



# Integrated Public Alert and Warning System Discussion

IPAWS PMO in coordination with FEMA ODIC welcomes

**University Partners  
on**

**Access and Functional Needs**



**FEMA**

**March 2013**

# Recap from the IPAWS PMO/ODIC April 2012 Roundtable

- ▶ Private sector capabilities and technologies improve accessibility through standards, protocols, and testing initiatives
- ▶ FEMA and National Associations, influencing development of alert and warning technologies and tools
- ▶ Industry Experts' Presentations on Assistive Alert and Warning:
  - AT&T, Susan Mazrui
  - Sprint, Mike Fingerhut
  - SignTel, Ron Liebermann
  - Alertus, Jason Volk
  - DeafLink, Kay Chiodo
  - Serene Innovations, Peter Lee
  - MobiLaps, Hisham Kassab



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# IPAWS PMO Recent Events (April 2012 – March 2013)

- ▶ National rollout of fully operational Commercial Mobile Alert System (CMAS) completed (April 2012)
- ▶ National Weather Service (NWS) began sending Wireless Emergency Alerts (WEA) in June 2012; since then, NWS has sent ~3139 WEAs
- ▶ EAS participants are now required to monitor FEMA's IPAWS for federal CAP-formatted alert messages (June 2012)
- ▶ Presented at and/or demonstrated IPAWS-compliant assistive technologies at:
  - 2012 National Association of Broadcasters (NAB) Show
  - 2012 International Association of Emergency Managers (IAEM) Annual Conference
  - 2012 National Conference on Independent Living (NCIL)
  - 2013 Consumer Electronics Show 2013
  - 2013 FEMA Region III Discussion on Assistive Technology and Access for People with Functional Needs
  - 2013 28<sup>th</sup> Annual International Technology and Persons with Disabilities Conference (CSUN)



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# IPAWS PMO Activities (April 2012 – March 2013)

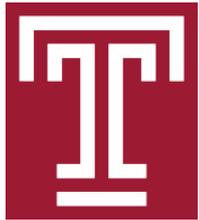
- ▶ EAS Primary Entry Point (PEP) Expansion coverage increased from 67% (Sept 09) to 88.26% (Feb '13) coverage for 275,797,990 Americans
  - *IPAWS' Goal is 90% coverage by end of Q4 FY13*
- ▶ Integration and inclusion of internet alerting capabilities via IPAWS
- ▶ Continue evaluate new alert and warning technologies in the IPAWS lab
- ▶ Incorporation of assistive alerting technologies in technical demonstrations
- ▶ Adopted Flat Stanley & Stella
- ▶ Partnered with Ready.Gov to launch a public information campaign - Whole Community



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# IPAWS/ODIC Roundtable: University Technologies for the Access and Functional Needs Community

- ▶ **Bill Clymer, Associate Director, Center on Access and Technology, National Technical Institute for the Deaf**
  - Rochester Institute of Technology



- ▶ **Jamie Prioli, Assistive Technology Specialist, Reused and Exchanged Equipment Partnership Coordinator (REEP), Institute on Disabilities**
  - Temple University

- ▶ **Dr. Christian Vogler, Director, Technology Access Program**
  - Gallaudet University



- ▶ **Leanne West, Director, Landmarc Research Center**
  - Georgia Tech Research Institute



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# IPAWS PMO Moving Forward

- ▶ Distribute white paper on “Alerting the Whole Community: Removing Barriers to Alerting Accessibility”
- ▶ Launch on-line training course “IPAWS for the American Public” - addresses alerting technologies and considerations for all Americans
- ▶ Host a series of focus groups with Federal, State, Local and Tribal Emergency Managers on the next IPAWS training course, “Best Practices of Emergency Alerting”
- ▶ Demonstrate IPAWS-compliant assistive alerting technologies at the 2013 IAEM Annual Conference
- ▶ Promote broader adoption of IPAWS\*:
  - 31 States with IPAWS access
  - 2 Territories with IPAWS access
  - 127 Counties with IPAWS access
  - 143 Private sector developers with IPAWS-OPEN MOAs
  - 55 Commercial Mobile Service Providers (CMSP) connected to IPAWS-OPEN



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\*As of February 28, 2013



# IPAWS Overview

Antwane Johnson, Director, IPAWS



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# The Evolution of Public Emergency Alerting



Originally called the “Key Station System,” the **CON**trol of **EL**ectromagnetic **RAD**iation (CONELRAD)

Participating stations tuned to 640 & 1240 kHz AM and initiated a special sequence and procedure designed to warn citizens

EBS was initiated to address the nation through audible alerts

Originally designed to provide the President with an expeditious method of communicating with the American public

Designed for President to speak to American people within 10 minutes.

EAS messages composed of 4 parts:

- Digitally encoded header
- Attention Signal
- Audio Announcement
- Digitally encoded end-of-message marker

Provided for better integration with NOAA weather and local alert distribution to broadcasters

Modernizes and integrates the nation’s alert and warning infrastructure.

Integrates new and existing public alert and warning systems and technologies thru the Common Alerting Protocol or CAP

Provides authorities a broader range of message options and multiple communications pathways



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# Presidential Direction

## Executive Order 13407 - Public Alert and Warning System

- “It is the policy of the United States to have an effective, reliable, integrated, flexible, and comprehensive system to alert and warn the American people in situations of war, terrorist attack, natural disaster, or other hazards to public safety and well-being (public alert and warning system), taking appropriate account of the functions, capabilities, and needs of the private sector and of all levels of government in our Federal system, and to ensure that under all conditions the President can communicate with the American people.”

## 1995 Presidential Memorandum “*Emergency Alert System (EAS)* *Statement of Requirements*”

- The national level EAS must be: Fully integrated from the national to local level, yet capable of independent local (Priority Two) and state (Priority Three) operations.

