



State of Texas Deploys Special Needs Evacuation Tracking System



“We live in a 72 hour world, from decision to evacuation. By 36 hours, we want departure hubs set up, personnel trained, links made, equipment ready, and transportation deployed. With TX SNETS, we control the event, the event does not control us.”

– Chief Jack Colley, Governor’s Division of Emergency Management

Situation: Improve mass evacuation procedures

When more than one million people evacuated from Hurricane Katrina in August 2005 and more than 2.7 million people fled from Hurricane Rita the following month, evacuation routes were gridlocked, fuel supplies drained and shelters overwhelmed. Thousands of families were separated and hundreds of pets lost or left behind. The lessons learned from these catastrophic events reshaped the way the State of Texas approached mass evacuation and amplified the need to better assist and track special needs individuals throughout the process.

Solution: Texas Special Needs Evacuation Tracking System (TX SNETS)

In response to the recommendations of a state-appointed special task force, the Governor’s Division of Emergency Management (GDEM) reached out to the private sector. An AT&T-led group of technology providers including Motorola, Radiant RFID and Retriever Software, worked together to create an automated evacuee tracking system.

Called TX SNETS, the system integrates Motorola handheld computers with Geographic Information System (GIS) databases with status and tracking displays, tracking software, barcode wristbands and Radio Frequency Identification (RFID) scanners, and commercial coaches and school buses equipped with mobile Global Positioning System (GPS) units.

Results: Simple process that registers 12,000 evacuees and pets per hour

Wristbands are scanned as evacuees board GPS-equipped buses and again upon arrival at the sheltering destination, updating the information at each point and sending the data wirelessly to a centralized database maintained by the University of Texas Center for Space Research. The TX SNETS solution allows the state to monitor the evacuees’ status, keep family members and pets together, and provide information to loved ones at each stage in the evacuation process.

Products

- AT&T wireless network and hardware support
- Motorola MC9094 rugged handheld wireless computers and XR400 fixed readers
- Radiant RFID wristbands and RFID portals
- Retriever Software tracking software
- University of Texas Center for Space Research database

Partners

- AT&T
- Radiant RFID
- Retriever Software
- University of Texas Center for Space Research

Benefits

- Orderly real-time evacuation tracking
- Efficient registration process
- Up-to-date information from point-to-point



“We didn’t look at it specifically from a technical point of view. Technology had to link with our operation, not the other way around. The requirement had to drive the technology,” says Chief Colley.

Improving the evacuation process through integrated technology

When Hurricane Katrina hit the southern coast of the United States, approximately 475,000 evacuees fled to Texas. More than 126,000 had no identification, 9,000 were special needs individuals, and 2,000 children under eighteen were unaccompanied by an adult. “It was a major relief operation,” recalls Chief Jack Colley, Governor’s Division of Emergency Management (GDEM).

The GDEM invited Motorola and other private sector technology providers to develop an effective, secure solution that would help the state evacuate and track special needs individuals quickly, efficiently and safely. With special needs redefined as anyone who could not self-evacuate for any reason, the numbers of potential evacuees increased dramatically, adding layers of complexity to the challenge. A rapid registration process and a secure method of tracking each evacuee, as well as their pets, wheelchairs, walkers, and other necessities, throughout the entire evacuation process was critical.

Motorola partnered with Retriever Software and Radiant RFID to create an integrated technology solution using Radiant RFID’s customized bar-coded RFID wristbands and RFID portals, Retriever’s tracking application software, and Motorola’s rugged MC9094 handheld computers.

“We worked with about 58 private groups to make this system happen and those groups were essential to developing answers that work in the real world,” Chief Colley says. “For example, Motorola gives us great support from border security to evacuations. They are there when we need them most. We’re dealing with life and death, not proficiency issues, so the technology has to work, it cannot fail.”



The MC9094 provides emergency personnel with true mobility, enabling them to register evacuees on-site.



