



TRANSCRIPT FROM WEBCAST 3/22/2011

DESCRIPTION: FULL EVENT

WHO: ALL

[Music]

>> The Los Angeles Regional ICBRNE project is designed to save lives and protect property by providing near realtime vetted emergency management information to the responder community. ICBRNE integrates existing chemical, biological, radiological nuclear and explosive sensors, consolidates their data and delivers information over shared open standards to remote integrated display software. For its Los Angeles deployment, data from multiple regional agencies instruments is acquired through wireless connections. This wireless detection system is comprised of an off the shelf meter coupled to a WiFi transmitter relaying data through a cellular gateway reproduced and integrated with other alert information utilizing the DHS common alerting protocol. Using this standard multiple vendors easily integrated the CBRNE data into a variety of situational awareness and reporting tools.

>> Welcome to the ICBRNE Program Milestone Webcast. We're here live at the Los Angeles Emergency Operations Center which is the center point for emergency management here in the City of the Angels. Today, we've come to this impressive facility to talk about ICBRNE, Integrated Chemical, Biological, Radiological, Nuclear and Explosives detection. Our web audience out there consists of emergency managers and first responders from local, state and federal government agencies, public health and healthcare professionals, policy and decision makers, military personnel and private sector representatives including infrastructure holders, industry and research partners. Thank you all for being with us today. So what is ICBRNE? How does it help officials with incident prevention, response and mitigation? How has ICBRNE been developed, tested and used here in the Los Angeles area? And finally, how can you apply this capability and the lessons learned to your own region? With the help of our live guests today and some videos we're going to explore these issues. Among other guests we have with us today Teresa Lustig who is the program manager for the ICBRNE program at the Department of Homeland Security Science and Technology Directorate.

[Pause]



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>> So, Theresa in a simplified view what this program is, is it takes readings off of commercial sensors and puts the meter readings onto a common platform so that everybody can access them. All the people, the emergency responders can access these. These can include individual response teams, county level, state level, even national level resources being able to push meaningful information out to expert resources. I mean it's more than an ideal. I mean, this is a fundamental necessity. Many things in today's high tech world it's kind of surprising that this is not already in place. So, the fact is I understand there are no standards, there have been no standards to date, and the most advanced implementation of the concept is right here now in Los Angeles. We've funded this project through the Department of Homeland Security Science and Technology Directorate. This is your program. So, why don't you tell us a little bit about it? How DHS got involved in this whole thing.

>> Sure John, first though I wanted to thank James Featherstone, he's director of the Emergency Operations Center here in L.A. for allowing us to broadcast from the Emergency Operations Center. Now, the program originally had a goal of integrating detection systems that were being deployed throughout DHS to various cities across the country. And it became really obvious from the beginning that if we weren't including the locals in that integration we weren't gonna have a successful project. So, we looked at starting a number of pilots throughout the country so that we can demonstrate integration and in our survey of cities we found that L.A. was very progressive in how they were going about doing integration in their own city. And so, we chose them for their progressive ideas. It also became very obvious in their program that if we were not using their existing equipment with their existing emergency management systems that we were setting ourselves up for failure. So, what we did had to be used with whatever it was already in place with their grant funds. So, we turned to our standards office within Science and Technology Directorate to look at standards that were emerging in emergency management to see how we could leverage those for this program. And I think we--over the past few years we've been very successful in demonstrating that. We've had a number of major demonstrations including--

>> Tell us.

>> Well, it's just been deployed for the Grammy and Academy Awards, also some sporting events and we've actually had a formal large scale demonstration here last



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August that was a scenario with a 10 kiloton nuclear device. So, a very large formal demonstration that we'll talk about later in the show.

>> Excellent. Thank you, Teresa. Well that gives us a good overview. Throughout this webcast we're gonna be hearing from a wide variety of people from agencies who have been involved in this project. You're gonna see the equipment. You're gonna learn a little bit about how ICBRNE works and what it means for the region and ultimately for you. So, let's begin with an animation that explains really the architecture behind the ICBRNE. It will be presented by David Lamensdorf, he is the president of Safe Environment Engineering. He is our private sector partner in this effort. David has been an instrumental figure in this ICBRNE project from the get go. David, let's take it to you and take a look at the animation.

>> Thanks John. I appreciate it. So, essentially I'm gonna veer a little bit off the animation here. We're connecting technologies that really connect a lot of the sensors together and relay that data to any offsite computer or mobile device specifically using the standards that you have mentioned earlier. So, essentially what we're doing is connecting a variety of different instruments together from chemical detectors to biological or particulate monitors to radiological nuclear devices to explosive detectors, pretty agnostic if you will to the sensor itself. And to that we're marrying it with a communications device that allows those off the shelf legacy sensors to tie in with GPS location tracking and a wireless network and essentially what we do is we tie those devices together. So we're connecting the instrument to the wireless device and relaying that data back out over the internet or actually out over any network type connection. I think that's kind of an important point as that it's--we now give these instruments a network to move over. And once we have accomplished that we're essentially as live readings are taken they are displayed instantly back with the subject matter expert at remote locations. We're taking that meter reading and showing it like in the back of the house match up or at a subject matter expert location. And they're reading that in realtime and can see if there is any alarm situation that occurs. And then once we get that data we're distributing it via the standards to offsite servers that are routing and formatting that data into this capped format, this standards format that we'll get into a little bit later and then sharing with a bunch of different applications that remote subject matter experts are using. So, we're looking at devices that create it. Look at CLUE models integrated into sensor data into local maps or national maps, federal systems or even national or local GIS tools. So, a variety of different tools that are using the data in this structured standards format. Thanks.



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>> Excellent. Thank you, David. That really helps. The ICBRNE project really has taken root here in the Los Angeles region. It's been a remarkable program and it's much more than just test level. To start things off we're gonna hear from Capt. Jamie Lesinski who is from the Los Angeles Fire Department and he'll tell us about how his department influences the program here in the City of Los Angeles.

>> Hello everybody, my name is Jamie Lesinski. I'm the captain of the Los Angeles Fire Department. My former title was a Hazmat Task Force commander. In addition, I coordinate the hazmat program in Los Angeles area region. When DHS awarded us a pilot program for the ICBRNE I truly believed it was on the strength of the representation we had from the agencies in showing the collaboration, the willingness to work together. But I also believe that it was due to the diversity of the city itself. Not only do we have the extremely large population that are--we listed as a possible threat on the FBI list. But also because well, we have major international airport, we have the United States largest port bay after New York. Much of the western hemisphere's economy goes through that port. We have the Hollywood. We have special events. One of the programs that we do with the ICBRNE is VIP protection, any of the candidates or elected officials from the president on down who come in there. We work with the Secret Service in maintaining either atmospheric monitoring or crowd monitoring utilizing that off distance detection that we are able to utilize with some of the monitors we have. And to generate it so that an agency can, like the Secret Service, can come in there and be able to capture that information that we have and share that in a realtime event. The simple concept of having the equipment transmit information, the detector is transmitting information back to the squad was that itself it seemed very simple. What we're challenged with is we did not want to just be painted into a corner with just certain equipment. We wanted an open backbone and to do that we had to be able to say if you decided this year that this was the best chemical detector then next year we changed our mind or another one came out or a different technology. That we still would be able to have that telemetry backbone to piggy back on to that detection. That caused for some kind of standardization of how that information was to be transmitted. So we had to come up with what we call CAP, Common Alerting Protocols. We had to come up with a format on how that information would be presented not just the data but format about information about that equipment, when was it tested last, the calibration of it itself. That probably as you're looking at a curve of achievement on the program level this off for quite a bit of time because all that was occurring in the background but at the same time once we achieve that our program start taking off. The vendors themselves of this equipment now saw how important it was. They started now being--they were starting to be motivated to work with the program itself and to create in their equipment the ways to gain, let's say, the access to the information that we wanted. I believe the next biggest challenge will be taking that scientific data and turning it into an operational picture



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guidance based on what? That's gonna have to be based on giving intelligence factors that have to be taken by a variety of experts to say that this unit or this measurement that we're going to do this type of action. Now, but across the spectrum of different agencies some might say we have different threshold levels of their action. So we had to kind of get together and to kind of decide it on where and what and when and then ask the vendors or the software people to work with this on this. We still need more improvement in the biological world. I believe the operations are down on paper. We just don't have the technology for the detection to provide real life timing--it's still a delayed detection in the biological agent world. Again, I want to give thanks to the Department of Homeland Security in supporting us. They provided, I want to say they provided seed money and funding. The program has now gotten to the point where it has to be supported by the local agencies and the local region. Due to that we've incorporated into a working committee, we call the Los Angeles Regional Integrated ICBRNE Network Committee. Again, this is across the spectrum. It's public health, it's law enforcement, it is fire service. We still have that strong commitment from our agencies in this area. We've maintained those same SMEs for the last few years that have been working on this project. We know we're way ahead of the game. When we started reading magazine articles I'm going, "Boy, we were there a couple of years ago." When they're alluding to universal challenges and we said, "Yeah, that was a challenge we have an idea." As I'm closing the interview here I just want to--I looked back and I realized how much of this was such a grassroots program started here with the Los Angeles Fire Department. It started at the users level, they saw need, they looked for their own solutions, they generated that with the increased capability, they saw other challenges. If I were to take this to another city and they were to start the program again, a lot of--they have the advantage of not making the same mistakes, not having to go into the growth pains. I think right now we're at a point where we can walk into department heads and say, would you like to see what's going at an incident, video, data, voice, realtime over the internet or over secured wireless transmission right now? And that common operational picture wasn't initially what we started out to gain but that's where we are. And I think when people see that value right, that sells the program right there. And I think when you start from the top down you get the advantage of one is the funding, two is extremely strong support. Where we basically had to create and show our success to demonstrate our value, I think the program has already has the success there and it's basically to replicate with using the topographical differences or the differences or the nuances of the city but it is the same project.

>> Well, now we're gonna move from the city level to the county level. Now the county of Los Angeles is quite unique. It's huge. It's a large complex region. There're 88 municipalities and unincorporated areas. It encompasses more than 4,000 square miles. And according to the 2010 census, at 9.8 million people L.A. County is the most populous in the United States and a population density of nearly 2,500 people per



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square mile. It's the home of over 250,000 businesses. Now events and incidents that happen here though involve multiple jurisdictions and cross several jurisdictional boundaries. We're gonna hear from the county level both from the sheriff's department and from the county fire department. We're gonna start off with a video interview with Sergeant Mick Kelleher. He is the chemical, biological, radiological and nuclear hazmat specialist from the Los Angeles County Sheriff's Department. Please roll the video. Thanks.

>> Hi, I'm Mick Kelleher with the Los Angeles County Sheriff's Department Hazmat Detail. My team's responsible for responding to chemical, biological, radiological and nuclear instance in Los Angeles operational area. We've been part of the ICBRNE projects for approximately 8 years. We started off small trying to get some type of telemetry to as an officer safety issue. So as we're making entries into contaminated environments someone else would have access to our meter readings and can warn us as our meters are alarming. So we didn't have to pay 100 percent attention to him, 'cause as cops we're hoisting and tactical, don't always wanna be looking down at our meters. From there we start to graduate to can we share this with other agencies out there. We're very fortunate in Los Angeles operational area that we have a lot of hazmat assets that had the need or want to join in on this. So we joined in with other fire departments, other law enforcement agencies and county health departments to come together and share information at hazmat incidents. Start off with just a couple meter readings going with 4 gas and 5 gas meters and we've actually developed into both chem and rad. And now it gives situational awareness not only to local responders, incident commanders but also to federal assets of national labs. As part of the sheriff's department, we're responsible for assisting and security of events of national interest such as the Rose Bowl, Rose Parade, award ceremonies. We've had the chance to use the ICBRNE project during this. It was great to be able to put sensors out and have all that information at realtime go back to our command post to help us give sensor information so we know where to deploy assets if needed. Recently in a large national event of interest which was a football game with over 100,000 people in attendance, we set out the ICBRNE project as sensors outside the fence line. The sensors were out there to detect radiation as it came closer to the stadium. Inside the fence line were search teams with other detectors. The ICBRNE project worked very well on the fact that as the sensor went off, the information was relayed immediately back to our command post who was then able to tell the people out near that area that radiation was coming towards them.