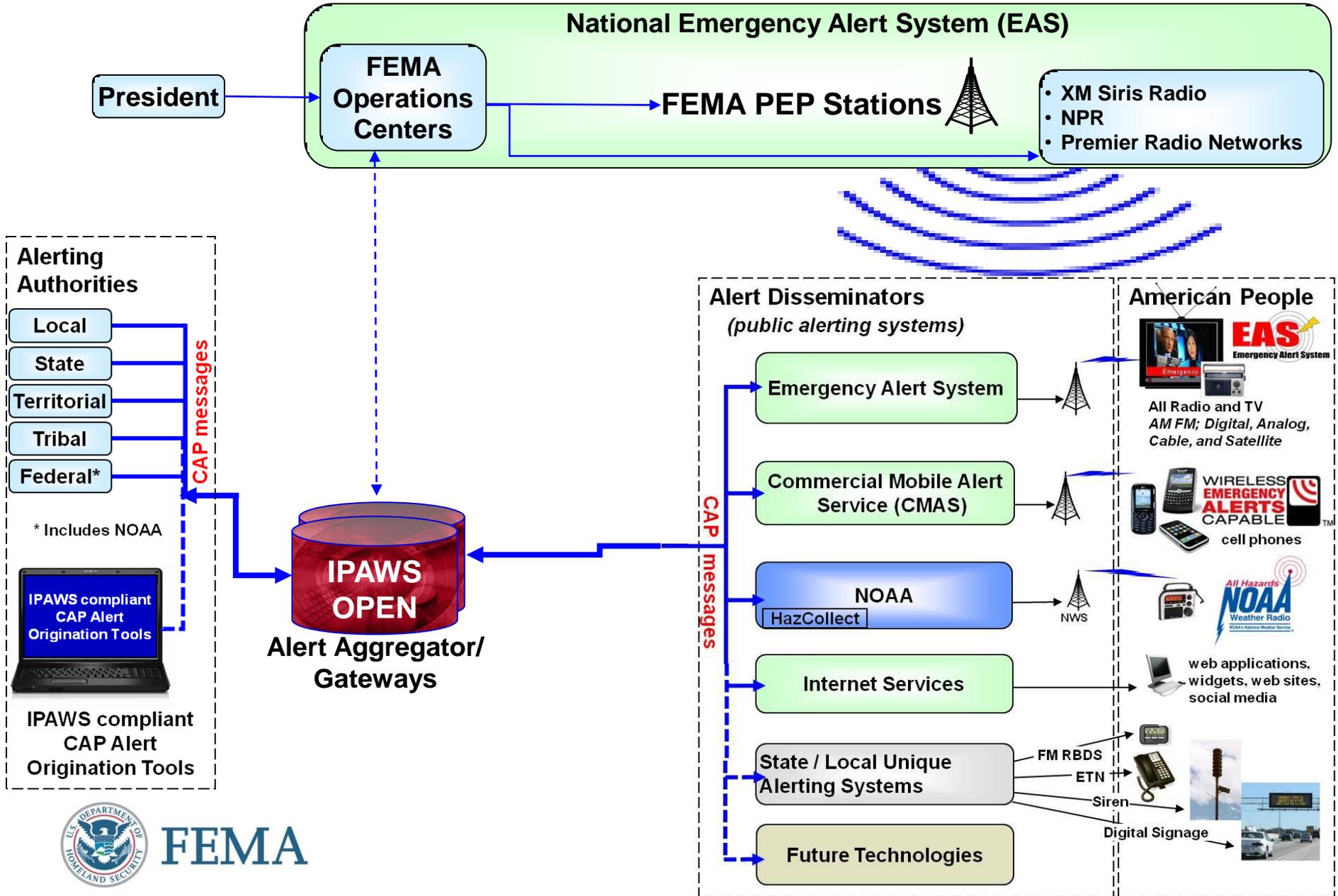
## 47 Code of Federal Regulation (CFR)

- Part 10 (Wireless Emergency Alerts) – Serve as the Federal Alert Aggregator
- Part 11 Activation of the “National EAS” for a Presidential Alert



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# IPAWS Architecture with National EAS





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# RECENT EVENTS



## WEA AMBER Alert in Minnesota

2/20/2013

At about 3 p.m., cell phone users across Minnesota received information about the abduction of 8-month-old Carlos Orosco in Minneapolis. "All of a sudden, my phone just screeched at me," recalled Julio Ojeda-Zapata, technology reporter for the Pioneer Press.

"It was very effective because I looked at the phone and saw the AMBER Alert, and what's interesting -- just five seconds before, I also saw the AMBER Alert on a highway sign," Ojeda-Zapata said. "They're doing it right. You can't ignore AMBER Alerts these days."

When the mobile alerts went out, more than 110 billboards across the state also displayed the AMBER Alert information too.

**Just under an hour after the AMBER Alert was issued, Minneapolis police had a suspect in custody and were reuniting the boy with his mother.**

"The more people that have that information, the more likely we're going to have someone call with information," said Janell Rasmussen, a Minnesota AMBER Alert Coordinator.

Minnesota Public Safety Commissioner Mona Dohman said, "Wireless Emergency Alerts are another important way to ensure the public receives vital information right away, wherever they are."

-- [Minneapolis teen awarded for reporting AMBER Alert suspect - KMSP-TV](http://www.myfoxtwincities.com/story/21303100/minneapolis-teen-awarded-for-leading-police-to-amber-alert-suspect#ixzz2Mh9WBwdt) <http://www.myfoxtwincities.com/story/21292496/emergency-alerts-cell-phones-abuzz-with-wireless-alerts#ixzz2Mh6pxN9z> <http://www.myfoxtwincities.com/story/21303100/minneapolis-teen-awarded-for-leading-police-to-amber-alert-suspect#ixzz2Mh7r7EIV>

# RECENT EVENTS



## Super Storm Sandy

**“This Emergency Alert just popped up on my phone. Ten seconds later, the TV went out. Here we go...”** — Heidi N. Moore, October 30, 2012

**“COOL TECH: Loud alarm and screen alert about [#sandy](#) making landfall in NYC.”** — Sree Sreenivasan, October 28, 2012

**“As Hurricane Sandy headed for the city two weeks ago, sirens began ringing on some New Yorkers’ cell phones. The alarms were accompanied by messages telling them to stay inside; not to drive; or for those in Zone A, to evacuate. -- New York Times, November 9, 2012**

**The emergency alerts showed up where and when they mattered.”**

-- O'Reilly Radar, October 30, 2012



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# RECENT EVENTS

## Tornado in Elmira, New York July 26, 2012

“We put out the early warning, people got notice and knew what to do when a tornado approaches. The damage was bad, but we’re happy that no one got hurt, so that’s a success story we feel pretty good about. The more ways we can get the information out, the better the chance people have to be warned.”

– Local NWS Spokesman  
Star Gazette, August 1, 2012

“Your warning of a tornado imminent in my area of New York, sent 7/26/12 via text message to my cell, was invaluable! From the bottom of my heart- THANK YOU National Weather Service!”

– Citizen Post on Facebook  
FCC Blog, August 30, 2012



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# Technology Demonstrations



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# University Presenters Introductions

# University Experts' Presentations on Assistive Alert and Warning Technologies for Americans with Access and Functional Needs

- ▶ Universities play a vital role in assisting the development of new alerting technologies, including those for Americans with access and functional needs.
- ▶ IPAWS is building relationships with many universities across the nation and working together to provide alerts and warnings for the Whole Community.



