

**2010 Homeland Security S&T Summit
South Central Region
LIVE INTERACTIVE WEBCAST
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**"S&T in the South Central Region: DHS S&T
Perspective"**

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MARY HANSON

We launch now into the next segment of our program. Part of it remote and part of it in person. This is when we describe the S and T? [Indiscernible] After that we'll take some Qs and As. I hope we can include the web audience. We know you're out there. But now, from -- introduce by boss and the regional sum it series is his idea. First responder programs -- for DHS. He's been with us for about three years and he facilitates and coordinates with just about everybody.

RANDY ZELLER

Thank you very much Mary. Mary is worried about this so much, that this would come off flawlessly, I haven't had to worry about it at all. She worried about it up until about midnight last night. Thank you all for being here. I'm going to give an overview of the DHSS and T. Resources that are available to you. Resiliency. In my neighborhood, I have a snow blower and when I moved down from new England about a decade ago to the Washington area, I thought I would never need a snow blower again. Ten days after we moved into our house, two feet of snow showed up. It took at least two days to shovel out my 100-foot driveway. I got a snow blower for Christmas. In my neighborhood I used the snow blower to help my neighbors because they haven't gone out and bought one. Earlier this year we had about an 1 inch snow -- 8-inch snow. I used my blower on my neighbors and 3 weeks we had the latest snowstorm. The night before the latest snowstorm it's just beginning to snow and one of the neighbors has come to rely on me shows up at the doorstep with a plate of cookies. He says, oh, thank you so much for shoveling our drive way three weeks ago. We baked these cookies for you. I thought, this guy, I'm resilient. This guy is leveraging my resiliency and making sure I'm helping him tomorrow morning and I did help him, of course.

We're going to give an overview of what S and T is doing for both the homeland security community that we serve, DHS as well as state and local territorial tribal partners. This is our anything and it's -- mission and it's to support our customers. But they exist out here where the action is. We're very much making an over know what's going on at the front. Our new undersecretary Dr. [Indiscernible] Has made it a point time and time again, know what your customers need so we are producing what they need and what they want to work on. This

eye chart shows you where we want to fit in. DHS is a flat organization. Directly to the secretary. Very important position the department only has a small number of undersecretaries and Dr. . O tool pretty business supporting our customers throughout. The transportation, security agency. Customs and border protection. ICE, U.S. citizen immigration service, secret service, FEMA and the coast guard are all our customers. We have connected to them via the integrative product team approach. We have six divisions that focus on the products that go into the field. Explosives comment bio. Human factors behavioral sciences. This is a new peek way of looking at human factors. Not only do we focus on is the ambulance term design for maximum efficiency. We try to come up with models that can actually model hostile intent or detect hostile intent. This was very popular with the office of science and technology. By setting up a committee in the homeland and National Security committee to look at human factors and focus on what traits can we take advantage of in detecting hostile intent. Lastly, we talked about earthquakes a moment ago. Infrastructure protection as you all know 80% of the critical infrastructure in the eyes is actually owned in the private and Sr. So it's quite a challenge for us to deal with our partners out in the communities and we worked through our NPD.

This is how we look at our product development. Certainly the near term is product transition. Essentially we focus on what is in the field? What has already been invented? What can we take advantage of and can we modify that technology to serve our customers?

A great deal of our budget is dedicated in this area. We're looking for solutions in 0 to 3 years. Where which go to our customers is focused in this area. What do you need? What can we get fielded fairly quickly?

We're looking at innovation. 10% of our budget is dedicated to innovation. Innovation is high return investment where we can take some chances and we may be able to produce game changing technologies that could change the nature of what we do. In that innovation portfolio is what we call homework, which is a skunk works. 1% of our budget is approximately in that area. That is essentially pay our technology gists to fail. But we want them to tackle the hard problems, risk, and hopefully the output will be significant break through in some sort of technology.

