

WIRELESS EMERGENCY RESPONSE TEAM SEARCH and RESCUE EFFORT

Presentation to the

Federal Wireless Users Forum



Philadelphia, Pennsylvania

May 14, 2002

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Final Report: www.bell-labs.com/wireless/wert



WIRELESS EMERGENCY RESPONSE TEAM

Mission

*The Wireless Emergency Response Team
was established on the night of September 11, 2001
to provide coordinated wireless industry mutual aid support
for Search and Rescue efforts
at the World Trade Center rubble.*



WIRELESS EMERGENCY RESPONSE TEAM

Outline

- WERT Mission
- WERT Statistics
- WERT Capabilities and Approach
- Key Learnings & Recommendations
- Final Report



WIRELESS EMERGENCY RESPONSE TEAM

Summary Statistics

- No survivors were found
- 33 organizations participated
- 250+ industry subject matter experts participated
- An additional ~500 volunteers staffed the Public Call Center
- 134 Key Learnings
- 23 Recommendations
- 5,039 calls received in the WERT Public Call Center
- 120 reports of a missing person's use of a cell phone or pager from the rubble



WIRELESS EMERGENCY RESPONSE TEAM

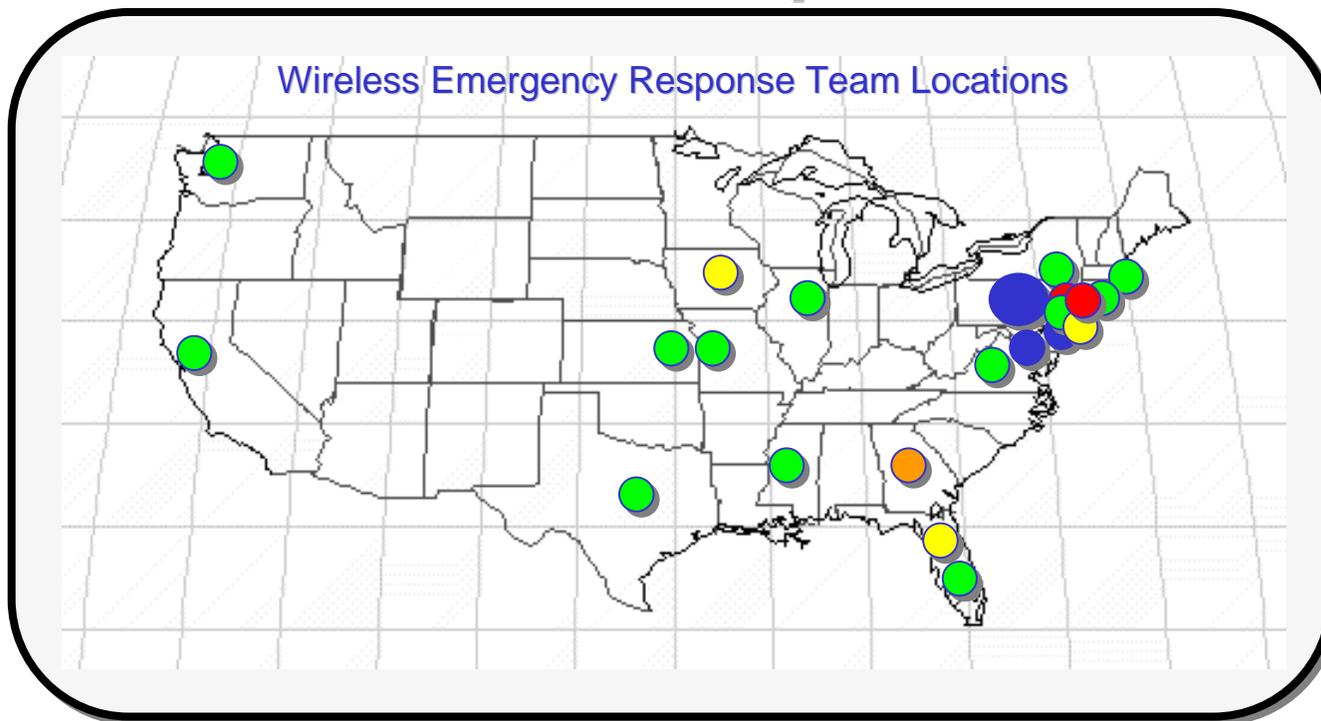
Participating Organizations

Arch Wireless	Metrocall	SkyTel
Argonne National Laboratory	Motorola	Sprint PCS
AT&T	NCS	Telcordia Technologies
AT&T Wireless	NCC	TruePosition
BellSouth	NRSC	U.S. Department of Energy
CTIA	NRIC	U.S. Marshals Service, ESU
Cingular Interactive	Nextel	U.S. Secret Service
EDO Corporation	NYPD	Verizon
Ericsson	NYC Mayor's Office	Verizon Wireless
FCC	Nortel Networks	VoiceStream
Lucent Technologies	PCIA	Wheat International



WIRELESS EMERGENCY RESPONSE TEAM

Locations of Operation



Coordination Command Center

Network Surveillance & Analysis

Public Call Center

Service Provider Intelligence

Ground Zero Locating



WIRELESS EMERGENCY RESPONSE TEAM

WERT Capabilities

- WERT Capabilities, Functions, Approach
 - Coordination Command Center
 - Network Surveillance & Analysis
 - Service Provider Intelligence
 - Public Call Center
 - Ground Zero Locating