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# Presentations by Industry Experts, Q&A, and Demonstration of Assistive Alert and Warning Technologies

- ▶ Four academic leaders will present their university's projects, accomplishments, and technologies for Americans with Access and Functional Needs:
  - Rochester Institute of Technology, Mr. Bill Clymer
  - Temple University, Ms. Jamie Prioloi
  - Galludet University, Dr. Christian Vogler
  - Georgia Tech Research Institute, Ms. Leanne West
  
- ▶ Questions and Answers
  
- ▶ Demonstrations of Assistive Alert and Warning Technologies



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# Rochester Institute of Technology

**Mr. Bill Clymer**

**Associate Director, Center on Access and Technology, National  
Technical Institute for the Deaf**



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# NTID/RIT Strategies Assistive Alert & Warning Technologies

Bill Clymer

Associate Director

NTID Center on Access Technology

March 29, 2013

# Goals

- Description of RIT and NTID
- RIT Emergency Strategies
- NTID Center on Access Technology (CAT)
- CAT Research
- RIT/NTID as R&D Environment for Emergency Communication
- Questions

# Rochester Institute of Technology

<http://www.rit.edu/overview/at-a-glance>

- Nine Colleges
- 17, 652 Students
- 3,756 Faculty Staff
- Technology Programs
- Diverse Community



# NTID Background

<http://www.ntid.rit.edu/about>

- Founded in 1965 by Congress
- 1,281 Students
- 200 Faculty, 300 Staff
- Communication Support



# NTID Instruction

- Direct Instruction
  - Approximately 500 students
  - Faculty sign and teach
  - Small classes
- Supported Instruction
  - Approximately 600 students “cross registered”
  - “Mainstreamed” classes with other RIT Colleges
  - Interpreters, Captioning, Notetaking, Tutoring

# RIT Emergency Strategies

<http://emergency.rit.edu/>

**R·I·T** Rochester Institute of Technology Directories

## Emergency Information

**Emergency Home**

- Public Safety
- Student Health Center
- Environmental Health and Safety
- University News
- Student Behavioral Consult Team (SBCT)
- Critical Incident Management Program
- Emergency Communication Methods
- Emergency Actions and Plans
- Process for Partial/Full University Closing
- Classroom Emergency Preparedness and Response Information
- Student Personal Safety & Security Video

### Emergency Information Home

**Welcome**

Rochester Institute of Technology is committed to a safe and secure learning and working environment. The university has taken many proactive measures to upgrade the level of security on campus.

This Web site should be your first stop for information regarding emergency preparedness and an emergency response on campus. RIT uses a comprehensive approach to emergency management that includes pre-incident planning, emergency response capabilities, a crisis management program, and operational recovery strategies. The approach is tied together with a robust communication system.

This site contains important information and links to both internal and external resources. It is critical to be prepared before an emergency happens, so please take a few minutes to familiarize yourself with this site and explore using the provided links.

Please check it often for updates and new information.

*A message from the president*

**Emergency Numbers**

RIT hotline (for closing information): (585) 475-7075 / 7076 TTY  
On Campus: RIT Public Safety (585) 475-3333 (V/TTY)

**Alert Levels**

**Campus Status**

As of November 13, 2012, all classes and activities are in session.

**National Terrorism Advisory System**



[www.DHS.gov/alerts](http://www.DHS.gov/alerts)

**Connect To RIT Alert**

RIT Alert allows RIT to contact the community in the event of an emergency by sending messages via Instant Message, text message to cell phones, voice message (mobile or land-line) and e-mail. To learn more about RIT Alert, including instructions on how to update personal emergency contact information, go to <http://www.rit.edu/fa/buscont/massnotification.html>.



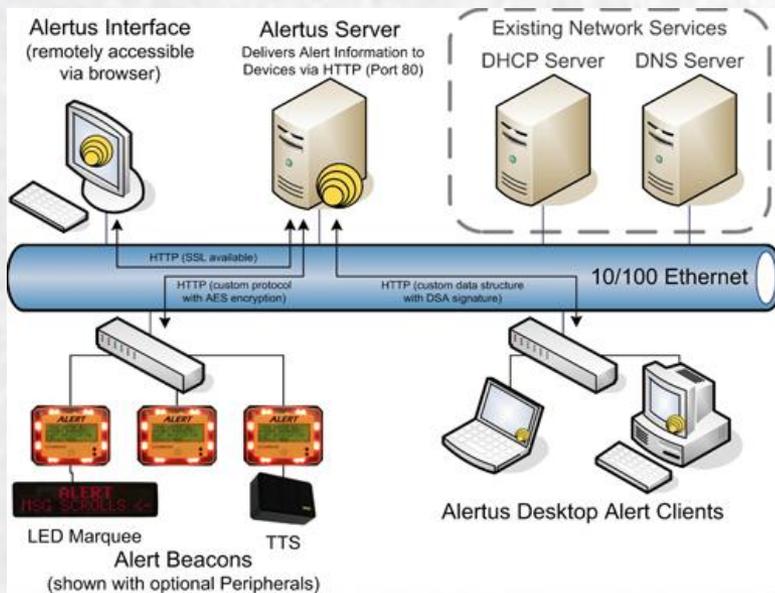
# Emergency Communication Strategies

- The RIT Emergency Mass Notification System (EMNS) allows the University to contact the community in the event of an emergency by sending messages via:
  - Instant message
  - Text message
  - Voice message (mobile or land-line)
  - E-mail

# Alertus

- Plan

- Beacon



# NTID Center on Access Technology

- Cisco Research
  - NG 911
  - TelePresence and Access Services
  - Signing Avatars
- CAT Lab
  - “CAT Claw”

# 911 Issues

- Access to emergency information
- Identify barriers
- NG 911
- Fail-safe systems need to be in place
- Participate in a national discussion and system design