>> I was at one gate at a time when a source of radiation was coming through the gate, not a terrorist event, not a criminal event but just a large amount of radiation was



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coming through. My command post by monitoring the ICBRNE project was able to give me a full minute to minute and a half warning that radiation was coming towards my gate. That allowed me and my team to start scanning the fence line and the gate for any threats and preparing for radiation to come through. As the radiation came through, we were able to determine that it was just a medical patient with radiation inside and not a threat to anyone. Behind me is one of our vessels called Ocean Rescue II. On board we have equipment that's linked to the ICBRNE. It's one of the largest rad detectors in the maritime realm. It's the largest on the west coast. It is hooked into the ICBRNE system so that as this boat is traveling around it streams live data including spectrum back to not only my computer but I can immediately share that information with national labs who can view it and manipulate the data. We also have a chemical sensor on board. So if we get intelligence that there could be some type of threat offshore or anywhere in the operational area, the boat can go out there. As it's traveling around take air samples and let us know if it's a chemical warfare agent or toxic industrial chemicals. It can also provide safety for the people on board to know whether or not they need to have safety mask on. Ocean Rescue II as part of the sheriff's department is only one of several maritime radiation assets in the nation. Talking to other agencies I believe we're the only one that sends live data back to national labs. The sheriff's department decided to invest money into this and assets into this 'cause they felt that the port was a major target. The L.A. Long Beach Port Complex provides access to 60 percent of all imports to our country. If this port complex was shut down, the amount of industrial imports coming to our nation would almost stop. The other ports in the west coast are unable to handle the amount of volume that comes to this port. As part of this, we do joint operations with the United States Coast Guard and customs and border protection. We'll actively go out and search container ships offshore before they get to the port to assure that they're not bringing any threats into the port. The great part about the ICBRNE project was the easy sell to all the agencies. Once you looked at the capabilities and the ease of sharing information, every agency want to buy into it. I've had the chance to travel around the country and see how other people share information, how other devices share information. And I was shocked when I first got in this job that there was no real standards for sending information out from a detector back to any type of communication device. One of the toughest parts about the ICBRNE is that technology is moving so fast, all of our meters had different ways of sending information out. One of the first obstacles to overcome was taking that data and putting it into a meter that could be set out so that other people could read it. After that it was taken care of. Interoperability was great. Every hazmat agency out here now has it so it's multi-agency, multidiscipline. L.A. County Rad Management has many rad mirrors out there that in the event of an incident, an accident or a terrorist incident, they can put sensors out and we would know immediately from wherever--whatever computer I'm at where a radiation plumes out or radiation threat is out. And the same effect that if I'm out looking for radiation, I find it, L.A. County Rad Management would know exactly where I'm at and what my readings are and give me information that can safeguard myself when I'm in a radiation field. Readings on your meter are in microgram, millirem. When



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you get that information if you don't have this type of system giving that information back out to your command post is often difficult. You're trying to read it, you're telling them millirem, they might hear microgram. Communications is often bad over radios. The system was great that there's no longer need for that radio communication going back and forth because we can see it. And I'm just amazed that other agencies throughout the nation haven't embraced this idea that you know instead of relying on someone's eyes to read a meter and then explain it to someone else who has to write it down or play the telephone game, the people at the command post or your instant commander or your team leader can read your personnel's meters immediately. This is great for safety, when to pull people out, or to give them further information of when they can stay in.

>> So now we're gonna hear from the Los Angeles County Fire Department. They have a special Homeland Security Division that includes the responsibility for hazmat resources. We will hear from Captain Randy Alva who's a fire captain and hazmat coordinator for L.A. County's Fire Department. And he spoke to us from their brand new unique hazmat response training facility where they create highly immersive realistic incident scenarios from freeway tanker spills to manufacturing facility disasters. We'll take a look at the video and Captain Alva will be joining us a little bit little in this show too, live.

>> Hello, I'm Captain Randy Alva with the Los Angeles County Fire Department Homeland Security Section, Hazmat Coordinator. We have interoperability throughout the county. We information share with all our neighboring cities and it's a critical part of what we do. If we're having a major attack where we have multiple attacks throughout the county we'll be able to information share with everyone throughout the county just by looking at a simple screen and being able to coordinate our mitigation throughout the county, as well as that we are able to train together and training together is a critical part of mitigating all emergency hazards. Part of this program is so viable that it will either save a firefighter's life, a first responder's life or the citizen's life and that's why information sharing is so critical to us. And this is the venue to do that. The type of information that we share are things like LELs, what type of atmospheres we're in. It's real time. We're able to glean information what--not only our guys are doing as well as other people are doing and we may see something that they don't or we may be able to give them a heads up on how to mitigate their scenario or their emergency that they're at. Many emergencies are--can be terrorist driven but they could be a simple mishap on the freeway. For instance, what you have here is a tanker truck that's overturn on the freeway and we'll have our realtime sensor giving that information out to all our neighboring players that we have throughout the county and we may bring them into the



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scenario. If this gets larger they'll already have a heads up on what to do and how to do it because they've been information sharing with the meters. Not only LEL but just knowing where a safe place to be is critical.

>> So this, the whole idea here is that this is a compromised flammable liquid or gas and obviously, it's found in the ignition point and so it's all about mitigation and this is where the meters come in since they could essentially set up a plane as to what kind of toxins do we have in the area.

[Noise]

>> So they may be pulling up knowing that our meters are getting positive caustic fume that's headed a certain direction. They'll know just to come in from the other direct-- opposite direction that is critical to all of our daily operations. Los Angeles County we cover 4088 square miles. We have four hazardous materials teams at all times 24/7 for responses as well as a Department of Homeland Security section that responds. All this contributes to our ability to exchange information and have a common operational platform. This is what interoperability is all about.

>> Thank you captain and I look forward to having you join us live here in the studio in a little while, in the studio, in the EOC. We have one more video interview for you. This one is from the perspective at the state level. The California National Guards 9th Civil Support Team who provide field identification of chemical, biological, and radiological agents in support of local operations. This video is from Lieutenant Shane Foss [phonetic] who is a survey team leader from the 9th CST. Let's take a look at the video.

>> Good afternoon, I'm Shane Foss with the 9th Civil Support Team out of California. I'm the survey team leader and we're gonna talk about the ICBRNE project here that's happening out of L.A. County. The California National Guards Civil Support Team has 57 teams across the nation and California has been fortunate enough to be part of the ICBRNE project where we are given the capability to bring our equipment into a common operating pitcher with a piece of equipment that we call the Lynx [phonetic]. And what this piece of equipment allows us to do is take the realtime readings and bring



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the results and put them back into a common operating pitcher. So when a survey team goes down range and they actually do their sampling or detection, they will in essence get a reading and that reading will get pushed back to the common operating pitcher for further analysis. Originally, all I ask for was can I have the capability to pull realtime radiological spectrum back out of that zone. Up until this point we had to send a team down range, pull the data and continue their hazmat operations, come out of the zone, then we plug in the equipment and send it up for analysis. Meanwhile, we haven't been able to give our recommendations or advice to the incident commanders. What this has enabled us to do is instantaneously pull realtime readings of radiological spectrometry back out of the zone and send it up for analysis. So the ICBRNE project allows for strong interoperability with not only our equipment but the equipment of the other agencies. The California National Guards 9th Civil Support Team being a state entity when we get called out to support the civil first--emergency first responders when we bring our equipment to the table we have the same capability to bring our data and push it back up to the command post for their ability to interpret and analyze the data. So we become an extension of the incident command system. As more developing detection equipment comes out, this technology will be integrated into the equipment and it will hopefully become one of those specification requirements for future operations of this equipment.

>> Thanks, lieutenant, greatly appreciate your taking the time to provide us that video. We're gonna take a short break here and when we come back we'll have some key players in the ICBRNE program right here with us live in the Emergency Operation Center and we'll have some live discussion. We'll see you in 10 minutes.

[Silence]

[Background Music]

>> Welcome back. With me now is Captain Randy Alva who we saw a little while ago on the video from hazmat city which is what they call the hazmat training simulation facility here. Captain, we really appreciate your time to come back out and chat with us live as well as the time you gave us on the video, greatly appreciate that. And of course we've got Teresa Lustig who is our program manager with Department of Homeland Security Science and Technology director on this project. Well, captain, we know that



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interpretability is one of your key issues and so I wanna ask you, what is your experience with this ICBRNE system and how has it been helping in the interoperability area?

>> Well, first of all, thanks for asking me down here for this interview. I appreciate that. This is a very important thing to me. I'm passionate about interoperability. And David has brought this common platform to its full scope and what we've done is inherently, my job is very dangerous. When you get into a scenario where you have some sort of unknown substance and you have to go in there where everybody else is running out, it's not a good day. So when we can information share we could support the team that's going in there. Not only support them with information of what they're going into but also note if something happens in there and one of those guys go down, who we can send in at what time. What kind of PPD is it? What I mean by PPDE is a personal protective devices. So we may need a paramedic in there. We may need to affect a rescue. We may need to send other guys with expertise such as USAR or other hazmat specialist that have weapons of mass destruction training. So, the interoperability part is a key, key part of what we need to start training on not only L.A. County Fire Department but as well L.A. City Fire Department which already embraced that and started preparing for the bad day. So what we're looking at is training together using David's common platform of information sharing, preparing our guys and preparing for that bad day as if it could happen today.

>> Well, this is a really important issue because there's been so much money that's been invested in creating the communications infrastructure that police forces and fire departments and all these entities already have out there. And we can't just go and replace everything. So this interoperability issue is really critical being able to have everything talk to each other.

>> Well, not only, I'm glad you brought that up because not only does it help supporting our own guys but we could information share with our executive staff on why it is we're doing what were--is it getting better or is it getting worse? If it's getting worse, they could pre-plan and get some sort of support going to help us down the incident. It could be days, weeks, months from now. And also as you all know it's not only for that bad day where we've been hit by another bad people as they say. But also a natural disaster such as Katrina, Haiti, recently Japan. We could use this interoperability in those venues.



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>> That's excellent.

>> Can you tell me a little bit more about how the ICBRNE program has been utilized in your training center and give us an idea of what you're doing at the training center?

>> That was quite an impressive center too.

>> Thank you very much. Again, that's another passion of my mine is the training center. You know, we all practice as if we're getting date. You have to be prepared for that bad date. So what we established up in Del Valle Training Center is a 200 acre hazmat city USAR city, swift water, all the special operations that we don't do everyday. By having the center what it does is it raises the bar not only of training but of interoperability and be able to information share as well as other agencies incorporating with our training and learning. They may do something just a little bit better than we do. We may do something just a little bit better than they do and we could all grasp that information and take it back with us. Also, for that bad day, we'll know what they're doing and why they're doing it if we practice together. So it's crossing those boundaries that--those brick walls that were up 20 to 30 years ago, knocking those walls down and shaking hands across that border in practicing as if that bad day is here. So, part of the beautiful prop that we have in the property is we have a 4-lane freeway which you saw on the video and you have an overturned tanker. It's leaking. We have about eight different leaks that we could put from the tanker itself to the subtle tanks that actually are for the truck. So that tractor is able to go up about 10 feet hydraulically and we could place a car underneath it, lower back down. We have--what you don't get out of that video is the audio portion of it. We've got four major speakers all around that freeway and you can't talk to each other without shouting. So we have radio traffic. We have screams from the car underneath the truck. We have screams from inside the truck as well as the fire venues that you saw. That is all hazardous materials that we could portray as weapons of mass destruction. We could have any sort of terrorist event. We could have an IED, an explosive device underneath that truck or trailer. We could have--we could scenario play just about anything we want. Just getting to the venue we have cars all around. If the fellows just park their vehicle in the wrong position we could stop right then and there, go back into the classroom and explain how their lives could have been taken just by the way they came to the scene or up--went uphill type of thing. So the learning curve is just fantastic up there as well as the freeway prop.



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>> We also have a warehouse. The inside of the warehouse has unknown chemicals, exotic chemicals, hydrazine tanks, dip tanks, acid tanks, everything, leaks. We have piping all above us. The pipes all leak. I'm able to color, of course we're just using water because we don't want to hurt anyone but I'm able to color and dye that water any color I want. The steam that comes off of all those props I can change those colors to any color I want. We could develop scenarios with flammable liquids. And I've got electrical prop where if the guys don't just simple shut off the electricity, they're going into a flammable environment, they could die. So that kind of scenario is just throughout the training center. And on the outside of that warehouse we have what's called a loading dock. The loading dock also has the sound. The--And we hit all the senses except for taste. You can hear it, you can see it, you can feel the heat from the fires and the explosions.