I have some examples but one very interesting innovation project is the whole notion of a cell phone as a sensor. We made a lot of progress in the program we call cell all to take a cell phone embed a chip in the cell phone for detecting either a chemical agent or biological agent and phoning that in to a central location. Cell phones are essentially equivalent of superer commuturs a decade ago. It's remarkable that we made significant progress to the point that in a few weeks we'll be demonstrating some of that technology on the west coast. Basic research. Our research portfolio supports the innovative product team about where we need to advance the science? Very interested in this portfolio so I see this importance in our strategic plan research to be increasing. This is just an example of some of the things we're doing in the materials area. Certainly blast protection. Being able to design walls that don't collapse in

the event of an explosion. Certainly protecting the inside of an aircraft or inside of a cargo container from a blast is very important. Aircraft skin to be penetrated. Can we do technologies to help in that area? You can read the rest of the list here. Reference for planners and folks that live in this world to make sure that they've got the latest information. We certainly didn't want to -- I have a video clip that shows the rapid levy repair. This yellowed hot doing you see here is inflated and brings on a lot of mass with the water and we've designed this to plug a break in the levy or shore up a levy that might be in danger of breaking. Here is a fairly quick demo. You get a breach. These two gentlemen have created one in this levy. Once you get a breach, as you all know, the River or the estuary or the lake is going to solve the problem of taking the levy out. California alone has 4000-miles of levy. Basically they put aing with in the levy with a concrete base to it -- put a wall in the levy.

This is a levy failure. Here comes our one quarter scale model. It stops the flow. Pretty impressive. We're not sure if this is one quarter scale or 100% scale. We know if we make this more massive we might do damage to the levy. We have partners in California and. [Indiscernible] Concerned about this. The innovation portfolio folks have received phone calls from states saying where do I buy this thing? You can see the value of having some of this readily available. We're not there yet unfortunately, but we're pushing. I mention the office of science and technology policy. Human born explosives. Counter IED subcommittee. Fair amount of time collecting what is going on in the enterprise that worries about explosives detection and so forth. This publication is available online to show a. [Indiscernible] Of what is available out there. This gets a lot of attention certainly from our own office of bombing prevention but nationwide, bomb squads across the country are very interested in keeping track of the latest technology and certainly, we have a website dedicated to it called trip wire that has about 10,000 users that participate in trip wire information.

Here are some of the different devices we have both in development and trying to get to actual production. The multiban radio, which is the ability to communicate fire EMS emergency management and police is already in testing. There's about 50 or 60 radios being tested by municipalities across the country. Gathering data on that. At the end of the demonstration the police or the users don't want to give it back. So we think that's a pretty good indicator that they find this fairly useful. These radios cost about 4000 dollars. We know that's expensive. That's \$4000 without a mass market yet. 3D location is always a firefighters priority. We've seen that in -- close on some of this. There's some private or publicly available research going on as well as private research and this is the secret sauce here to track a firefighter down to about a meter accuracy so you know what floor they're on. This allows the fire chief to muster his resources efficiently but to also get to a firefighter that might be down and need assistance. Vehicle stopping quick here is a demonstration capability for stopping a vehicle. Customs an border protection have lost agents, a few years ago down in Uma. An agent was run over by a fleeing individual who was laying down a spike strip. We want to prevent that from happening. This is -- turns on the device that can be placed by lawn enforcement and selectively used. We're making good

progress in that area. One of the more exciting areas is this far left thing, the next generation breathing apparatus. You can see the air bottle on the left. I met a number of firefighters that have broken their back on this bottle. Pretty much the same mask and tubing systems are working and this is going into field testing right now. The feedback is -- the weight is about the same. The weight distribution is significant enough with all the other gear on it, they hardly notice the breathing apparatus. It also allows them to get into tight places where the bolt holds them back. The cane issue down on -- the cane offers an opportunity for people trying to get off those bodies of water to hide. CDP has asked us to help them eliminate this cane. It's not a cat real species. We've had moderate success in that area. Top of our triangle is the customer. The customer calls the meetings. The customer controls the money, where we're going to spend the money. Our DHS management is at the table because of acquisition authority. We want them there to make sure that we're taking into account the amount of money available and we can expedite any investments we want to make. The dash line indicates the user is welcome to the table. Question go to the end use to make sure the technology supports our system. In the first responder ITP we're listing DHS agencies but by in large we deal with a working group that consists of 40 first responders around the country that identify what their needs are. Border security. Cargo security maritime security and so forth. These are published on our website. They can see the different innovative product teams. They can see the priorities coming from our customers to get the products out to them. We have a number of laboratories within DHSS and T. You can see those listed heroism plum island does animal research. We're building another facility out in Manhattan Kansas to do animal research. Transportation security lab up in Atlantic City. That's where we do the testing of the equipment in the airports. We have a new facility the national bio defense and counter measures center, which is going to be a place where we can do bio level four as well as support the FBI and forensics. To make sure these are up and running. We've had fair success with these. Partnerships with universities spread all over the country. National labs are included here because they become more and more a partner of ours in research and development that we're doing. We appreciate that relationship.