# 911 Activities

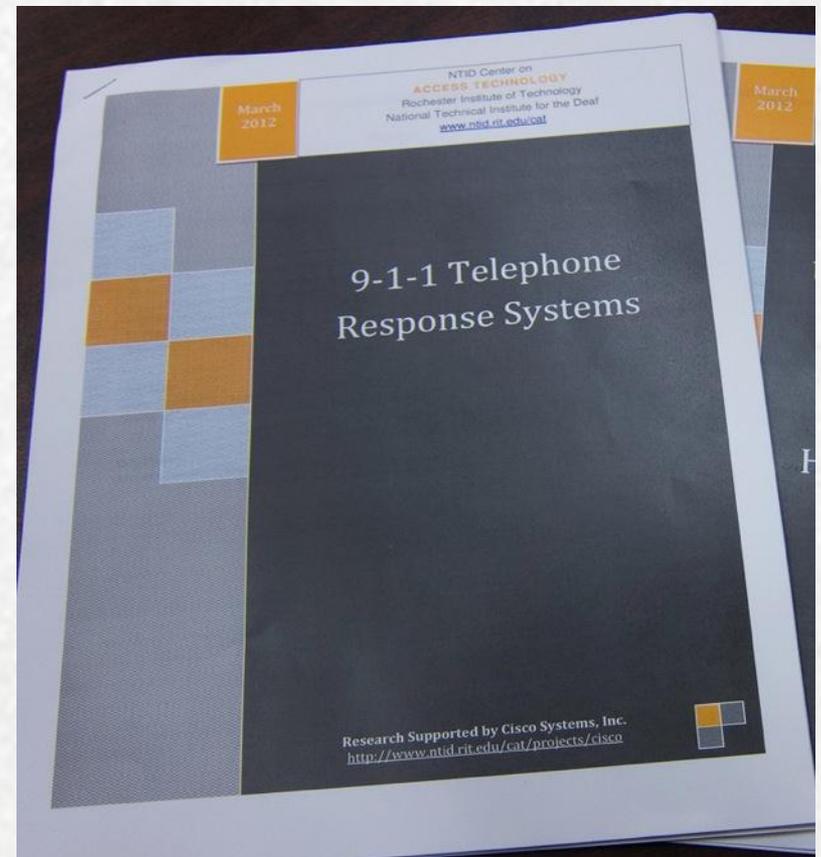
- Research
- Discussion
- Community Focus Groups
- Participate in national discussion



# 911 Recommendations

[http://www.rit.edu/ntid/cat/sites/default/files/NTID-911\\_20March2012\\_Final.pdf](http://www.rit.edu/ntid/cat/sites/default/files/NTID-911_20March2012_Final.pdf)

- Use NTID/RIT as test site for new programs
- Training materials for current 911 materials
- Continue to participate nationally
- Provide guidance to developing countries



# TelePresence



# TelePresence Access

**Different scenarios:  
Size, audience, number of systems**

**Video, camera & audio  
challenges**



# TelePresence Report

[http://www.rit.edu/ntid/cat/sites/default/files/NTID-TelePresence\\_Oct2012\\_Final.pdf](http://www.rit.edu/ntid/cat/sites/default/files/NTID-TelePresence_Oct2012_Final.pdf)

- Results
  - Voice Activated Cameras
  - Display of Local Side
  - Picture in Picture
- Recommendations
  - Technology
  - Communication
  - Interpreting
  - Continued Research

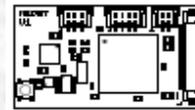
October 2012

NTID Center on  
**ACCESS TECHNOLOGY**  
Rochester Institute of Technology  
National Technical Institute for the Deaf  
[www.ntid.rit.edu/cat](http://www.ntid.rit.edu/cat)

TelePresence Technologies  
with Professional Sign Language  
Interpreting Services:  
Face-to-Face and Remote  
Communication for Deaf and  
Hard-of-Hearing Users

# CAT Claw

- CAT CLAW, based upon powerful microcontroller with Bluetooth technology, can be used for a wide variety of accessibility applications.



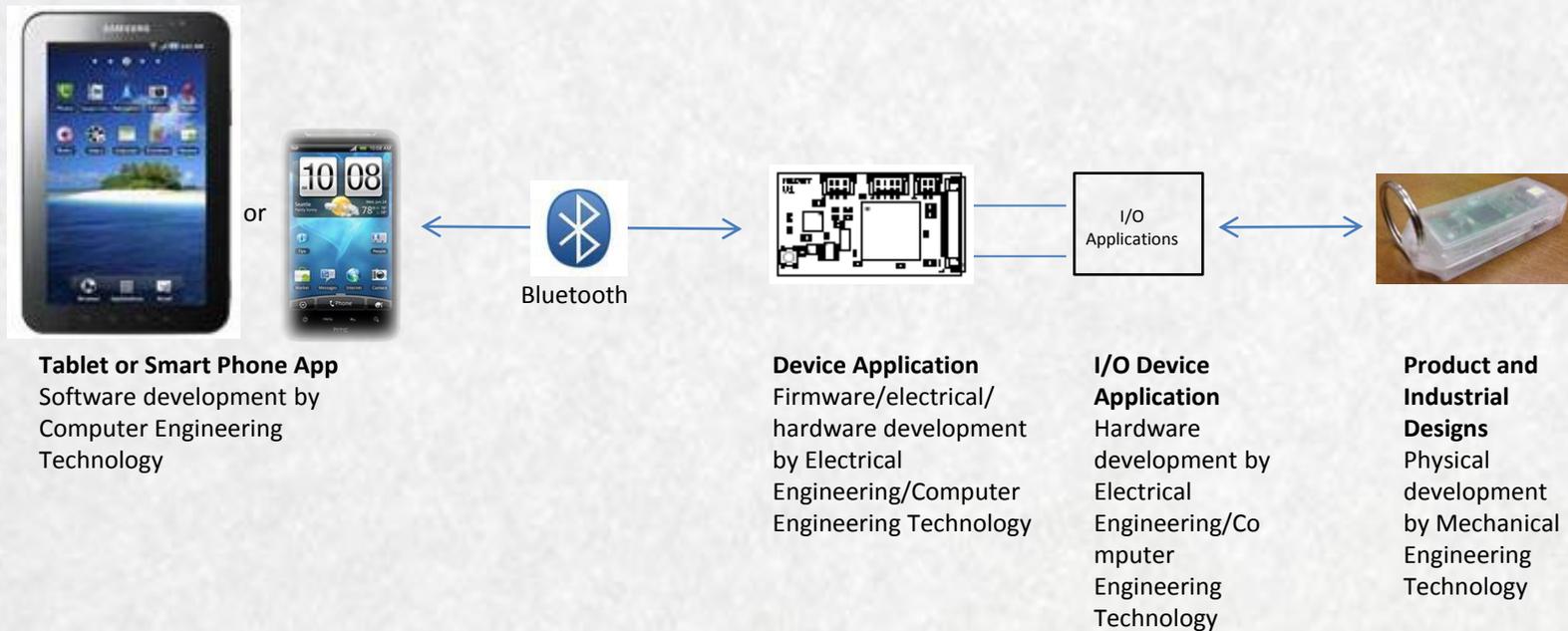
Actual size of microcontroller with Bluetooth and I/O Expansion



Actual size of quarter

# Different Development Options

By RIT/NTID Students/Faculty members



This technology can ultimately be used to improve access to a wide variety of electronic and communication devices, while meeting CAT's mission to develop solutions for individuals who are deaf and hard-of-hearing.

# Conclusion

- NTID/RIT is a diverse scholarly community uniquely positioned to develop and evaluate emergency technologies for both hearing and deaf individuals.