>> You simulated that with me one day and I certainly remembered jumping about 3 feet back.

>> Absolutely. So, and it's progressive. We've devised the training center so that the same person can go up there 40 or 50 times and not have the same scenario. So we have injects throughout that center and it's been just a fantastic training for everyone. And as I said when we're bringing every--all the other agencies together that in itself is gold.

>> I think that's great too. I just think it's great that they're able to train with the same equipment for this more everyday event such as a truck or a trailer returning as well as you know, something that's rather unusual and unexpected like you know, some type of terrorist event. And that they don't have to pull out different equipment for something that, you know, might happen versus something that they're using everyday. I think it's just great that they can have that dual training.

>> Everyday application.



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>> And these are low frequency events but if you don't train and get very, very professional at these events.

>> One of the things you mentioned, captain. And you hit on it like in a couple of different scenarios in the training center is the high noise volume. That high noise factor as we know is very difficult for verbal communications to go back and forth. So, if you've got a first responder out there who's got a sensor, who's got a meter on in some way, shape or form and he's trying to relay it back to the command post or somewhere else what that meter is saying and you can't hear him on that, you know, with all that high noise. So, this data protocol that we set up seems to help to overcome that.

>> And that's why this has been just a critical part of our training, the ability to information share with each other. If somebody goes into this warehouse where you know a bad person has released some sort of, you know, chemical. Well, even if they were to fall down we have the information that we--to effect a rescue. Whether it's rapid extraction and being able to run in there and grab, pull him out or actually suiting up for whatever that chemical he's exposed to. And with these meters and how we're able to kinda tether our information from these people inside we're able to expel these to all the subject matter experts in the field and get data back. As well as actual emergencies, the same scenario.

>> Great. Captain, thank you very much for joining us. Greatly appreciate it. And we're going to move forward now and bring in some other folks involved with Los Angeles Fire Department. We're gonna talk about various aspect of how the ICBRNE pilot has been playing out and where it's going here in the L.A. area. I want to first bring out Chief Rob Cramer. Chief, good afternoon.

>> Good morning.

>> How are you sir?



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>> It's still morning where we're at.

[Simultaneous Talking]

>> I'm still on East Coast time and a lot of our viewers is around East Coast time but actually we have people all over the place. We're at about 500 people out there online with us so far today. Just to let people know and I should have mentioned this earlier. If you have a question for any of our guests while here live you can send something in on the chat and we'll try to pick it up from there and then we will ask those questions to our folks. We'll try to do that. Hopefully, the technology is going to be working.

>> Also a lot of people are asking. Is this gonna be online afterwards?

>> Oh yes. And to let people know too this entire webcast is being archived and it will be available right on the same site that you've been--you're on right now. So you can just come back to the same site next week. It will take about a week to render the entire thing and post it up there. But you'll be able to go back full reference and pick up some of the stuff that--so you can randomly, you know, crazily taking notes on. You'll be able to come back and reference these interviews and all the other presentations that you'll see throughout this entire webcast. That should come in very handy I hope for everyone here. So Chief Cramer, thank you very much again for joining us. I wanted to talk to you specifically because you've been a leading voice in advocating for this type of capability. And then you helped to lead this and get other pilot efforts done here so why? I mean what were you dealing with before that made you want this so badly?

>> Well, it is and it was a passion of mine. And it's very simple. I'm gonna go back in time a little bit to the genesis of the idea if you can bear with me. So, we're talking a time period of 1998-99. And at the time I was a hazardous materials task force commander, in fact, stationed at Fire Station 4 which we're next door to today. We had heightened awareness of the potential threat to the country from terrorists and their intent to harm us. We had been doing training on that exact topic. And we were also aware of the fact that indeed there was a site here in Los Angeles that had been targeted, Los Angeles



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World Airport, otherwise known as LAX to most people. So, one night it was after midnight we received an alarm to the airport for what was reported to be a radiation incident so we went out there. I'll make this long story short. Suffice to say, we send an entry team in to get a reading on whatever this was in what had to be the worst possible condition. They were outside. It was night. There was no lighting. They were under the prop warships, 747 cargo planes that were continuing to dock and unload their cargo. And they misread their instruments. And I'll be honest with you, in the retrospective looking at that, how could they not, we put them in impossible conditions. They were looking at the meters through. There was no lighting to speak of. Anyway, long--short of it is from that moment forward I had an interest in finding a way that we could transmit the readings from those handheld instruments back to our apparatus where somebody who's sitting under fluorescent lights with air conditioning can look at the computer screen and say "Now, your reading is this. You're fine." I heard someone mentioned earlier and I think it was you John that, you know, it's surprising that we don't have this already. Well, I was surprised that none of the manufacturers of the instrumentation that was available to the fire service at the time offered that capability. We will transmit it back to you. Well, there was one but it wasn't available, broad base. We had a number of manufacturers that we're having to deal with. So, one day I was reading some literature and came across an advertisement for somebody who was doing that on site for fixed facilities. That led to the introduction to David Lamensdorf who was the brains behind all of this effort. And I told him one day I'm looking to do this. I'm looking to have this capability across a broad spectrum of instrumentation both gas detectors, radiation detectors, others. And that began the process. I'd be quite blunt. Had we had to have done this with just the Los Angeles City Fire Department budget we never would have accomplished it. I mean that's the reality. So, happy circumstance would have it that we're well involved in Homeland Security grants at the time and we were trying to boost our capability using that grant funding. So, we had an opportunity [inaudible] danger so we took the shot at it and now we are on many, many years and over a decade later. And the way this had evolved and expanded and grown in capability is just amazing to me.

>> It's very, very encouraging. I will say this though that I think we've just scratched the surface. I think that putting these instruments in the hands of hazardous materials responders in the immediate increase in their safety that they get. It's very obvious. The first time you have a responder go into even at a drill. You put him in a suit. They're looking through a couple of layers of plastic trying to read. And as soon as they understand the concept, they immediately understand what a big increase in their personal safety this has given. And the fact that we can now interoperate with other agencies was a natural outgrowth of that capability. We wanted to be able to push it out to the net and share it with emergency managers, places like our Emergency Operations Center, natural outgrowth. But when I say we just scratched the surface, I



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happen to know that there are private entities out there that have suites of sensors already in place that would love to be able to share their readings with us. So I see this expanding further even though we have accomplished, I think, all the goals we had for this project. That's a little bit more than the history, sorry, but that's my perspective as well.

>> And I think there were a lot of policy barriers that you had to overcome to be able to share that data, that information.

>> It was, first of all, I needed to note that within the fire service, what should be understandable reason is there is a reluctance to adopt brand new technology. We used our equipment and our systems under conditions that are very threatening to our people. So, new technology, version one of anything usually comes with hiccups. And most often, you really can't afford to have that hiccup at the scene of emergency. So understandably, there is a cultural bias against things new. So, it was not just policy. We had to overcome--

>> Comfort level with the stuff you've been dealing, been working with.

>> Yes, yes, exactly. And this was very, very new. And so, there were a lot of growing pains, a lot of pain. Fortunately, I had some enlightened leadership back then. In fact, I think you're gonna be talking to retired Battalion Chief Robert Rose a little bit later. And he was in charge of our hazmat program at the time and fully supported us. On up through the chain of command, we did get support but I will tell you that at every level it was a challenge to begin with. But as more and more, the capability surfaced. It was very quickly that emergency managers recognized the capability that it gave them and it was critical. So, as soon as we demoed, as soon as we had an incident where we showed what was happening, it was very easy to overcome any policy challenges. We got support for that.

>> That's great. And it's also my understanding that you really pushed to have those standards put into your procurement request for use of your grant fund.



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>> Yes. There was a point in time when enough of the hazardous materials response teams in this area that were all party to the grants were in the process of adopting this system. So it reached a watershed point where there was no longer any question about the need to have this. We had answered that question. Now, what we wanted to establish was that within this region, if you're going to partake of the grant money to acquire hazardous materials equipment, then this system is gonna be part of it. And so that, I did, I stood up at one of the meetings and sit at that. And fortunately, I had the support of the major response agencies, the sheriff's department, county fire department, et cetera. And everyone nod their head and agreed that yes, this is a way to go.

>> Standards are so, so critical mainly in the Department of Homeland Security Science and Technology Directorate. I mean what we do is we work with folks like you and with the operational components of DHS to try to find out what it is that you guys need out here in the field. And so, you'll tell us, you know, I need a widget that does this or I need a way that I could do that, or I need to be able to do this and we just don't have this capability. Or this thing doesn't work with that thing. And so, we will go out to universities and laboratories and out to industry partners and try to find out who is working on something that will help us get there to answer this problem for you. And if there is nobody out there working, you know, then we go to the universities and laboratories and say, hey, you know, from scratch, let's get the science and start working this way up. But more and more that we find that a lot of things could be addressed just as there were standards in place. And so, that's where we're doing a lot of work in that direction now is to try to help to have standards established for a variety of equipment so that we can make sure that when you go out to purchase equipment for your department, that you know that has met a certain thing and that it will help, it will work together of the things that you already have.

>> As I said earlier, you just can't but new infrastructure.

>> Well, that's absolutely critical. And in the early stages, and quite frankly, this surfaced as an issue for us very early on. Before Science and Technology Directorate approached this region to find out if we wanted to participate in this project, what we were finding was with the manufacturing, it's a very understandable reluctance to open their equipment up to allow us to attach devices and transmit their readings. I



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understood that at the time. So that had to be overcome. Fortunately, there were other people that had to do that work but it was a challenge and we have some manufacturers who initially told us no, we're not gonna do that. They've since come around to our way of thinking. They've seen the benefit and for the most part, when you show someone on either the emergency response side or the manufacturer of a piece of equipment, what the benefit is, it quickly overcomes objections. So, but it was. It was initially an issue for us and there were standards subsequently promulgated through the project that had benefitted this system greatly. Yes.

>> And I'm actually seeing on a couple of websites some of the detection technologies out there have actually adopted the entire process. So it's really great to see that change in thinking from the vendors as well.

>> Great. Thank you very much, chief. Greatly appreciate your taking the time to chat with us.

>> My pleasure.

>> Is there anything else that we didn't give you a chance to say?

>> No, other than the fact that this is really a critical point. And I believe that from here going forward, seeing this expand to other agencies throughout the United States is very encouraging to me. I understand, I heard today that there are some major metropolitan areas that have adopted this technology or are in the process of doing so. That's very encouraging. I think it's been validated. Its value to the emergency responder is clear and I think its value to emergency managers is also as clear.

>> And I just wanted to personally thank you for all your support and being a champion when we came in and started working with you. I think your vision has really been essential in making this program a success. And I just wanna thank you for all of the support you have given us and being part of it as well.



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>> My pleasure.

>> Thank you again. I appreciate it.

>> I understand you recently retired?

>> I've been retired for almost a year now enjoying myself but staying in touch with this. I've been watching the progress of the program.

>> Congratulations. Well, you can't let go for this is kind of your child in a way.

>> Thank you very much.

>> Thank you. Well as you have already seen and heard, you know, a large part of the success of this project depends on the participation and the role of all the organizations to accept, adapt, and implement the concepts and the ideas. One of the things that Chief Cramer brought up is an initial reluctance from companies who wanted to--who didn't--were reluctant to share their information and their data and their technology, allowing it to open up to other things. And they were all very concerned business wise and proprietary technologies, that kind of a thing. So we're gonna be joined now. We have one more gentleman coming up to join us. This is Battalion Chief Robert Rose from Los Angeles Fire Department. Welcome, well, chief, would you tell us a little bit about how you've been involved in this project. I know you've been out of the picture for a little bit and kind of kicking back and fishing I guess now. You look like you're still heavily involved because here you are.



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>> Yes. And somehow you just can't get away from it, you know, which is a good thing for me. Like Bob, I was very involved with our hazmat program. I was kind of our hazmat coordinator at a time before Chief Cramer was. And I know he talked a little bit about the history. I kind of add a little bit to that. I am not quite the technician that Bob is to being able to understand the knots and bolts of it, or certainly not as highly understanding as David is. And for me, when we first envisioned this program and bring it onboard in our department, it was an opportunity to greatly increase the safety for our responders and that was kind of the perspective that I had then was just the people who were managing a single incident being able to see those readings realtime.

