



CASE STUDY

And your little dog, too

'DogBone' RFID tags track evacuee's pets and medical assets in Texas

Problem

In 2005, Hurricanes Katrina and Rita challenged Texas officials' capacity to manage a mass evacuation. The state was already hosting more than 470,000 evacuees from Katrina when they were forced to scale their evacuation to nearly three million people as Rita headed for shore.

When the Rita evacuation was complete, families struggled to re-connect as there was little documentation of the movement of evacuees. And while Texas officials tried diligently to reunite families, there was added stress as people struggled to hold on to critical medical assets like wheelchairs and pets were lost or stolen when they were sheltered separately.

In the wake of that emergency response, the Texas Governor's Division of Emergency Management recognized the need to improve the tracking of evacuees in emergency situations and put a team together to create a solution.

The University of Texas Center for Space Research led the state's effort to create the Texas Special Needs Evacuation Tracking System – the country's first statewide citizen-evacuation system. They contracted with an AT&T-led group of technology providers, including Austin, Texas-based Radiant RFID, to deliver a system providing real-time information on evacuees.

Solution

The Texas Special Needs Evacuation Tracking System design uses a variety of technologies including GPS and RFID to track the process of evacuation and sheltering.

RFID tags are central to the system; they are placed on evacuees, their pets and essential medical assets and tied to a database to report on every milestone in the evacuation, including transport along the evacuation route. The tracking allows the state to manage the evacuation, respond to inquiries from the public and reunite families in the wake of a disaster.

There were a series of full-scale exercises in 2006 and 2007 to refine the system and select the best components for the design. As the Special Needs Evacuation Tracking System was still in development and testing in August 2007, Hurricane Dean arrived to challenge the team.

Radiant RFID turned to Mason City, Iowa-based Metalcraft to quickly produce 50,000 barcode tags to support the deployment against the hurricane threat. More than 3,000 tags were delivered within 24 hours; another 5,000 were in Texas in 48 hours. Dean never made landfall in Texas, but Metalcraft had demonstrated its value.

“Metalcraft is a converter of choice,” said Kenneth Ratton, VP of Sales & Marketing with Radiant RFID. “I can count on them to turn orders around quickly.”

As Radiant continued its work refining the RFID components of the Special Needs Evacuation Tracking System, Metalcraft was asked to develop an RFID tag to support the tracking of pets and personal medical assets.

Personal medical equipment, such as wheelchair can be misplaced during evacuations. RFID tagging of these assets and association with the owner in the evacuation database ensures misplaced items can be quickly matched to their owners.

Pets are an important consideration in a mass evacuation, and RFID tags benefited their evacuation in two ways.

First, animals are usually sheltered separately, and some evacuees are reluctant to leave their homes for fear of losing their pets. RFID tracking to assure against lost or stolen animals is a strong incentive for people to leave a dangerous area.

A second important consideration is the safety of the pet handlers; pets under stress and in an unfamiliar setting can be agitated. The ability to use an RFID scanner outside a pet’s enclosure is safer for keepers and animals.

The RFID tags Metalcraft developed used a standard product construction, modified for Radiant RFID’s requirements. The design used UPM Raflatac UHF Gen2 DogBone inlays and holepunch fastening to create a rugged, economical product with an eight-foot read range.

“We got to take our common engineering and add a lot of value for this project,” said Metalcraft president Steve Doerfler. “The result was a very economical RFID tag that met the requirements, and we delivered it quickly.”

Result

Thanks in part to the work of Radiant RFID and Metalcraft’s RFID tags, the Texas Governor’s Division of Emergency Management can better support the evacuees and their families during a crisis.

AT&T’s team, in partnership with Texas agencies, has created a simple, RFID-enabled process capable of registering thousands of evacuees, pets and medical assets per hour and tracking them through all stages of an evacuation.

Evacuees gain the peace of mind in knowing they no longer need to worry about losing a family member, pet or critical medical device. And everyone involved in an evacuation benefits from better visibility and control during a mass evacuation.

Repeated evacuation simulations and the response to the threat of Hurricane Dean have demonstrated that Texas can safely and efficiently evacuate citizens in the event of any large-scale man-made or natural disaster.

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