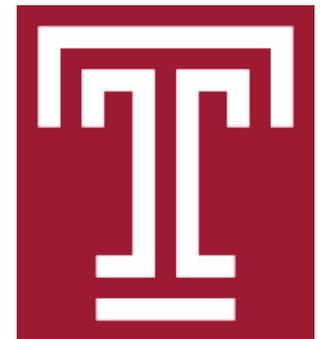
# Temple University

**Ms. Jamie Prioloi**

**Assistive Technology Specialist, Reused and Exchanged  
Equipment Partnership Coordinator (REEP), Institute on  
Disabilities**



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# Collaborative Efforts: Effective Communication for Individuals with Access and Functional Needs

Jamie Arasz Prioli, RESNA ATP  
Program Coordinator, Institute on Disabilities at Temple University

March 29, 2013  
FEMA's IPAWS-ODIC Semi-Annual Roundtable





# Institute on Disabilities

TEMPLE UNIVERSITY®

**College of Education**

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Pennsylvania's University Center for Excellence  
in Developmental Disabilities  
Education, Research and Service

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## VISION

A society where all people are valued and respected, and where all people have the knowledge, opportunity and power to improve their lives and the lives of others.

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## MISSION

The Institute on Disabilities leads by example, creating connections and promoting networks within and among communities so that people with disabilities are recognized as integral to the fabric of community life.



# Today's Discussion

- This brief session will:
  - describe programs at the Institute on Disabilities at Temple University;
  - review current collaborative efforts related to emergency communication solutions for individuals with functional and access needs; and
  - describe future plans related to emergency communication solutions for individuals with functional and access needs.

# Programs at the Institute on Disabilities

- Technology
  - Pennsylvania's Initiative on Assistive Technology
    - Reused and Exchanged Equipment Partnership
    - Assistive Technology Device Demonstration
    - PA's Assistive Technology Lending Library
    - Telecommunication Device Distribution Program
    - iCanConnectPA – The National Deaf-Blind Equipment Program in PA
    - Augmentative and Alternative Communication

# Programs at the Institute on Disabilities

- Advocacy
  - Leadership Development
  - Emergency Preparedness
    - Partnership with Temple University's Center for Preparedness Research, Education and Practice (CPREP)
  - Technical Assistance

# Programs at the Institute on Disabilities

- Education
- Research

For a detailed list of all programs at the Institute, please visit us on the web at:  
[www.disabilities.temple.edu](http://www.disabilities.temple.edu)



# Emergency Preparedness and the Institute

- To develop and execute research, create programs, disseminate information, and deliver services and training to, with and for people with disabilities about emergency preparedness in the home, work, and community.



# Emergency Preparedness and the Institute

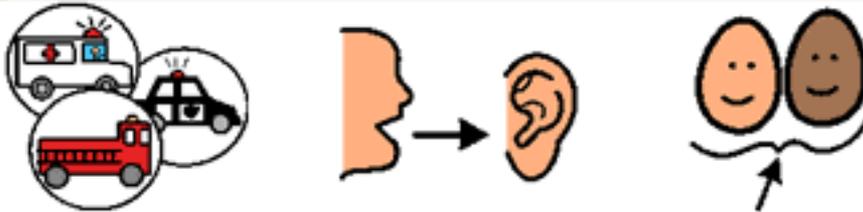
- Collaborative Efforts
  - FEMA Region 3 Summits
  - Assistive Technology Reuse in Emergency Preparedness
  - Temple University's Center for Preparedness Research, Education and Practice (CPREP)



# Emergency Preparedness and the Institute

- Current Activities
  - Emergency Communication 4ALL (EC4ALL) App for Android

Emergency Communication4ALL [1](#), [2](#)



# Emergency Preparedness and the Institute

- Current Activities
  - Emergency Communication 4ALL (EC4ALL) App for Android
  - Low Tech Communication Sheets available for download at [www.disabilities.temple.edu](http://www.disabilities.temple.edu)



# Emergency Preparedness and the Institute

- Work for the Future



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Institute on Disabilities at Temple University  
1755 N 13<sup>th</sup> Street  
Student Center, Room 411S  
Philadelphia, PA 19122

Tel: 215-204-1356 Fax: 215-204-6336

Email: [IOD@temple.edu](mailto:IOD@temple.edu)

Web: [www.disabilities.temple.edu](http://www.disabilities.temple.edu)

Contact information for Jamie A. Prioli:

Tel: 215-204-5974

Email: [Jamie.Prioli@temple.edu](mailto:Jamie.Prioli@temple.edu)