>> Bob mentioned one incident that he talked about was kind of an inspiration for him. We had others where we had difficulty for any of those folks out there who are hazmat responders. They know what that sounds like when a guy is trying to communicate from the suit. And the person on the other end who is trying to receive that information who is responsible for their actions inside has a very difficult time, a lot of times just understanding information, numbers and everything else can be difficult to transmit. And I saw this as an opportunity to greatly reduce those mistakes that were just inherent with doing hazmat. And this entire program has just expanded phenomenally from my perspective since then. And sort of part of my involvement since I retired, okay, is first of all I am an instructor for the State of California at our hazmat training center up in San Luis Obispo. So when they put on our classes all during the year, then I'm one of the people that teach there. And I do, you know, at each one of these times, give a demonstration of this system so that other folks and other agencies and other regions and other cities can take back with them the thought process the next time that they have the ability to make changes and be able to write grants and you know, acquire additional equipment that this is one of the things that they consider. And I just talked to them about how successful the program has been here. It hasn't been without a few bumps in the road along the way but thanks to the great support of you folks, okay. I think that has really, you know, seriously, that has really been able to make the system become more robust, reliable and everything else along the way, and that's a great part of it for us. And I also am the training coordinator for safe environment, so when these systems get purchased or brought onboard and two different agencies have been around the different locations where we have the system now along with the L.A. region, up in the Seattle region, up in the San Francisco area, coming soon down to San Diego. I think back in Boston we're gonna be doing it. When the hazmat teams try to get their arms around what this system's capabilities are, I don't think they really get an appreciation for it until we can get there and actually, give them the training for them to realize and understand the capabilities for the hazmat folks along with the ability to share with other agencies. And I think, you know, Bob talked and also Captain Alva talked briefly about interagency. And one of the things that has certainly, you know, greatly been improved is that cooperation between law enforcement and the fire service



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in this region. It didn't start out that way. We were too different entities with two different missions. And I think that one of the things this system, especially the ICBRNE expansion of it has brought on is the understanding that we all have needs at one of these large scale incidents and this ability to share this information live for each one to be able to view, everybody's instruments allows us to work together on a way, not only more professional but you know, safer and more efficient, you know, capabilities.

>> And I think it's great that this is, you know, one of the reasons we're having this webcast is to be able to take the lessons learned coming from this program, coming from all this experience you have and make it to others, available to others so they can do the same thing within their city or their agency or what to meet their needs.

>> That was probably the critical part here. I mean we can't just do it here and not move it and expand it out, expand out the capability and safety--

>> And it has been used in just speaking from my involvement with the Seattle area. They're kind of a different model than we have here, in that it's a regional concept for their hazardous materials response teams. And each smaller city brings a component of the overall hazmat response system. And so, one may have the instruments to do a radiological margin. One may have the instruments to be able to do monitoring for all of the flammable combustible atmospheres. One may have different instruments that we can tie into system. When they come together, their ability to be able to see back and forth and share on the multi-viewer system, each other's instruments allows them to work together more efficiently than they could in the past. In the past, they have to kind of have just one person who would try to be the, you know, kind of the center if you wanna call it that for their information sharing, and it's all done verbally and kind of manually. And now they can do this all in a realtime and a real view of all of the instrumentation. That's been a real, real plus for them. And this is a smaller scale system than we have here in the City of Los Angeles. For us, we have four hazardous materials response teams and the capability for us to be able to share that back, information back and forth between our people at a larger incident allows the incoming teams to be able to already see what may be going on in an incident as it expands. A lot of ability to do that and then to push that data out to subject matter experts that may be in the area or even outside the area. For us to be able to have someone on the east coast, be able to look at a national lab or something, to be able to look at a reading and then provide us with, you know, feedback as to what that means, it's truly an asset for the local teams to be able to have that.



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>> Great. Thank you. You hit on some really, really important issues there especially and I guess I didn't realize, I wasn't even thinking along these lines before when you said that, you know, different groups, different entities, lab, different pieces of equipment that test for different things. So, you don't have to have--nobody has to go and buy their own equipment. They can actually share the data from the equipment that already exist in the force that's already out there.

>> And I think one of the real pluses about how ICBRNE and certainly a safe environment approach to this program was that you didn't have to necessarily procure all new equipment to become a part of the system. In fact, there was all of that existing sensor technology piece of equipment that everybody had as a standard kind of within our hazmat world already. And then the safe environment, you know, module that you put on there to be able to transmit that information is able to adapt several different manufacturers and probably 35 to 40 different piece of equipment now that can be utilized on. And that's just excellent.

>> And I wanna emphasize that's just one way, one application. But anyone who is using standards could do the same thing.

>> Well, thank you very much, chief. Greatly appreciate your taking the time.

>> Thank you, thank you for your time.

>> To join us and coming out from, well, not really retirement but--

>> Not really retirement. This retirement is brutal, you know.



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>> I understand that. I understand that. I think what we're gonna do at this point is take a very short break and then we're gonna come back and we'll talk to a few more folks. But one of things we're gonna do when we come back also is that we're gonna look to see how ICBRNE played a major part in an incident response exercise that Teresa mentioned earlier right here in Southern California. And then we're also gonna have live demonstrations of the equipment and lots of good stuff coming our way. So we'd be back in just about 5 minutes.

[Silence]

[Music]

>> Good morning. Will Kohlschreiber with breaking news from ENN's national news center in New York. We're following up on our lead story of the massive explosion which hit the Los Angeles area this morning. Here is what we know so far. Just after 7:30 a.m. Pacific Time, a large explosion rocked the Los Angeles area. The effects of the blast are so extensive that it has thrown Southern California into virtual chaos.

>> Today's ICBRNE detection demonstration will serve as the cornerstone for the final phase of Operation Golden Phoenix 2010 or OGP-10. An exercise that will stretch the emergency response and recovery planning efforts of the Los Angeles County Operational Area to its limits. It is a combination of training and exercise events that focus on the effects and consequences following the terrorist detonation of a 10 kiloton improvised nuclear device or IND in the Los Angeles metropolitan area.

>> The complexity of the OGP-10 series of events has required an extensive planning effort including diligent scheduling and extensive documentation and coordination from the CAW-led multi-agency planning team. The size of the planning effort was due to the large number and unique nature of the exercise events. The quantity and diversity of the participants and most importantly, the need for the exercise to meet all of the training, testing, demonstration and evaluation goals of each of the participating agencies. Development of the OGP-10 exercise events was started in mid January 2010 with a



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meeting of the proposed participating agencies followed by the creation of a concept of operations document to guide the rest of the planning and execution process. And extensive planning and documentation effort took place over the next few months following DHS's Homeland Security Exercise and Evaluation Program or HSEEP guidelines. A tabletop exercise and training event was conducted in early June and attended by 172 participants from 74 different agencies. Training focused on the effects of a 10 kiloton IND detonation in the Los Angeles area and the sensor technology and data integration that the ICBRNE project systems could provide. The TTX explored the multi-agency response to and recovery from the IND scenario. Some two weeks later an overview of IND effects and a focused discussion of county specific response and recovery issues were provided for 22 L.A. County Department emergency coordinators. On June 24th, senior department leads from the LA county emergency management council participated in an executive workshop which provided an overview of current IND response capability and explored critical information requirements and decision points in an IND incident. In July, subject matter experts conducted four training sessions on radiological terrorism for Los Angeles County disaster management area coordinators. Finally, a communication exercise was conducted with participants on July 26, which confirmed ICBRNE's interoperability and connectivity at participating operation centers and allowed participating agencies to interact with live sensor data in realtime. Today's functional exercise or FE events represent the culmination of an extensive six-month long planning, training and exercise program. Involving over 50 local regional state and federal agencies as well as the extensive development and implementation of the ICBRNE program. The FE will allow participants to capitalize on the data enhancements provided by the ICBRNE detection demonstration. And exercise the capabilities and expertise of the Los Angeles area in response to an IND detonation. A simultaneous advanced tabletop exercise will simulate the establishment of an area command to address the command, control and coordination of field response resources. The CAW has established an exercise control center to manage the complex exercise environment and coordinate all participating agencies. Subject matter experts from several agencies have joined CAW controllers in the exercise control cell to simulate both field operations and all entities not participating in the exercise. Evaluators will provide critical feedback on response capability and future training and planning needs, which will be incorporated into a detailed after action report and various agency improvement plans. The stage is set. The terrorist device is armed and Los Angeles is awakening to a very bad day.

>> Operation Golden Phoenix, last July this exercise challenged the emergency personnel and interdepartmental and intergovernment cooperation in this simulated catastrophic emergency which was replicating a 10 kiloton improvised nuclear device within the county of Los Angeles. We're gonna talk a little bit more about this exercise. With me is again Teresa Lustig who is our program manager with the Department of



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Homeland Security Science and Technology Directorate. And I also have Brendan Applegate. He's from the Naval Postgraduate School and the Center of Asymmetric Warfare. And you were the exercise manager on Operation Golden Phoenix.

>> Yes, I was.

>> Okay, great, wow. Well Teresa, before we talk about kind of the lessons learned to this, Teresa, this really, essentially this was a regional exercise. So how did DHS get involved in something like this?

>> Yeah, that's right. When I was working on the program really we'd had a number of large scale events, this was a Grammy and the Emmy Awards but I wanted to have something that would really validate that the system will be effective when there is something much larger in scale. And so that's why you know when you see in the previous clips, we really went working with the cities and they said they really wanted the worst case. So they chose the scenario which is a 10 kiloton nuclear detonation as what they wanted to plan for.

>> Okay, the worst case.

>> So, if they could do that, they can do anything. So that's where we started from but we wanted to use a formal process that we can actually quantitatively evaluate, you know, how effectively we're in demonstrating interoperability and be able to share information across different agencies and different emergency operation centers in a regional type scale event. And so that was pretty much my goal. And I really considered you know, the outcome of this demonstration would be my report card of how effective we actually were, did we add value to what their existing response systems were. That was really what we're trying to do.

>> Your report card, huh?



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>> My report card.

>> Wow, so how did she do?

>> She did outstanding. I think when we get to talk about the lessons learned, unequivocally, the ICBRNE system was a significant force multiplier. It significantly enhanced the capabilities of the response agencies in the operational level and strategic level of decision making to make decisions and respond to the incident. We learned a lot of things about it which we can talk about if you're ready.

>> Go for it.

>> Okay.

>> Tell us some of those things.

>> Let's talk a little bit first about the scale of this exercise and like Teresa said, this was kind of the worst case scenario. We set it up to be just that. We had 6 integrated training and exercise events conducted over 2 months that included participation by 800 people from over a 130 different agencies.

>> That's huge.

>> It was definitely big. You've also heard Teresa and the ICBRNE team talk about the real world incidents that ICBRNE's been used in, the Academy Awards, the Rose Bowl.



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While those events are excellent venues to look at the capabilities of the ICBRNE system at the field level, the operation centers like we see here today and the people at that upper level of decision making don't really get to participate in those events. So we wanted to take a look at something that was larger scale that would give us the whole gamut of decision making. Get the entire decision making process involved and see how the ICBRNE system could affect decision making at that level. So that's what really what we shot for with Golden Phoenix. It was the first time that the system had been used at this level of decision making and so we really had to do a lot of work on the front end to determine what the--how decision makers at this level would visualize the ICBRNE system. Because it really wasn't gonna be the same as what they were doing at the field level where you see a display on a device and you know exactly what it means. You got lots more devices, many more devices integrated into the picture and you have to use that picture in a different way to support what's going on in the field. So we got a planning team together, we got some--threw some ideas on the table and we developed--we helped David Lamensdorf and his team developed a visualization tool that could be used at this level and to support the response. Now typically, decisions at this level would be used based on a series of models that would take in a nuclear scenario, they would take the yield of the weapon, they would take terrain, they would take the predicted weather and they would give you an approximate location of hazardous and affected areas. With the ICBRNE system, you really have an integrated and interpreted picture of what that hazardous area looks like in realtime. And so you can--you have realtime information that's timely, you have accurate information that you can be very confident in making decisions on. So that was one of the biggest impacts of this system in this exercise. So besides that, what did we really learn about? Well, about it, we learned that it was a significant force multiplier. We've heard David and the other speakers talk about how in a hazardous situation you have people in very cumbersome equipment looking at small displays and they're really stressed out because they don't wanna get hurt in this hazardous environment. So we get this information beamed instantly to us and integrated into a larger picture that you can use to make decisions. That's a very, very significant capability. It's never been a capability that's been used before. So we're lucky to demonstrate that in Operation Golden Phoenix. We had 2 events really that showcased the ICBRNE system. One was a communications exercise the day before the big exercise. During that exercise we had live data from 40 instruments that were accessed by 61 unique locations which is amazing. Never been done before. The ICBRNE system enabled those people to view all this different instruments at the same time and integrated it into a picture so that they could use it to make decisions.