Hard to find who is really involved in these by looking at their names. You have to go to what website university mix. We've divided out our centers of excellence based on the six divisions. All have supporting centers of excellence outside helping them. We get an awful lot of return investment working with us.

We have the green book which is out that tells the world the capability gaps we have and what we're trying to do to fill them. It's broken down by the 13IDPs. What we try to do is straddle the line between too much information and enough information to get the private sector interested in what we're doing and coming forward with proposals on how to close the gaps. We'll be doing another booklet in the future. You can download this as a PDF file. Let's see, we had some backup. What I want to introduce you a little bit to what we're doing with the state and local tribal part nears in the first sporer communities. Separation between state and local territorial and tribal and our first responder innovative product team. We had to make that division. [Indiscernible] Working group

as possible. The secret sauce in this process is the first responder research development test and acquisition working group. Test and evaluation working group. There's about 40 chiefs of fire. Chiefs of EMS. Chiefs of law enforcement as well as chiefs of emergency management. Come together along with associations and provide us a list of technologies that they say they need in the field. Congress has funded this working group to the tune of. [Indiscernible] As a start and we're about to commit money -- we're looking forward to this as a work in progress. We'll see how this turns out. I suspect this time next year we'll have research underway for first responders. A couple good examples is ambulance safety. Ergonomic res per Ray fors and some other things to help law enforcement in stopping vehicles. I think I'm done. There's alights 1 time for questions and -- a little time for questions and answers. This shows our laboratory alignment. Line up with the different divisions. The DOE labs plus our own labs and NASA has always been a player with us since we began as well as NOAA and working well.

We did get one question. Running a little bit behind schedule. We've got one question from the chat room. There are about 50 out of several hundred that are chatting amongst themselves. One of the -- how do we know exactly what first responders need? You talked to that. Is there anything you want to reeven force?

We went through an interesting process. We held a war game back in June of last year where we invited first responders that we picked. It was to the tune of maybe 40 to 50 including federal responders, plus our own folks from DHSS and T. During facilitated three days, we discussed our process to make sure that we were going to capture valid capability gaps as well as connect properly to the communities we want to protect. We got a lot of good information about process and how to improve the process from that war game. Back in September of last year, we brought in the first responder working group for two days, facilitated capability gap development. At the end of that, we had close to 40 capability gaps and we were able to still those down to three in each area. Where we're focusing is in Emergency Management, fire, EMS, and law enforcement. We've taken those, we've gone to to directory rate looking for solutions coming forward on proposed fixes to some of the capability gaps enwe're close to briefing the undersecretary on how to spend the first batch of money. We've chosen the first responders for their acceptance in their community, the ability to speak in their community, their experience and give us the time we need to work them over periodically on what their issues are.

You mentioned that tribal is included in our outreach. I hope we have citizen. [Indiscernible] In Oklahoma on the line because they couldn't make it in person. We do have a representative of the tribal entities on our first responder working group.

We have three tribal crib fors. We're looking for a territorial partner. I think Mitch and I can going to go gown to Puerto Rico in the near future to represent the territorial communities.

First responder programs at DHS S and T. We'll see if we can get some other questions.
I really do hope to hear from folks like Texas department of safety. [Indiscernible]
Some of you that wrote that you couldn't get here but hope to join the webcast.