**Gallaudet University**  
**Dr. Christian Vogler**  
**Director, Technology Access Program**



**FEMA**

# **Emergency Alerting at Gallaudet University:**

**Unique functional needs of the deaf  
and hard of hearing community**

Christian Vogler

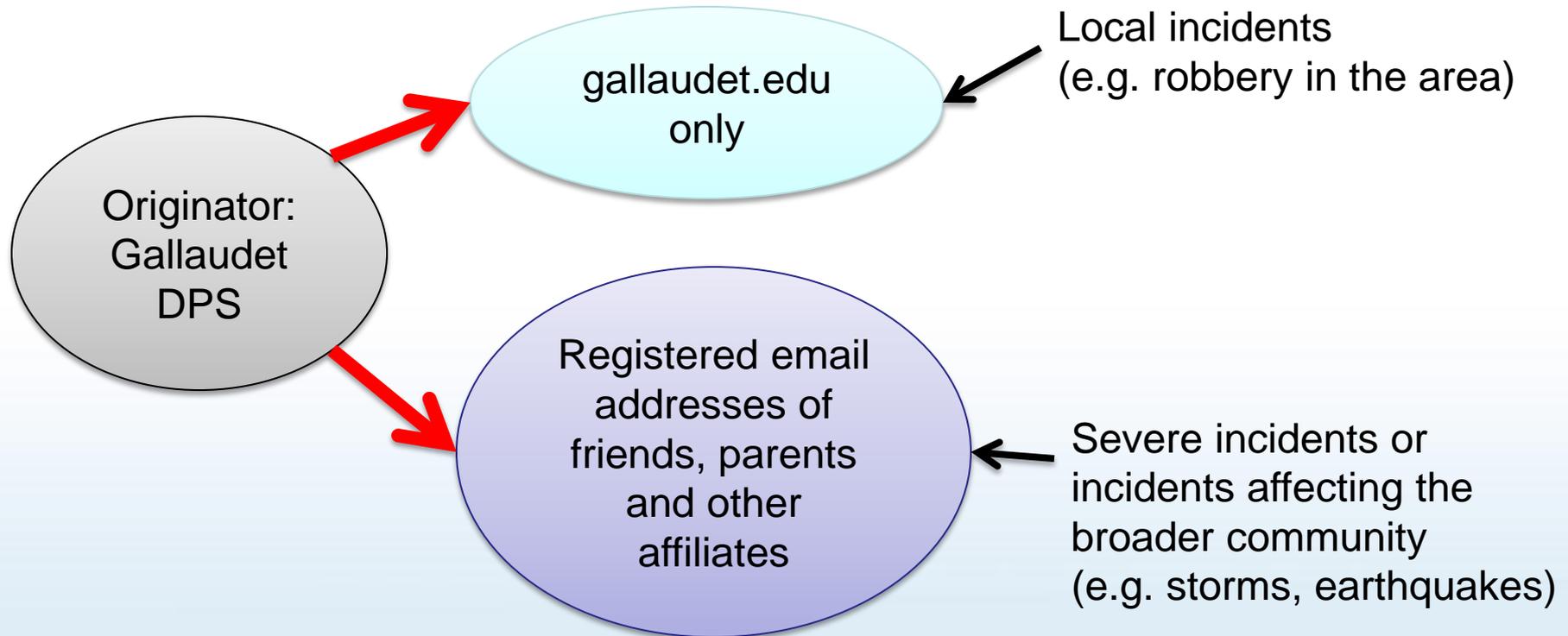
Director, Technology Access Program



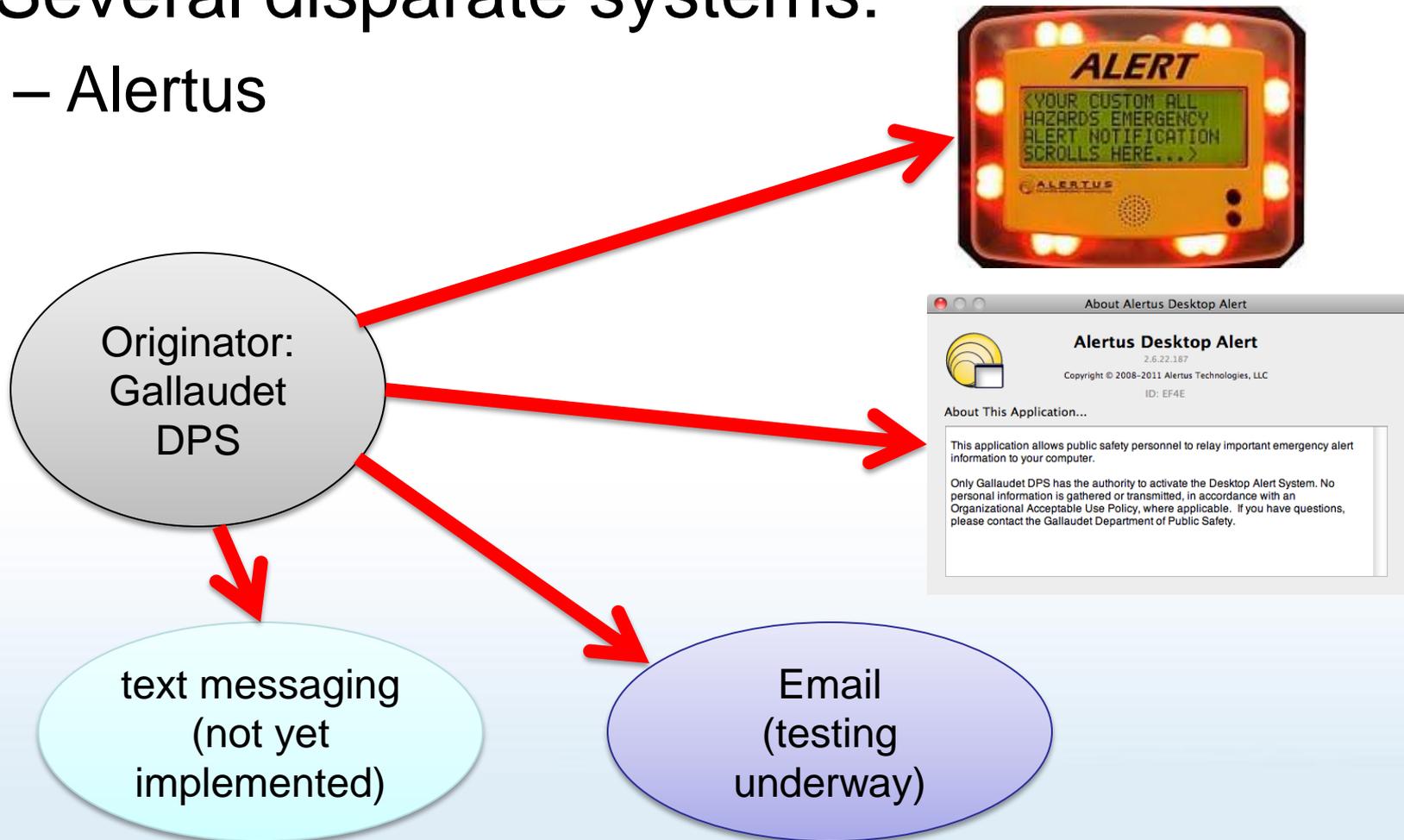
- Available media are not accessible, e.g.:
  - audio-only alerts
  - no sign language or textual information
- Alerting devices are not accessible, e.g.:
  - Some text/video display devices are not accessible to the deaf-blind
- Contents of alert are not accessible, e.g.:
  - **the text is too difficult to read and understand**



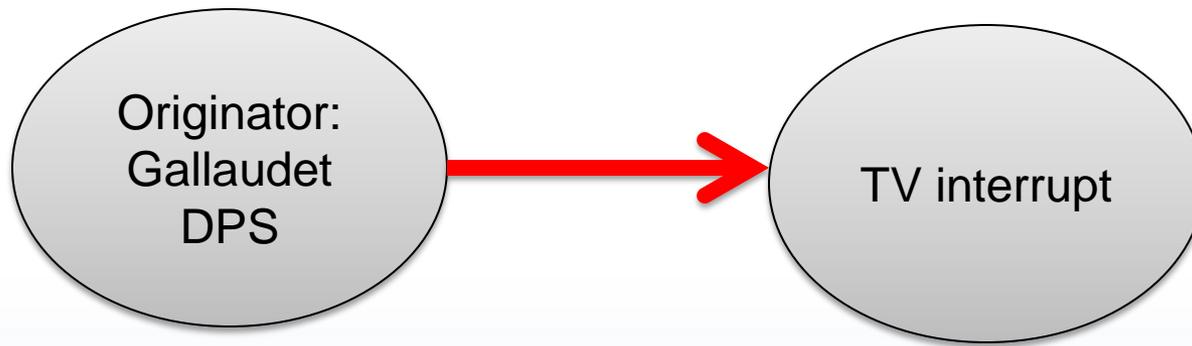
- Several disparate systems:
  - Emails to community