>> You said 61 unique locations.



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>> Correct.

>> What kind of sites are we talking about?

>> We're talking about anything from fire station to me sitting on my laptop at home if I'm authorized to view the system, to FEMA headquarters in D.C. It was all across the country so, really, really unique capability.

>> You can send something to one of the labs where there's a subject matter expert--

>> Absolutely.

>> On a particular issue.

>> And that's one of the things that we learned about the system is that you can say you're in Los Angeles and you have a catastrophic incidents. Those subject matter experts, especially in the radiological fields, they're gonna be unlimited supply, they're gonna be a limited resource. Now, you can beam that data instantly to a subject matter expert in an unaffected part of the country or even the world and have them weigh in on the decision making and the courses of action they should take in reaction to that environment, very, very powerful capability.

>> That's phenomenal.

>> So after the communications exercise we had the functional exercise which was kind of the as close to reality as we could get in simulating the detonation of this improvised



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nuclear device. And you saw the news clip that we showed, that we used to kind of inject realism into the scenario that simulated a real world media broadcast. So, we tried to immerse the participants in that kind of environment, create stress, create chaos and see how this ICBRNE system could help enable decision making and enable the response efforts. And we found that it gave an amazing ground truth to the existing models that were being used for decision making. But like I said, the data coming from the ICBRNE system was considered more timely and more trustworthy, a better asset to make decisions on in these models that have been used for decades and so very significant benefits. Based on the fact that this was kind of a new system at this level of operation and that we had a visualization tool that was kind of in an infant stage, we did have some limitations in that visualization tool. It wasn't--it didn't go down as deep as we would like it to. You couldn't get as much information as we would like out of it but it's operational here in Los Angeles right now. There are focus groups that are really studying its use at this level of operation and so we're really kind of excited to see how these limitations work themselves out in how it can become a really powerful capability.

>> What kind of additional depth of information would you like to see it be able to do?

>> Some of the things we were talking about were being able to identify unique device and individual device, and kinda drill down into the information that that device would provide the actual person who's holding it. So manufacturer and model, detection thresholds, alarm settings. Right now what it displays is a green, yellow or red setting and you don't really know what settings the devices is set at so that you know what those green, yellow and red really means. I mean it's kind of left open to interpretation as to, okay, does red mean that I have to get out of here now or I'm already over my exposure limits? Also remaining battery life or the device's current user manual, just information like that could be made available. And we're really kind of too quick to have that level of development on that visualization tool. Another thing we're working that was brought up was the vulnerabilities of the systems transmission in a catastrophic incident. Say, you lose power or the cellular network is down or you have an electromagnetic pulse from a nuclear detonation. How is the system set up to handle that? Does it switch to another method of communication? Does it go down completely? Do you need a human in the loop to switch that? And so we took a look at that and I understand that those focus groups right now have developed a lot of capability in that area. So, we're really excited to see how the system has evolved in just a short amount of time since we've ran this exercise. We identify the significant capability but just a couple of things that really needed further work and it's really come a long way since then.



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>> And we're talking, it was only July?

>> It was only July, yeah, so less than a year.

>> That's quite impressive.

>> And my goal was more you know looking at the system performance. But L.A. was really looking at how they could improve their response and work on their response plans. And so there were their safety aspect goals that they were working on as well. And I think a lot of light was shed on, you know, improvements in their response plans that they had in place through the exercise as well.

>> Absolutely, yeah. L.A. is really one of the regions on the cutting edge of this kind of response planning. And so we really did push them to the limit of their capabilities in what they were--what they had practiced and trained to do. I mean we really wanted to see if we just push the system to the breaking point, how the system could help them get through that kind of a crisis? And it was really, really an interesting thing to watch. I think everybody learned a lot about it.

>> It sounds like you've got an A?

>> Yeah. Yeah, I think definitely the system got an A in that respect, yeah.

>> Way to go.



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>> Well, Brendan, thank you. Is there anything else you wanted to add before we wrap up with your part of this?

>> No, not necessarily. I think we were excited to be--really, all of us at the Center for Asymmetric Warfare were excited to be a part of this project. And I want to thank Teresa for involving us and giving us the opportunity to work with the response agencies in L.A. County who we really feel kind of in our own backyard are the best in the world of what they do so just another opportunity to work with them and work with DHS in improving that capability further.

>> Thank you, Brendan.

>> Thank you.

>> Thank you.

>> Greatly appreciate it. Well, we're gonna hear from one of those best in class right now because we're gonna bring up Captain Yo Gikas who's gonna join us. Captain Gikas, how are you doing today?

>> Oh very well. Thank you.

>> Thank you very much for coming out.

>> Well, thanks for having me.



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>> Appreciate you taking the time. Coming out away from any crises of the day kind of a thing?

>> Oh yeah. Those going on everyday here in Los Angeles. Just yesterday the water hit. I think we set a record for the number of calls that we processed in a 24-hour period.

>> Of that of the flooding from all the rain that we had. That was pretty significant. I know we came out here from the Washington D.C. area and expected to see sunny Southern California. And it was sunny but it was just in liquid form, so.

>> Yeah, and it quite passes and we're back to the way we normally are. But yeah, it's been a pretty couple busy days here. We had the marathon as well on the weekend.

>> Yeah. And I don't understand. Was it a swimming marathon? It appeared like it probably should have been with all the water that was pooling on the roads.

>> Well, you know if we can tie it in to what we're doing here, interestingly enough people suffered from hypothermia. Normally, we get concerned about them overheating and yet it was so cold that many of them were treated for hypothermia. They had to be warmed up. So, at any given time the situation changes because of so many different parameters whether it's, you know, some dastardly deed by a terrorist or just the weather. It can switch our needs very quickly from emergency, excuse me, emergency response perspective. So, having systems like we're discussing here that are dynamic enough to bring us the information we need at the time we need it, that's what we're after.

>> That's terrific. I know we wanted to talk with you a little bit about how this system kind of ties into the other operational programs and your inter-jurisdictional efforts and where you really can kinda see this going from here.



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>> You know from the very beginning I think it's always been inter-jurisdictional, interdisciplinary typed thing. One time I worked directly for Chief Cramer and certainly I worked around him for quite a long time on this project specifically but more in general is what's the concept we're doing here. We're moving in for information around. I hear the term sharing. Maybe exchanging might be even a little bit further into the situation. I currently worked at our operations command center, dispatch center. And on a daily basis I'm interacting or the dispatchers are interacting with law enforcement, LAPD being our number one customer or partner that we exchange information with all day long. LA County Fire, Culver City Fire Department, all the regional fire departments day in and day out, you know, roughly a thousand transactions a day for our dispatch center. We're constantly exchanging information. And if you take the platform that's been developed here, a standards based information sharing or information exchange that can be applied to any one of those things, and in reality that's what we're doing through, you know, the support of many other people you've talked to today along with the Mitre Corporation and others. We have taken the computer-aided dispatch information that L.A. Fire Department has. We've extracted it, we've put it into as much of a standard format as we can using EDXL or course around target for a couple of examples over standard IP networks. I know we've discussed here today along with our unit status and unit location and we're sharing that or exchanging that with the hospital association of Southern California here, we're doing that. They're giving us their bed status using the hospital availability exchange. So, we use both of those all the time everyday. Its bread and butter kind of piece of information we need to do basic operations. We took that this past weekend for the marathon and we took it to another level. We did an integration with Verizon. The Mitre Corporation provides some expertise and Verizon stepped up and loaned us some of their equipment. And then a couple of days we did an integration with their cellular system that we can track cellphones. Not smartphones but all cellphones. We took that information again and put it into a standardized format and pumped it into the EDXL router, and within 2 more days we provided it to MIT's linking labs where they're working on another DHS product called LDDRS or L-D-D-R-S.

>> And within just a couple of days, we were sharing our incident information, our unit status and location and the workings of the marathon as it was in progress. And we demonstrated that on this past Sunday. So when you say where is it going, I think the key in where I have been focused most of the time, again, I've been intimate with the project and then I've been kind of in the background at times. But the overall concept here is that platform and the methodology that's been developed here is easily replicatable. It can be scaled to any level down at the local or all the way up to the national, so we're doing that.



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>> That's terrific and it seems like you're out there kinda championing this with other organizations.

>> Well, I've been a bit of a cheerleader, yeah.

[Laughter]

>> And it sounds like you have a number of other information or emergency management systems now that you've been able to extend it to--you spoke about LDDRS and that's I understand a system that helps with firefighting which I know needs to be very well integrated and coordinated in Southern California.

>> Well, the LDDRS--LDDRS is one example of an effort to, you know, provide or gain situational awareness through sharing of information, what are we doing if we can just share that amongst ourselves first and if somehow we can get that all to others and again, share or exchange might be I think what we're looking at as bi-directional messaging from computer aided dispatch system, the computer aided dispatch system or go a little bit closer to where this particular project started which was really down at the operator level and that firefighter in a very cumbersome suite in a stressed out situation trying to read that decimal point, and I think that--I'm sure the chief shared a story about how the decimal point was in the wrong spot and that launched the army. Taking that concept and applying it to other emergency operations that are so critical, I've been using the expression with David and the folks for a long, long time a sensor is a sensor is a sensor. If we can put a rad/nuke, Chembio or whatever sensor into this system, why can't it be a heart rate monitor or an emergency trigger off my radio or a GPS. And we're using all of those now. We're sharing all that information using this common scalable platform. It's really pretty cool to see.

>> And that's a good plan. It doesn't just have to be some air monitoring device. It could be something that's measuring your vital signs as well.



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>> Correct, and there's lots of efforts around the country to get the status of an--I'll say a firefighter but any emergency responder--what's the status, what's my heart rate at? Where am I? Blue Force Tracking, I'd like to know where I am in this building. So when we talk about force multiplying or response quickly, if I can know right where that injured person is or down firefighter is, I'm probably gonna save a life or I'm gonna have a better chance at it. How much air is in his tank? These things are--they're all standard to measure, a Fahrenheit or Celsius or beats per minute, they're all standards. So if we can package the information up in a standard little carton, if you will, you know what distribution element or something like that, it doesn't really matter what's in there. We can move it around and we can provide it to the people that need to see it very quickly. And that's really where when you say where do I see this going, well, we're going there. It's not even I have to see it, it's--we're doing it right now.

>> That's amazing. You mentioned Blue Force Tracking and we have several other projects throughout the Homeland Security Science and Technology director that are working towards those goals. And one of the biggest challenges is kind of doing that. Understanding we know where you are in this plane, we can figure that out, but we don't know where you are in that vertical plane if you're on a multistoried building and that kind of a thing. So, we're trying to develop devices that will help us to isolate and locate people in that third dimension. So, a nice piece when it comes [inaudible].

>> We're gonna get there.

>> Yeah, we're moving close.

>> If we can--if we can just solve the 2 dimensional, most of the time I think we can figure out that we're on the ground floor, but yes.

[Simultaneous Talking]



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>> --change that but, yeah, this technology we've developed and this methodology. I go back to, you know, where do I see this going. Voice--mission critical voice and interoperability has been a big issue since 9/11. We've learned a lot from that and one of the really neat simple things that came out of that was kind of the analysis of what does it take to be interoperable. And they came up with a one page simple graphic picture of from no interoperability to the most interoperable that you can be. And the interesting thing to me on that and what where I think the help needs to be, that there was 5 lanes if you will, or 5 channels to be interoperable, one of them was technology. The other four were things like governance and SOP's and training. And if we all sat on our hands for a year and didn't do anything, one of those things would be better than the following year. There would be technology because there're companies out there always striving to make a better product where we have to go as responders and users of these technologies as the governance end. Well, this particular project demonstrated the collaborativeness of the region or police fire, EMS, the hospitals, just about anybody participated here. So we've solved number one there is the governance. The model that came out of--for governance is very good. We just talked about some training exercises. So we're actually heading down the way that the mission critical voice issue identified. So that's--it's very rewarding to continue to see that one project and leverage on another. And when you say where are we going, I think we're just gonna continue to solve those five issues and make a better system for tomorrow for the purpose which is protecting people's lives.

>> And it's been nice to sort of watch how things have progressed here since we've been in--working on this pilot with you all from where your old operating center was and seeing how the--you've implemented a new GIS system and being able to add on the detection devices locations and make that information coming out of the ICBRNE system layered on that GIS system as well.