“Time is the enemy,” says Chief Colley. “You have to help people very quickly. TX SNETS is a very simple process and it works.”



Smooth efficient registration process

The process is simple. Upon arrival at a designated evacuation center, National Guardsmen collect and enter each family’s information into the tracking system using a laptop computer or a MC9094 handheld wireless computer. A rugged device designed for the most demanding, high stress field environment, the MC9094 provides emergency personnel with true mobility, enabling them to register evacuees on-site at the evacuation hub. Data input errors are reduced by a user-friendly software application with a standard template. And the rapid deployment of over 500 handheld mobile computers meant that the equipment would be there when it was needed.

“The contributions made by the Motorola team were nothing less than spectacular,” says Cynthia Rubio, president of Radiant RFID. “Product knowledge, responsiveness and perseverance were huge factors that contributed to the successful deployment of this system.”

Keeping family and pets together and loved ones informed

After the data is collected, each family member is given an RFID wristband with a serial number that matches the record in the database. Pets and physical or medical equipment are given corresponding tags. The information is wirelessly transmitted to the master database housed at the University of Texas Center for Space Research in Austin.

“The scale of mass evacuation demands a new approach to command control and the creation of a system that registers evacuees in real-time at their departure points,” says Dr. Gordon Wells, Program Manager, Center for Space Research, University of Texas at Austin. “One of our jobs (at the Center) is to track the location, capacity and current occupancy of the evacuation shelters. So tracking the location of the evacuees as they move through the process and monitoring bus locations through GPS technology was a natural activity we could expand on.”

Tracking enabled by wireless devices

National Guardsmen also use the Motorola handheld computers to scan the wristbands as evacuees board buses for transport to the shelters. Before departure, the Guardsmen print out a manifest for the driver to help account for each evacuee after fuel stops and comfort station breaks. Buses are equipped with GPS units, enabling the Center for Space Research to track and report their locations and speeds every 30 seconds.

Upon arrival at the shelter, evacuees either walk through an RFID portal or their wristbands are manually scanned, updating their status and transmitting the information to the master database. A printed manifest is then provided to the shelter host. TX SNETS keeps evacuees, their pets, and their medical necessities together and allows family members to contact the Texas 2-1-1 information and referral service to track evacuees’ status and current location.



Taking care of our citizens first and foremost

By the time Hurricane Dean threatened the Texas coast in August of 2007, the state was ready and waiting with TX SNETS securely in place and poised to evacuate 150,000 people on 3,000 buses.

“When you’re dealing with people, not just assets, there is a moral responsibility to get it right,” says Sheila Donnelly, president, Retriever Software. “When the system is allowed to proceed as planned and exercised by Emergency Operations, the information is moved efficiently and accurately and the level of confidence and calmness increases.”

For the state, TX SNETS provides a smooth, efficient process of effectively allocating search and rescue resources for those who for any reason cannot self-evacuate. For evacuees, it means no longer having to worry about losing a child in the chaos, leaving behind a pet, or being separated from critical special-needs devices. For loved ones, it means keeping tabs on family members. And for all, it controls the turmoil and reduces the extreme stress of a mass evacuation.

“We live in a world now where catastrophic events occur, whether man-made or natural,” says Chief Colley. “Our priority is to take care of our citizens first and foremost, and in the 21st century we should be able to do that. We had great support from the private sector and Motorola was one of them in a big way.”



MOTOROLA

Motorola, Inc. 1301 E. Algonquin Road Schaumburg, Illinois, 60196, U.S.A.
www.motorola.com/governmentandenterprise 1-800-367-2346

For more information on AT&T visit www.att.com/stateandlocal, Radiant RFID visit: www.radiantrfid.com
and Retriever Software visit: www.retrieversoftware.com

MOTOROLA and the Stylized M Logo are registered in the U.S. Patent and Trademark Office. All other product or service names are the property of their respective owners.
© Motorola, Inc. 2007