- Several disparate systems:
  - Alertus



- Several disparate systems:
  - Gallaudet TV system



**This process is too complicated.  
Wish for the future: Integration with Alertus**



- DC MPD sends alerts to Gallaudet DPS via email
- DPS reviews the alert and cleans it up
  - This has directly to do with the fact that the contents of alert messages are not accessible
  - If no cleanup/edits, people will misunderstand the alert
- DPS sends out the alert
  - This process also is more complicated than it needs to be

# Needs



- Process needs to be simple on all sides
- Alerts need to be received from an official source
  - IPAWS is exciting
  - But concerns about accessibility of content
  - Cleanups/edits delay alert distribution
- Easy way for Gallaudet to originate and distribute targeted alerts to community
- Alert distribution needs to keep up with systems that people use (e.g. texting, social media)

# Questions



- Questions? Comments?
- Contact me:  
[christian.vogler@gallaudet.edu](mailto:christian.vogler@gallaudet.edu)
- <http://tap.gallaudet.edu/>



# Georgia Technical Research Institute

Ms. Leanne West

Director, Landmarc Research Center



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# Emergency Communications

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FEMA ODIC-IPAWS Round Table  
March 29, 2013

Leanne West  
Principal Research Scientist  
Director, Landmarc Research Center



# Wireless RERC

- The mission of the Wireless RERC, started in 2001, is to research, evaluate and develop innovative wireless technologies and products that meet the needs, enhance independence, and improve the quality of life and community participation of people with disabilities.

- Funded by:



- Partnership between:



# Emergency Communications

- Wireless RERC has done numerous projects focusing on the needs of persons with disabilities during emergencies.
  - Emergency alerting
    - Research
    - Prototyping
    - Field Trials and Focus Groups
  - Contacting first responders
    - Research
    - Prototyping
  - Use of social media during emergencies
  - Captioning at community venues

# Wireless Emergency Communications (WEC) Project

- **Purpose**

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

- **Objective**

- Present key R&D findings.
- Generate policy and research recommendations
- Generate technical recommendations

- **Why**

- Wireless devices that can receive accessible emergency alerts can increase independence for people with disabilities

# WEC Project

- Motivation
  - RERC Survey of User Needs (2009 version) 1600+ participants
  - **85%** use wireless products
  - **77%** state access to wireless important
  - **65%** state a wireless device was important for its role in emergencies

# WEC Testing

- Over 100 participants
- Blind and/or low vision and/or deaf or hard-of-hearing
- Level of experience with wireless devices
  - Technology savvy
  - Mixed ability
  - Infrequent users
- Some testers used mobile phones with custom software, others used standard Blackberry devices



# WEC Testing Formats

- Standard **SMS text messages** and Web pages
  - Essential information in SMS body
  - Link to web page with full alert details
- **Custom software** with enhanced accessibility features
  - **Distinctive attention signals** using audio and vibration
  - Synthesized **speech to read** alerts
  - Automatic identification of SMS message as emergency alert
  - The ability to **override phone settings** that may interfere with the notification of a critical alert

# Findings of WEC EAS Field Trials

- **EAS Trials** (Nine groups at three sites):
- **No matter how they receive the initial notification, the majority of participants turn to television and radio for confirmation.**
  - **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.
  - **Site 2: 81%** of deaf and hard-of-hearing and deaf-blind found the alerts over client software to be an improvement.
  - **Site 3: 92%** of deaf and hard-of-hearing and visually impaired found devices an improvement.
- **EAS Post-field tests:** 83% of people with sensory limitations said receiving emergency alerts via wireless devices was highly desirable.

# Findings of Supplemental Trials

- **Commercial Mobile Alert System**
  - Included CMAS parameters and improvements from previous trials [CMAS AKA Wireless Emergency Alerts (WEA) AKA Personal Localized Alerting Network (PLAN)]
    - Reduction in number of characters, no URL's, varied vibrating cadences.
    - Of those who participated in previous tests **77%** stated it was an improvement over our previous systems.
  - **83%** of persons with visual limitations found the accessible CMAS system to be an improvement over their current source of receiving emergency alerts.
  - **70%** of persons with hearing limitations found the CMAS alerts to be an improvement.

# WEC Focus Groups

- Earlier feedback from Deaf participants suggested need to discuss ASL alerts (ASL is a different language)
- Prototype was created displaying ASL alerts on the phone screen
  - All participants felt that ASL was an improvement over text
  - Some participants felt combination of text and ASL gave them fuller understanding of alert versus text or ASL alone
  - 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.

# Contacting First Responders

- How does a deaf person call 911 from a mobile phone?
  - Answer: They generally get a hearing individual to do it for them
  - 911 does not yet support SMS or other text access other than legacy TTY systems.
    - TTY is a rather obsolete system with a rather large device that connects to a phone and allows a user to type messages and see textual responses on the screen on the device.
    - Many deaf individuals have TTY's at their home, frequently in the closet, although use is higher among older Americans and in rural areas.
    - 911 Call Centers, known as Public Safety Access Points (PSAPs) generally have TTY support.
    - TTY on a phone requires a special adapter and a battery powered TTY be with the user, which basically never happens.

# Text 911

- Prototype software was developed and tested by the Wireless RERC to provide software emulation of TTY on smart phones.
  - System was tested at PSAP's in Atlanta and Orlando.
  - Error rates were slightly worse than traditional TTY over wireless.
  - Solved problems in SMS of lack of geo-location of caller, and conformation of message delivery, as TTY sends each character as typed.
  - Industry was resistant to adding the feature to phones, so the system never left the testing phase

# Text 911

A new initiative of the FCC has now been announced that will allow SMS access to PSAP's.