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Approach

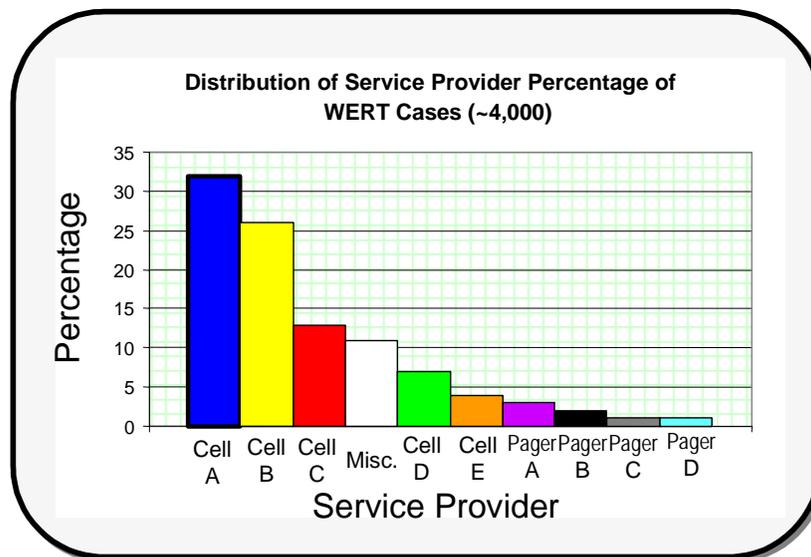
- Mission of the **Coordination Command Center** was to
 - Provide **leadership** for the entire team
 - **Coordinate with authorities**
 - Manage **media** interfaces
 - Facilitate intra-team **communications**
- Mission of the **Network Surveillance & Analysis Sub Team** was to
 - **Look for any activity** on call center list.
 - Registration, Calls, or Text Messaging activity,
 - **Proactively screen 911** calls for false alarms.
 - Identify cell site of 911 call.
 - Look at call and registration history.



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Approach (continued)

- Mission of the **Service Provider Intelligence Sub Team**
 - provide rapid response database lookup information: **associating service provider names**, switch addresses, and tandem homing arrangement information with cellular phone numbers





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Approach (continued)

- Mission of the **Public Call Center** was to
 - Off load calls from 911 command center and other government entities
 - Receive calls and collect information about potentially trapped survivors
 - Obtain cell and pager numbers for missing persons
- The Mission of the **Ground Zero Locating Sub Team** is to . . .
aid and assist in the location of *and* communication with trapped survivors who possess a variety of wireless personal equipment. There is a high probability that victims will have access to some sort of wireless device (e.g. phone, pager, FOB, etc.). This provides a unique opportunity for passive remote location and establishing a wireless link for remote communication



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Key Learnings - Examples

- What Worked Well
 - high commitment of professionals/organizations in mutual aid
 - pre-established federal coordination function of NCC
 - ability to conduct rapid research
 - Adapted fraud, billing and trouble shooting tools to quickly screen call center list and 911 calls.
 - Provided guidelines via text messages for preserving battery life
 - Provide extended network coverage into debris field using RF. repeaters, autonomous basestations, and basestation simulators.



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Key Learnings - Examples

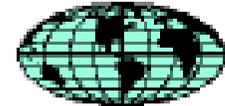
- Areas for Improvement and Further Investigation
 - pre-defined **processes**, **definitions** and **templates**
 - broad **language translation capabilities**
 - guidelines for **communication with a trapped survivor** between detection and location
 - **special instructions for 911 centers** for handling wireless callers
 - Handling **911 calls from a 3rd party**
 - **Identifying Search and Rescue mobile phones**
 - Use of **text messaging** to communicate with a victim
 - Would the techniques learned work in **another disaster scenario**
 - The possible addition of an **emergency mode** for mobile equipment with extreme low-power and **location beacons**



WIRELESS EMERGENCY RESPONSE TEAM

Final Report

- Subject Matter
 - Describes Approaches Used
 - Systematically reviews Key Learnings
 - What Worked Well - Areas for Improvement - Areas Requiring Further Investigation
 - Presents Recommendations
- Widely Reviewed
 - U.S. FCC NRIC V, October, 2001 USA
 - COM CITELE, December, 2001 South America
 - ETSI EMTEL, February, 2002 Europe
 - IEEE COMSOC: GLOBECOM'01, ICC'02, International, Asia
CQR Workshop 2002
- Available to Public: www.bell-labs.com/wireless/wert





WIRELESS EMERGENCY RESPONSE TEAM

“Take Away's”

- Keep rescue teams from danger by quickly discrediting false reports
- Assuring the public - both here and abroad - that all known technological approaches are being used to listen for any cellular or pager communication being sent
- Documented Key Learnings and Recommendations in the WERT Final Report being studied so that this capability can be enhanced and optimized
- WERT is established as an ongoing capability – can be called on by the NCS or FEMA 7 days/week, 24 hours/day