>> Very true. If you look at these sensor systems in terms of layers, you can bring in as many as you want and just, again, keep reproducing the model, the architecture here that we have developed for whatever it is you choose to bring in. It's pretty powerful.

>> It's excellent. Captain Gikas, thank you very much for coming out.



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>> You're welcome. Thanks for having me.

>> Thanks for everything you've been doing in this program.

>> Well, thank you, terrific.

>> Teresa.

>> Yup.

>> Take care.

>> You know, we've heard a lot about the term interoperability throughout today's webcast. And what we have coming up next is a taped interview with Denis Gusty. He is from the DHS Office for Interoperability and Compatibility and he's going to have a little discussion to help us to understand more about emergency management standards which have helped us enable the capability that we've been talking about today.

>> Hi, I'm Bill Kalin. I'm the director of Homeland Security Operations for Safe Environment Engineering, and I'm here today with Denis Gusty who is the program manager for the Emergency Data Exchange Language program. And we're gonna go over a little bit of that program with Denis today and hopefully learn more about it and see how it's contributing to the Integrated Chemical, Biological, Nuclear, Radiological, and Explosive integration program. So Denis, can you give us a little bit of an overview of the Emergency Data Exchange Language and what it does?



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>> Sure Bill. First, let me describe the problem. When you think about--when you think about all the emergency response agencies and you include federal, state, local, private, tribal, you're looking at probably over 100,000 different agencies. These agencies need to communicate with one another. It's very difficult to do that when you have private sector vendor selling their products to individual agencies. So what we've done is tried to develop standards that allow interoperability amongst the different agencies and among the different products that these vendors are selling. So, if the vendors build their product to the standard, then we achieve interoperability. So EDXL is based on XML. We applied the best practices of XML and build those or use those best practices as we develop XML standards. So the standards, like I said, if you're building to the standard, it allows interoperability amongst the different disciplines within those different agencies and among the different products that these vendors are selling.

>> Well, that's great. Can you tell me a little bit how the standards are developed?

>> Absolutely. As I just mentioned, over 100,000 different agencies, if they're the ones actually using the standard along with private industry that are developing their products to the standard, it's important for us to get the stakeholders involved in the entire process.

>> So you get the first responders involved?

>> Absolutely. They drive the requirements. So from step one to the final stage of this whole development process, we--it is a stakeholder driven approach. We immediately start working with the stakeholders to develop the requirements. Those requirements then get transferred into a specification which in the long run, that specification is what gets transferred over to the standards development organization.

>> In this case, it's OASIS. They take that specification then turn it into a standard. Their process is also very open. So it doesn't stop where we leave off. It continues that whole stakeholder driven approach once we turn over the specification to OASIS.



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>> So the key to this whole thing is the stakeholder involvement from the first responder hazard not necessarily federal standards but these are stakeholder driven.

>> Absolutely. We sponsor--we sponsor the process, but you're right. These are not federal standards. OASIS, the standards development organization is a nonprofit entity. So we don't--the federal government doesn't own the standards. We help develop them and they get used by anyone that really wants to including folks in the international community.

>> So what is that you do that encourages the adoption of these standards with the private sector and stakeholders?

>> Well, one of the things we do is not only do we work with the stakeholders or the practitioners to drive the requirements, we also involve the vendors in the process as well because ultimately they have to build their product to that specification or the standard. So, we get them involved early in the process as well because then they know what's coming down the pike. They can start gearing up for development of any new products that they may have in their pipeline to build to that standard. We have monthly meetings with them. We have a working group. It's the Emergency Interoperability Consortium, which is represented by private industry who actually sell their products to the first responders. We have a memorandum of understanding with them. So again, having monthly meetings, getting the interaction between the private industry vendors who are developing these products, getting them involved early on helps the process move along smoothly.

>> That sounds great. It's something very vibrant and flexible.

>> That absolutely, absolutely.



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>> So how do the EDXL standards then fit in specifically with the ICBRNE project out in Los Angeles with the, you know, the integration for the chemical, biological, and radiological sensors that are out there?

>> Very good question. I look at that program or Los Angeles County in this case is being a consumer of EDXL, in particular, one of our standards, the Common Alerting Protocol. That's being used to actually carry sensor data to the--either to a different device that alerts either the public or that emergency response manager of any impending concerns or disasters based on what that data, the data that got picked up by the sensor in this case. So to me, that really speeds up the process. It allows that interoperability between a sensor and the final end result or in this case the emergency manager allows him to react much faster to any type of incident based on the Common Alerting Protocol.

>> So you're taking time off of the response. You're taking--

>> Absolutely.

>> --some of the decision capabilities into real time allowing an incident commander or emergency management personnel to really decide faster based on real time data what they can or should do and then allocate their resources more appropriately.

>> Absolutely, absolutely. If you look back at some of the processes that are in place before using or implementing a standard, a lot of them are manual processes. So if we can build anything, any process, any product to a standard that will allow that information or that data exchange to happen a lot quicker, then in the case of a natural disaster, seconds matter, seconds matter, it saves lives. So we're shaving seconds and even minutes in some cases of a process by instituting a standard into that process.

>> That's great.



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>> You mentioned the Emergency Interoperability Consortium, are there other ways that vendors could participate in this type of program, and how would the stakeholders potentially know what vendors may be interoperable? Is there some kind of testing program or certification program behind any of these?

>> Yes, there is. And let me go back a step because as we're developing the specification, what we like to do is get stakeholder involvement early on in the process. And a lot of times that looks like a pilot project maybe. And that allows us to further vet the process. So that's one way of getting more involvement. Getting to your--that the last point, we do--there's a testing center, the NIMS support center and they--what we actually do is allow the vendor community to come in, test their product against the standard to see whether or not it complies with that standard. If it does, then we post it on a database that the first responder community can then look at and see what vendors are compliant to the standards.

>> And that's the responder knowledge base, correct?

>> Exactly.

>> Okay, correct.

>> Exactly.

>> And so once the--once the vendors go through this process and they're put out on--their report is put out on the responder knowledge base, then the first responders can actually go look at the report to see how compliant they may be at that point.



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>> Exactly, yes.

>> Okay. So, so you're providing all of that information back and they can incorporate this into their RFPs, request for quotations, something like that

>> Yes, yes.

>> And they can see who's compliant with the EDXL standard.

>> Yes, yes. And what we also do is we work with--with FEMA, the Federal Emergency Management Agency, and they actually built that language into their--some of their grant language as well. So, if any state or local jurisdiction has grant dollars and they wanna use it to purchase a particular product, they can go back to make sure that that the vendor who maybe or the state or local government that's applying for that grant has clear visibility into, into those products where there's vendors that are EDXL compliant.

>> That's excellent, excellent. Now, we also understand that a testbed has been established with the ICBRNE program through Teresa Lustig which will allow vendors to further enhance or develop and test any new concepts with the EDXL standards that's based out in the Naval Postgraduate School's.

>> Absolutely, and we--we try to take advantage of situations like that because, again, going back to what I said earlier about allowing the vendor community to participate early on in the process only benefits everyone. So, including us to make sure that that the standard or the specification that were developing meets the needs of the stakeholders. So, allowing the vendors to come in and test their products in a testing environment have beneficial to all of us. In the long run, it pays off huge dividends.



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>> Well, that's great. Well, thank you for your time today. We appreciated it. It's good to see you, sir.

>> Thank you.

>> Here they tell us about the technical side of all of these and they give us a live demonstration of the ICBRNE program. I wanna bring back David Lamensdorf who's the president of Safe Environment Engineering and I'm also gonna bring out Jeff Waters, who's a scientist from SPAWAR Systems Pacific--System Center Pacific. Both of them have played the key role in making ICBRNE a reality here in the region. So gentlemen, take over, you've got it.

>> One of the things we really wanted to talk about is just some of the mechanics that are going in and what's in the field, although there's a number of systems that are being integrated together. I want you to get an idea about some of what Los Angeles is doing and how we're integrating some of this. So, one of the things that what this is really starting with is being able to make a lot of these commercially off-the-shelf sensors, these legacy sensors be able to communicate to share their data together. So, what we put on is wireless adaptors that go on to a lot of the different types of instrument, some radiological, chemical devices, chemical warfare agents. Some of these you may recognize other radiation detectors that are in the field and how do we get this data now to communicate and display. So, this is kind of the starting part. One of the other challenges we ran into obviously is distance. And one of the parts of the project that no one really could ever answer was how far away is the tech ref or the person, the subject matter expert from the location that's actually getting the sensor? And one of the things we really had to do especially here in Los Angeles is also deal with the fact that we had a varying degree of network architecture available to us. So, one of the things that we're doing within this project is reeling the data by what's called gateway and gateways is really exactly what you've heard in the descriptions of gateways, a device that allows one network communicate with another. So, in this particular case for ICBRNE in Los Angeles has been a local WiFi 802.11 type network that's communicating now through a Gateway on to a cell network and we use a variety of different cellular networks out here. So, we have essentially two networks working, a local network and a wide area network that's using this data. That in turn is re-relaying exactly what is on the sensor's base plate out to somebody in a remote location. And if we could go to that screen on your--so we'll show you exactly what this is looking like out in the field.



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>> It's kind of a--and exactly a WYSIWYG type environment, what you see is what you get. And that from a training perspective this was incredibly straightforward for our public safety users. If you know how to read the instrument locally on the instrument, you'll know how to view it and read it remotely. So, that is--those are essentially the three main components of the system, the wireless adaptors, the gateway and a remote display. As this project evolved, the question was, how are we gonna share it. So, initially this was a safety tool to get the data to the back of the truck to allow people to be able to view this information. Now, we were able to share it with subject matter experts. And the question became how many and in what form do we need to share it with. And of course the answer to that is kind of anything and everything, no particular limit in the amount of people we won't gonna view as and--and also where they might be in any particular time. So, one of the other views that we're looking at as a way to re-view this sensor data at a remote location and I want to bring up one of those views right now which is what's called the multi-mirror viewer. And again, very similar to what you just saw on the other readings except more of them. And this is one view that's--that's going out live. I'll show you a representation also of another view that we had for--for this as well. This is kind of a fun story behind this particular view. This is what happens out here on a typical Monday. One of the things we're trying to do with the system is train and drill. And this screen represents a typical Monday out here where we put all the different instruments online and able to see their readings from all different types of services from Coroner's office, Sheriff, LAPD, military are all participating as part of this project. And as Captain Alva talked about earlier, this whole concept of information sharing that's part of it. Also, on this is the ability to--to show the data in a--a more of a--a more of a graphical view as well. So, I'm gonna bring up the multi-meter view here and we'll go ahead and bring up a way to see it in a map format that will come up on our display momentarily here. So, that--that was another way that we will able to view this in a moment. Actually, you can see a graphic behind the--off in the back of the command center that's showing the use of a system in a map format as well. So, here's the live view that's coming up of just a Google Earth implementation showing a bunch of sensors that are actually currently online as we speak as just points on a map. Honestly, this was a very important point that come to in the ICBRNE project just because what the visualization that emergency manager needs and wants and desires was a kind of an open point, not giving them too much but not also giving them too little on this. Make them select in any particular time that point out a map to bring up data on that specific sensor that they might want to look at on there. So, the other part of this project that's happening in conjunction with the software and in capturing the data is solving other levels of interoperability. So, one of the things obviously that we're--we're running into is all these different instruments that all have different connectors and all have different ways and different protocols. So, one of the things that ICBRNE has done is we grabbed all this legacy data from these instruments and we packaged it into a global



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standard for information sharing and that's standard for part of this project has been used--is using what's called CAP, the Common Alerting Protocol which is an XML standard which basically is what is the minimal acceptable data for an alarm, and Jeff will get into that on alert in just a moment. And it's a really nice straightforward XML data set that we're working on. So, the other parts of this project I just wanna talk about briefly before we get into some of the other tools is what is actually happening. So, one thing I'll demonstrate for example is we'll have a various meter and literally to be able to expose it to a source, I have a radiation detector with me that I'm just gonna get near a radiation source. [Background noise] It's gonna generate an alarm condition. And then in real time, we're gonna see how that gets translated back to the truck where we've gone over some exposed condition. So, that has been a little bit of the information that we're getting from these sensors. And we're doing the same thing for chemical or chemical worker agent. Now, what also has taken place in Los Angeles is really very important is who's getting notified from these particular sensors and who's, you know, getting that information or processing this. So we've worked out a series of protocols now for alerting notifications. So, literally I can have this alarm show up on my cell phone or as a text message, email or voice and alert other people. So, that has been a very--again, using the CAP protocol to do that. So, I also wanna talk about some of the other formats and tools that have been important to the response organizations. And Jeff, maybe you can fill in a couple of those--those areas that we've also touched on.