- Will be available by May 15, 2014
- Still has the drawbacks of SMS. No automatic geo-location, no confirmation of message delivery

# Social Media Use in Emergencies

- Next area of work from Wireless RERC
- Survey of users with disabilities to determine how they use social media during emergencies

# Research Methodology

- Nationwide survey of people with disabilities
- November 2012-January 2013
  1. Contacting 911
  2. Public Alerting Methods
  3. Using social media during public emergencies

## Respondent Profile

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Total number of respondents	1538
Number of respondents with disability	1020
Age range	19-98
Age average	52
Not declaring a disability	370

# Alerting Methods

Method	Percent
Television	55%
Text message	31%
Email	31%
Phone call (mobile or landline)	23%
Sirens	22%
Radio (regular)	21%
Observation	20%
Internet news	19%
NOAA weather radio	14%
Social Media (emergency management)	13%
Direct contact w/someone nearby	13%
Social Media (personal network)	11%
Smartphone App	10%
Instant message/chat	2%
personal alerting device	2%
TTY	0.03%

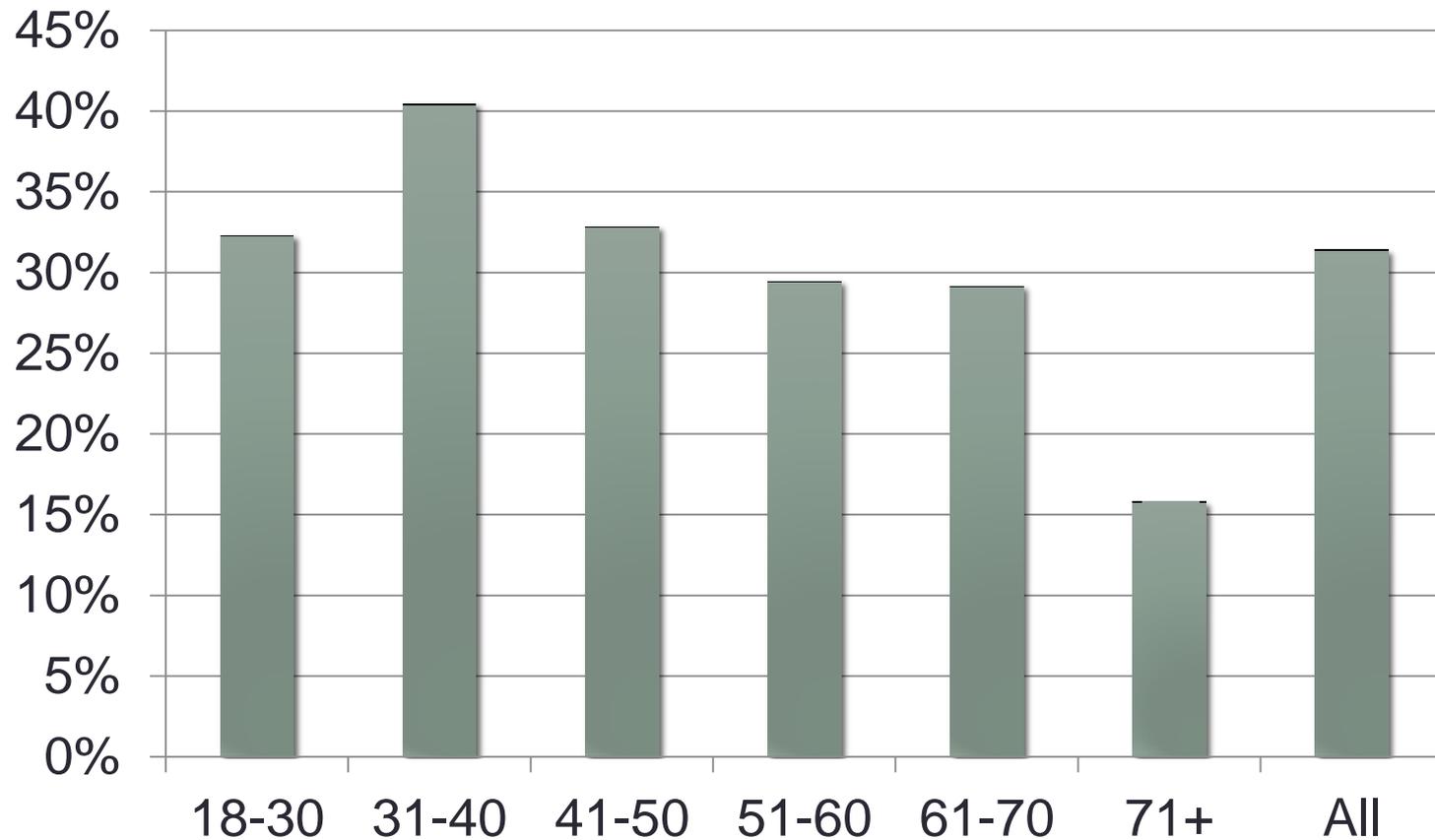
## Social media outlets used by respondents with disabilities to receive & verify public alerts

	Received alert (2010-11)	Received alert (2012-13)	Verified alert (2010-11)	Verified alert (2012-13)
Facebook	11.6%	<b>32%</b>	8.6%	<b>24%</b>
Twitter	4.6%	<b>10%</b>	2.5%	<b>8%</b>
YouTube	1.3%	<b>5%</b>	1.0%	<b>3%</b>



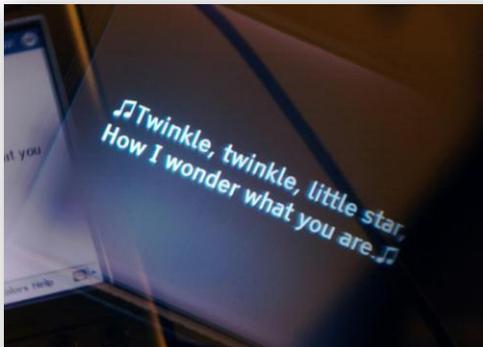
## Active Engagement on Social Media by Age

Percentage of social media users with a disability who have shared information about an emergency in progress on social media



## Wireless Closed Captioning

- Supports Real-Time WiFi Transmission
- Receives captions or real-time information
- Displays on iPhone or Electronic Eyewear



## ADA Compliant Access

- Sustains multi-venue architecture
- Opens every seat to patrons
- Provides multiple languages simultaneously
- Provides access to emergency information



# intelligent Access

Georgia  
Tech

Research  
Institute



## Emergency Mode

- Initialized by checking a box on the server UI, or the captioner sending a character string that the server would decode as the start of an emergency message
- Server automatically sends out the emergency message template opener
- Emergency text shows up in red capital letters on the client (iPhone, PDA, etc.) display
- Once the emergency mode was turned off, a message template closer would be sent and the text would return to its previous color

Twinkle, twinkle little star.

**How**

**THE FOLLOWING IS  
AN EMERGENCY  
MESSAGE...**

**THIS IS A TEST OF  
THE EMERGENCY  
SYSTEM.**



Questions:

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# WEC Participant Comments

- **Positive:**

- Very convenient way to receive alerts.
- Being alerted by cell phone is great because I always have it with me.
- Helpful while outside or traveling.
- This makes me feel safer.

- **Constructive:**

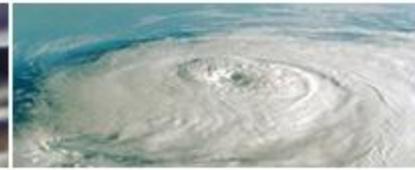
- Continued or “looped” alert message until phone is answered/alert receive.
- Give more information about where to go and what to do (dedicated website).
- It should have a light flasher for visual queues



# Questions and Answers



FEMA



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