

**2010 Homeland Security S&T Summit  
South Central Region  
LIVE INTERACTIVE WEBCAST  
2/09/2010 FROM LOS ALAMOS NATIONAL LABORATORY**

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**PANEL: "The Role of S&T in Natural Disasters"**

**David Martin**

**Texas Task Force 1**

**"How Technology Tools Help Rescue Response: A State Perspective"**

**MARY HANSON**

What we're doing next is a panel in discussion on the role of science and technology and natural disasters. This is a huge subject and how will we address it in a 40 minute block? We tried to give a federal and state and in partnership perspective and then at the end a presentation on aid on eight middleware that everyone wants to know about people we have brief bios so I will not read much about these four. First of all, is a David Martin. We met in Texas and he will talk about the search and rescue tools that he has had a lot of experience with hurricanes recently and we hope to bring Haiti our most immediate natural disaster and he will be followed by three folks that are from DHS S&T.

David Martin is from the Texas task force and is also an adjunct professor at Texas A&M dealing with search and rescue training. Thank you for coming up from Texas although I do not think Texas has any snow or ice right now.

**DAVID MARTIN**

I am David Martin and I want to say for the benefit of the first responders listening in on the Web cast I ate more closely identify with you guys than all of the people who are well versed -- I more closely identify with all of you guys. To put in in perspective I would much rather been looking at a seven alarm fire right now with no permanent whether the oh water supply been looking at issues with technologies. However, I have had the upper to the thank you do some -- have had the opportunity to do some R&D and have really gotten to not only further that relationship which people doing the R&D but to utilize the technology that has come down. I have a short amount of time. I want to talk about some of the challenges that we encountered with speed and some of the tools that we used to overcome those challenges. Texas Task Force 1 is one of the FEMA task forces that was developed in the late '80s so they have only been around for about 20 years. Texas Task Force 1 has responded to a number of the major disasters in the last few years including the World Trade Center, a space shuttle Columbia disaster, Hurricanes Katrina, Rita, Ike. So we have had a lot of opportunity to get experience. Partially because of the cause of our location we are utilized almost any time that there is a disaster in the Gulf region. The state of Texas also claims us as one of their research and rescue aspects so if they decide, we got you first then that is the role that

we are going to find ourselves in any disaster involving the state of Texas. We have an elaborate training curriculum and facility at Texas A&M. And because of the amount of training that we do there and the fact that we train Urban search and rescue and rescues from all over the world a lot of people in the process of developing technologies brings them to Texas A&M for evaluation. We not only provide the training there at the campus -- we not only provide the training there at the campus we provide training on site there as all.

Hurricane Ike. This was the storm that was coming in and thank goodness the FEMA and the state of Texas did not look at this just in terms of wind speed and making their advance preparations. At its peak it was a category four storm that did not make landfall at the level of wind intensity, however, what he showed us was that a category two could be very devastating because of the size of the storm. Over 450 miles in diameter and the amount of the storm surf that it brought with it. Fortunately or unfortunately as we were looking in preparation for staging of resources for this storm things changed as we got closer to land and as you can see represented here the projections were all over the place. But we benefited from the relationship that we have with Dr. Gordon Walls at the University of Texas. And he has done some leading development of the modeling, computer modeling technology in determining size of storms and where the land from -- landfall may occur. One of the real challenge is it's over a wide area. It is one thing if you have a fire or a HazMat incident or a building collapse but when you talk about 5,000 square miles to see real daunting challenge in terms of how we will respond quickly to all of those areas affected. The areas shaded and ratios with the greatest concentration of damage occurs -- shaded in gray shows the greatest concentration of damage. What you see here is all of our -- is Bolivar Peninsula and they were out there trying to get people out of the peninsula did a this is a picture of Crystal Beach before and after. Gives you an appreciation of the devastation that occurred. This is an area that is very low in elevation so there was not any protection for these folks. This is where the resources were placed both by FEMA and the state of Texas. We positioned of these assets so we could get into the affected area quickly after the storm. The challenge for communications. This was the first technology challenge that we face. You have 11 search and rescue task forces out there. 300 watercraft and 1300 personnel. By the -- 5000 square miles and they have been devastated. So how will you communicate back to command and with in the area that you are working with your teams? The technology that we utilized was in set radiophones,

communicators' that used MSAT technology or crossband repeaters so that we always had communication back to command and our teams. I have to see this. I was the branch manager over Orange County. The experience with some of our folks in Galveston was not the same and we do not know why satellites did not work the same down there. Something you need to take in consideration, our technology tool box needs to have several tools in it so you are able to go to a backup plan if you run into trouble. We also have a challenge in terms of search and navigation. There were no street signs and this is Bolivar Peninsula after the storm. You have to be able to find ways in in areas that you have received Intel. There were 911 calls that went unanswered because it was impossible to respond. That is your source of Intel P how will you find the location when the landscape has changed? GPS technology is not just a tool it was

invaluable to us. You also need to be able to give the hornets to your air assets -- coordinates to your air assets and we also utilized satellite imagery. The first time that we use satellite imagery was Katrina when we that imagery from government agencies that was able to give us some real time imagery that shows us areas that are still flooded and areas where we needed to concentrate our research. We used mapping technology as an overlay so that we could give in to these areas. I noticed last week we had people representing task forces from different teams that had gone to Haiti and one of the first things that they said was, we need mapping technology when we go out of country. We also utilize search cameras and you saw some of those in use in Haiti when they were listening for signs of life. We also started utilizing thermal imaging technology for searching for people in storms and disaster situations. And you hear some of that imagery shows the brief field after the storm. It gives you an appreciation of the strength of the storm here could one of the hardest-hit areas was here and where we started doing our recovery was 12 miles away in an area that was a wildlife refuge. The stats. We did over 9,000 SAR contact and rescued 3500, 600 by air. It was a category two-point the third most costliest hurricane in U.S. history. 75 folks died and most of those were on the Bolivar Peninsula. We became dependent on technology that is available and we need to have other backup resources available when that technology does not work for us. We have come to depend on it and it has a vital role in rescue response.