>> Absolutely, David. You know, we get questions from folks. You know, well, CAP is a great standard. [Background noise] It's simple, it's easy to use.

>> Sorry.

>> Simple and easy to use so--and it's understood by the emergency management community. But what if we use a different standard? What do we do? And so one of the goals of interoperability is that you should be able to use the tool of your choice and of course the standard of your choice, your jurisdiction may--may need to make its own decisions about these things. So, what we did is--as [inaudible] some Center Pacific in conjunction with the other partners of ICBRNE is we set up a test bed environment where we showed how converters could be used, convert into a lot of standard different format. So, for example like you're seeing today in the visualizations, it was basic HTML for table views of the sensor data. There're KML views for Google Earth and there's Cursor on Target, Captain Gikas mentioned which is an Air Force standard in common use. We showed interaction with DoD, JPEO-CBD tools using a standard



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USMTF format and it goes on. You may not be familiar with all these formats but the goal, the point is that there are different formats and we need--we just need to make sure that we can interoperate. We also want to make sure that we can reach people in the field wherever they are with whatever kind of tools they have available. And of course a lot of emergency managers and other folks live on cell phones and BlackBerrys and coming up with a tablet, computers. So, we've demonstrated interaction with those capabilities and you can see some of them here. So, you know, I was excited, David, I think it was maybe the world baseball classic was the beginning of it. But you were there around Dodger Stadium. You had sensors set up in the field taking readings. And on that day, I could look on my phone here and see where they were zoom in, you know, look at what the readings where live. It's very exciting thing and--

>> Yeah, it's been very interesting.

>> And so for those of you who are out there and there are some folks asking us, well, where do we go from here? How do I get involved? How does my agency participate in these things? Or what do I tell some of my technical folks to do if I wanna see some of this in my region. And so we've thought about this as part of the program in terms of how to integrate folks who wanna begin to think about participating. And so there are a couple of things to think about. One is that there are ongoing pilot efforts in other programs and there are opportunities for participation there. There are also opportunities with our test bed efforts that are continuing and you heard Dennis mention their interest in fostering those--those collaborative opportunities. Also, the standards organizations need a few words here because you can see this beautiful equipment here. What you can't see is the standards that are being used behind the scenes. And David participates and some other folks who have been here participate. And I know first hand what it's like to sit with the hardworking folks who also do the standards work. OASIS for example is a wonderful organization and Open Geospatial Consortium, W3C, these are all wonderful standards organizations. And there are opportunities to participate, join and help develop the standards that you're seeing in use today. And your participation is quite important because it ensures that the standards that are being improved and developed will meet the needs of your jurisdiction for the tools that you use everyday. So, these are some of the things I want to mention.

>> Yeah. One of the things obviously that's been really important to the end users is just answering this little bit. This is the question, make it connect. And with a lot of the other



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vendors and working with this--these standards and using them as the kind of the--the [inaudible] architecture, we were making things connect. So, you know, on the surface it just works. Things turn red. There's dot show up on maps. There's all these--we're having all these guidance data that comes up. But when you really look under the hood, as Jeff was alluding to and talking about, we are seeing that it's the standards that have made this all integrate and link together. And there are multiple standards. Obviously, one of the things in terms with the Department of Homeland Security we've been trying to do is using these XML standards. But there're other standards that we've been working on. The data standards, the wireless connectivity standards that we've been trying to use and foster as part of these are all coming together as forming a system, actually a system of systems so there is your definition of interoperability in and of itself. So--

>> You know another question, David, we get is, you know, where do we--where do we go from here now that we have this kind of interoperability. How can we take it to the next level? And one of the things that have been discussed here by a number of our interviewers is where--where the--where the community wants to go. And what's nice to know is when we're participating in these standards groups is that there are standards to help take them there.

>> Yeah.

>> So, for example, the distribution element was mentioned. And this is a standard which can package up the information that you need to send and route it to people based on their role in your organization or in your mission. So what this allows us to do is link out to externally managed domain knowledge that you have about who's doing what in your community, so that when you address some information that needs to go out the door you can say it needs to go to people with these qualifications or who have these roles. Because in an emergency, there's not enough time to ensure that the--that you know who all those people are and this kind of automation can really help us route the information where it needs to go. And then we need to make sure that we can improve decision making which is where a lot of this is about. So, courses of action that you have and assessments, some people on the chat room were discussing this, is wouldn't it be nice if the computers could help us do some of the assessments of the options that we face in making a decisions? And there are standards like StratML for strategic planning and goals. And there's also a decision incubator at the W3C looking



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at formats for decision making. So, it's exciting to think that there is opportunity to standardize where we need to go on the roadmap.

>> Well, let me--let me maybe even address this one other way. So, one of things that--part of this project has been working on is coming up with a roadmap to help. And taking a lot of the lessons learned from the ICBRNE project and be able to provide it to you for further growth and further integration. So, we have a final report that will be published and available through the ICBRNE website probably within about a week or two. There's a link for that now. If you specifically want to get a copy of this, contact one of the recipients on the ICBRNE website right now and we'll make sure to get to you--get this forwarded here. But it is a comprehensive guide talking about the standards, the solutions--

>> And lessons learned.

>> URL.

>> URL is www.icbrne.org, icbrne.org. And I think we can also have it as a link on the webcast directly, so they can get access to it.

>> And David, after this meeting over the next few days, we're gonna be updating I think some of the resource links for some of the things that we've mentioned here on this webcast and also perhaps over the next couple of weeks for test bed or pilot opportunities that people might wanna look at.

>> Yeah. It's a dynamic website we're trying to keep of--well, with updates and releases and such like that. John, thank you for the--yeah, we're [inaudible].

>> Great. Thank you very much.



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>> I appreciate it.

>> Thank you, Jeff.

>> Thank you, David. Thank you, Jeff. Greatly appreciate this incredible demonstration of this equipment. This had been great. So now, we've seen quite a bit. We talked to a lot of people today and we've seen how the standards of being leveraged at the local level. What I wanna do now is take us up to the federal level. And here, what the federal government is doing to try to do this integration of information across multiple agencies. Taped in Washington, D.C. was an interview with Robert Dilonardo. He is the Chief Information Officer from the Domestic Nuclear Detection Office at the Department of Homeland Security. We go to the videotape?

>> Hello, my name is Bill Kalin. I'm the Director of Homeland Security Operations for Safe Environment Engineering. And we're here today with Mr. Bob Dilonardo who is the Chief Information Officer for the Domestic Nuclear Detection Office at the Department of Homeland Security. We're gonna cover a little bit about this program and its relationship to the Integrated Chemical, Biological, Radiological, Nuclear and Explosive program run out of DHS Science and Technology by Teresa Lustig in the Chemical and Biological division. How are you doing today, Bob?

>> Doing very well. Thank you very much for the opportunity to be here.

>> Thank you, we appreciate your time.

>> This is I think a very important effort and I'm glad to be able--I've been participating on some level and I think actually it was very significant for us last year. I think the, you know, it was very successful effort. And for that reason, it's another excellent I think



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example of collaboration and what can happen with collaboration. So again, thank you for the opportunity.

>> Great. Well, thank you again. Can you give us a little bit of background about the Domestic Nuclear Detection Office or DNDO and its mission and purpose?

>> Sure, well, you know, I mean obviously I think a lot of people are very familiar with the idea that the threat of nuclear terrorism is very, very serious to our nation. And the domestic nuclear detection office was set up pretty much in response to that threat to be able for the government, to enable the government to do something about it. In 2005, HSPD 14 and NSPD 43 pretty much set up the Nuclear Detection Office and what its mission is, and it was codified later in the SAFE Port Act of 2006. And you know, there's a number of things that we do, but clearly a very important focus is to detect and report on the threat of nuclear terrorism, fight--transmission of illicit carrying or transporting, importing nuclear materials. So it's a concentration on the technology associated with the detection capability.

>> Okay, great. Can you tell us a little bit about how the DNDO mission supports the ICBRNE project that's going on in Los Angeles right now?

>> Well, ICBRNE is a very important project from my perspective, especially coming from the IT world. I mean it's about information sharing. It's about automated information sharing even more importantly. And as a result of that, you know, the collaboration that we have with Teresa Lustig last year was very, very important. And very important to what at least I'm trying to do within DNDO with respect to what IT can do for the nuclear detection problem, the terrorist issue. So obviously, we support it and it has helped us quite a bit. And I think the idea, I think very simple, I'll give you 2 examples. I mean if we can have automated information sharing, we wanna be able to adjudicate alarms more quickly. Nuisance alarms we call them are a big problem. It's very difficult. You have--the detectors will go off and very, very effectively be able to detect the problem of substances but they're not all substances are actual problems. For instance, bananas or kitty litter will give off a signal and we obviously don't have an issue with that. So the detection problem is very difficult and we need to be able to quickly adjudicate alarms in those cases. So, the commerce can flow or the people can go about their business. And also, as you well know, the maintenance of overall situational awareness, that's also



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very important to us. Again, automated information sharing I think is a key element and that we're truly enabling that.

>> Well, with that said, I know you're working with the National Information Exchange Model on the CRBN, CBRNE, IEPDs, the Information Exchange Packet Data. You're also working with Denis Gusty on the emergency data exchange language piece. So can you give a brief overview of how those components fit into your overall vision for interoperability and the information sharing pieces you've been describing?

>> Yes, absolutely. I mean you know, obviously, we have to agree on a common language, right? Everybody understands in order to communicate, we need to understand the same language. And it's the same thing with computers. I don't think it's any different. We have to have a common language and the National Information Exchange Model is something that I support it, and DNDOS support as result of that-- what has been accomplished there right from the very beginning.

>> So, what ICBRNE was able to do was actually get some implementation and our work with the project last year brought the Chembio experience to us and also I think enabled us to see how it can actually implement, be implemented successfully. So, we're gonna build on that in what we're doing this year.

>> Excellent, now I--I understand you're also looking for additional ways to validate some of the vendors and how they implement some of their standards for routing and things like that, can you tell us how the vendors could get involved in some of the things you're looking at with the sensor information for their data sharing capabilities?

>> Well, vendors are extremely important to what they bring to the table for the government obviously. There is a lot of expertise out there. Well, I should say there is-- you know, it's a very small community though too. But the--there is very important expertise what I should say, and not a lot of it. Now, being able to double leverage--and this is one of the lessons in collaboration with the government, right, be able to also leverage the skill sets and the expertise that was brought to the table to execute in the ICBRNE project is something that we're now able to benefit from as well. So, I don't



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know if that answers the question. But clearly, you know, what the vendor community and the expertise that brought to the table to be able to solve this problem of automated information sharing is absolutely key.

>> So, you're really looking for that public-private partnership relationship.

>> Absolutely.

>> That--that can support--

>> Across government. In terms of collaboration this again, this is an excellent example of how collaboration can be much more effective or so much stronger together than we are alone in terms of our agencies and also to bring the private sector and expertise into--so we don't we reinvent things too, which is another problem sometimes that exist in the government and silos. And something that we, you know, this is a very good example of not doing. And it's [inaudible] to say we don't have time to do it. The first time let alone do it over again, right?

[Simultaneous Talking]

>> Exactly. Absolutely.

>> Can you tell us a little about your Joint Analysis Center and the role that plays in on the information sharing piece in your analysis and adjudication?

>> The Joint Analysis Center, the JAC at DNDO, you know, DNDO is not an operational component but it has a very important operational support aspect to its mission and



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that's what I think the Joint Analysis Center comes in. You basically have a group of analysts and watch officers who are helping to maintain situational awareness nationwide on what the rad/nuke threat is. There's an--of course a number of things that they do but clearly, you know, it's interesting that you bring that up because the automated information sharing that we're actually--that we're seeking to perfect here and implement in on a large scale, clearly, clearly the JAC would be the operational folks that would benefit from that. They help support alarm adjudication out in the field when alarms are difficult to [inaudible]. There's a reach back capability to get to the scientists that can actually make the calls. The quicker you do, you're able to adjudicate an alarm, you find out whether an the alarm is real, something we have to respond to. Or again, it's just the bananas, granite or kitty litter, whatever. You know, obviously time is extremely important because if you're dealing with a real incident, the quicker you need to get the information to the right folks for interdiction to take place. So, alarm adjudication is an example, but overall threat and situational awareness of what the rad/nuke picture is, the--the whole operating picture. So, that's another function that they perform and then obviously in terms of the information sharing, the point is what we wanna do is get to them information as soon as we can.

