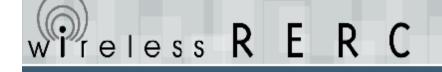
Findings of Supplemental Trials

Ø **Commercial Mobile Alerting System**

  Ø Included CMAS parameters and improvements from previous trials

   Ø reduction in number of characters, no URL's, varied vibrating cadences.
   Ø Of those who participated in previous tests **77%** stated it was an improvement.

  Ø **83%** of persons with visual limitations found the accessible CMAS system to be an improvement over their current source of receiving emergency alerts.

  Ø **70%** of persons with hearing limitations found the CMAS alerts to be an improvement.

Focus Groups

Ø **Earlier feedback from Deaf participants suggested need to discuss ASL alerts**

  Ø All participants felt that ASL was an improvement over text

  Ø Some participants felt combination of text and ASL gave them fuller understanding of alert versus text or ASL alone

  Ø Anecdotal evidence suggest some common terminology used in National Weather Service alerts, such as "take cover" or "low-lying area"; do not translate well into Deaf English and perhaps should be avoided.

Participant Comments

Ø **Positive:**

   Ø Very convenient way to receive alerts.

   Ø Helpful while outside or traveling.

   Ø This makes me feel safer.

Ø **Constructive:**

   Ø Continued or "looped" alert message until phone is answered/alert receive.

   Ø Give more information about where to go and what to do (dedicated website).