>> Now, can you briefly explain the role that the Emergency Data Exchange Language plays in some of your interoperability components as well?

>> Absolutely. It might seem trivial to a layperson the idea of, you know, systems talking to systems, but it's anything but. We cannot have point to point communications. We have to have a sophisticated and meaningful architecture in the center that truly enables the vision of getting information quickly where it needs to go because there's so much information. You need the right information and it has to be distributed appropriately. Well--I mean clearly EDXL excels in that particular arena and so we--alright, you know, obviously a strong proponent of it. You know, that's the--at the envelope, right? You gotta get the envelope. The payload is there is the mean message and the data that we--that we need to get to the important decision maker. But the envelope is very important in carrying that information through the router system or what we employ to get the delivery done.

>> That's great. Is there anything else you'd like to add? Otherwise, I'd like to thank you for your time and your participation today, Bob.



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>> No, other than again thank you very much for the opportunity. We have a pilot--let me say a pilot is probably not the right word, a prototype or demonstration coming up in July that's gonna benefit from this, the work that you guys have already done. We're going to a number of partners, the relationships for instance that was established in Los Angeles will be revisited. We're going out there soon to build on what was done and we're looking forward in exchanging information regarding cargo rad/nuke screening of cargo information among some key federal partners such as CBP and ourselves and Los Angeles. Maybe New York as well, New York City area and a number of other potential players, but we'll see. But in July you never gonna probably at least have 3 partners and maybe look forward to taking this the next step.

>> Well, that's great. We're looking forward to helping in that area in participation. And if there's anything else we can do, please let us know.

>> Absolutely.

>> Thank you.

>> And we will be talking.

>> Alright.

[Inaudible Remark]

>> Thank you, Dr. Dilonardo, and then we are back here in LA. We are live again. I'm here with Cass Kaufman [phonetic]. She recently retired just about a month ago as the Director of Radiation Management for the Los Angeles County's Department of Public



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Health. Cass, thank you for joining us and congratulations on your retirement although I understand you are back in action again.

>> I have been called back to duty.

>> And what brought that on?

>> The Japan incident and short staffing, but primarily Japan. We wanted to be on top of it. And I obviously have a lot of experience doing this, so.

>> Well, let's talk about that? So, how are we doing? How are we--how is Japan fitting into this whole picture?

>> We are doing a lot of monitoring in the county.

>> Now? Wow.

>> And right now even as we speak we have--the telemetry system is running. We have a number of people, not just radiation management but Sheriff and LAPD and a number of agencies are on not 24/7 but they are intermittently over the last week, and we have been pretty much 24/7. And then we also have air sampling going on in the county. And we're doing some analysis of filter results to determine what nuclides might be on the filters. We know from Japan that we would be looking for specific nuclides that are not normally present. So, when we see those, we know that they came from Japan.

>> You know, and I was gonna ask you how you would use a system like this, you know, if there were a real incident.



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>> And this is such a good example of not only how we would use it but we are using it. So, it's running even as we speak. And we have our staff who have instruments with them at all times so we just tell them, "Turn everything on." They put it in their car if they're driving around. If they're at home working, they have it on in their backyard. And so we have the readings from various locations throughout the county that we're constantly monitoring.

>> How many sensors do we have out there?

>> At any one time, right now we have about a dozen going at any one time.

>> It's pretty good. So how--let's backtrack just a little bit and connect that to how the public health department was involved in the ICBRNE pilot project in the first place.

>> It was very exciting. We had had a vision of getting to where we actually are today. And the vision was that multiple agencies would be in the system, that their instrument would give a direct read that we could remotely watch from anywhere in the country. And so it isn't just we who could watch it, the Centers for Disease Control could watch it, the Food and Drug Administration can watch it, the Nuclear Regulatory Commission can watch it. Our state partners up in Sacramento can watch and live, they can see what we're measuring. And it is very exciting to have seen our vision actually come to life. And there are a number of different agencies on the system. I'm guessing Dave already talked about--about that, the number of people who are on.

>> And--and so it just exponentially increases the manpower that we have to respond to any incident. It's a real forced increase or with very little work on anyone person's part.



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>> That's amazing. That's just amazing. And it's even more rewarding I guess to say, you know, something did happen and we had the system in place and ready to go to test things out. So, I couldn't ask for better.

>> It is very exciting. The system is designed better for higher doses of radiation than what we're seeing from Japan.

>> Well, hopefully we won't have it.

>> And hopefully we won't get there, yes.

>> That's the whole purpose, right? We wanna make sure that we're not there.

>> Yes, that is the purpose.

>> Well, thank you very much Cass, I greatly appreciate it and--

>> You're welcome.

>> And coming back to--back to work to see us through the situation. I just want to add that we've talked about a lot of different things today and we see how emergency managers in metropolitan areas both large and small, they're responsible for responding to disasters and incidents of all kinds, and also for major events that are not disasters. Here in Los Angeles, you know, in Hollywood area, we got Grammys and the Oscars. We have major sporting events, we've got public and political events. And you know, there're all kinds of things going on and we've talked a little bit about some of those common everyday applications for systems like this in integrated information. So what I



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wanna do is now open this up and bring back to the table some of our key players in this whole project to kinda take a look at where things are going. So David Lamensdorf is back with us from Safe Environment Engineering. Jeff Waters is here from SPAWAR. We've got Chief Bob Kramer from the fire--the Los Angeles Fire Department, thank you again for joining us. We have Cass Kaufman from the Public Health Department, and of course Teresa Lustig who's our program manager with Department Homeland Security science and Technology Directorate. What we're gonna do is just kind of had--have a free 4 minutes. If you have any questions on the chat, we will try to get to them. But we're just going to have a little discussion about where we're going from here and kind of the important things that we need to take away from all of this. So we'll start off with whoever wants to go first and just talk about some of the lessons we've learned, where this goes from here as far as grant funds, standards requirements. I know, Chief, you are very responsible for making sure the standards requirements got into your procurement actions, those kinds of things. So, where do you wanna go from here? Let's start with you, David.

>> So I think--

>> That misdirection--

[Laughter]

>> I would like to state that this is very much been a regional project and it's been with help of all the different organizations throughout the region as Cass Kaufman was talking about. We've had participants from law and fire, military, health departments, all that are contributing together. Now, one of the things that we've been trying to do as this evolved is from some organizations that will help perpetuate that--that information, developed the policies and the use profiles and there's been two organizations that we've--that I'll certainly gonna encourage this within other regions as well too. We have a one group called the Consortium of Technical Responders that meets once a month to [inaudible] discusses incidents that occurred, technologies, information sharing policies and programs, and that has been enormously helpful. We also formed another group called the Los Angeles Regional CBRNE Network that is really helping create the ConOps, the policies necessary to drive information sharing of who gets what and under what circumstances, and then also working with us as the vendors to help make sure



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those policies get into the products that we've been developing as well too. So I do wanna make sure that Los Angeles region is, you know, mentioned here as all working together as one group and all these.

>> That's terrific, and we wanna try to talk about too as how people can get involved moving forward from here if they wanted to try to replicate this in their municipality, in their metropolitan area or anywhere, so what--

>> Again, part of what we've done with this project is put together a template. What did we learn, what would it take to put the project together and, you know, please use this as a template, modify it. We've done other programs. Cass, your department has put together what's called the [inaudible] which is another radiological response plan that helps brings the policies necessary for a response together. So we've been trying to put together the documentation to hand to others to be able to use as part of this growth process. And we're trying to grow it not--obviously not only up and down, but also horizontally to get other organizations participate from all different types of jurisdictions.

>> Chief, if you had to say something to folks out there about how to get involved or when you were really a key factor in getting things started here.

>> Well, I spoke earlier about the challenges that we enjoyed at the beginning of this effort. Quite frankly, I think that other agencies that are contemplating getting involved can now leverage all of this experience and background we've acquired and the improvements in the system quite frankly.

>> You're talking about the policy challenges?

[Laughter]



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>> That's--that's probably gonna be more of a challenge in some areas than others. I know that I can only speak for Los Angeles. However, in Los Angeles, I think we have a unique situation where the hazardous materials response community and their associated agencies are very close. We've had that ongoing for quite some time. That gave us an advantage locally at giving something like this, promulgated through those agencies quite frankly. And the other mechanism, I should point out once again was the funding mechanism. In a perfect world, I think based on my experience, we'd see this promulgated to all the urban areas as a start. You asked earlier what we, you know, thought about what would happen going forward. I think the momentum here locally is something now can't be overcome. It's a tide that's gonna sweep through this area and it's here to stay. I am pretty sure. The benefits have been demonstrated pretty [inaudible]. But for other agencies contemplating clearly funding is an issue. And so, that's something they're gonna have to address locally. But I would hope that at least the urban areas would consider this type of system. I can testify it to the fact that it is very enabling for the agencies that participate.

>> Great, thank you very much. Cass.

>> Oh, thank you. Just piggyback a little bit on what Chief Kramer and David said, one very positive outcome of this system was it helped us integrate our various agencies and operations even more than we had done before. And we were fairly well integrated before. But the telemetry system has definitely pulled us all into even a more combined response effort. And I think that it ensures good communication lines between the different agencies when something happens like this Japan incident or--not but a larger incident. The fire department, the public health department, the law enforcement, we are going to need to work together. And having all of us in this system I think improves our--our communication and integration efforts.

>> Thank you. Jeff.

>> You know, one thing I think about is--is people in the audience may feel that, you know, can they do the same sort of thing, you know, in their jurisdiction. Maybe they're not Los Angeles, you know. But I think what's key first of all is the leadership of the individuals in the city and county. And I know that there are people with--they can do that in other jurisdictions as well. But another thing is that we've tried to do this in a



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lightweight manner using standards that can be well understood and simple. So for example we've done web based displays so you can just bring up your browser and you can see the feeds just like we do with no extra tools or installation. At the same time, the standards that we used, you can--you could find out about them in the documentation and they are ones that you can understand and utilize as well in the challenged times that we're in. There isn't really an opportunity to go out and make big investments and things. But this is something that can be done now. Steps can be taken now I think at every jurisdiction to walk down this path. And we certainly have things to learn as well from things that are going on elsewhere.

>> And so sometimes just picking up the phone and giving a call to any--any of the folks here, the wonderful folks here on Los Angeles and folks who have been participating in this program would be happy to get a call and just chat if you have any questions, concerns, issues about how you can replicate this in your jurisdiction. Am I saying that correctly?

>> Yes.

>> Thank you very much. Now, Teresa, just wrap up 'cause we're quickly running out of time but I did wanna point out from the Science and Technology Directorate's perspective, this portion of a project is over.

>> That's right. We feel that we successfully demonstrated--and I wanna emphasize a process. Not exactly, I mean we--we showed how an example of how you can take some tools that we've discussed here and put a system together. But what we really wanna emphasize is the standards and the process so that whatever existing equipment and existing systems you have in place, you can do the same thing with those. I mean it doesn't have to be this particular system but whatever you already have in place.

>> And that's critical. And that's--that's really probably the one big take home point is it doesn't matter what equipments you have, it's just a matter of putting it all together and making it talk to each other.



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>> And our final report really emphasize that the lessons learned, all we went through, and all of the experience we gained from this pilot.

[Inaudible Remark]

[Laughter]

>> It's all there.

>> [Inaudible] on the final report.

>> The final report. This is sort of the template, or for those who are interested could take and duplicate where they are.

>> And all of these reports, all of the lessons learned documents and the final report are all gonna be on the ICBRNE website which is www.icbrne.org. Everything's gonna be posted there. Many of them are already there. I think it's just the final report that's not quite up yet, but probably around the end of the month we think it's going to arrive there. For your reference, once again, this entire webcast is gonna be archived and it's at the same URL you are on now watching this live webcast. You can come back and view segments over again and listen to the interviews, watch the videos, anything that you wanted to come back to for reference, that is all going to be there. Given a few days, probably about a week for us to get it all rendered and put up but it will be on this website in the near future. And the whole thing will be archived. I wanna thank all of you for joining us today and for helping us to get this message out to our important folks out there on the webcast, and thank all of you for spending your day with us. It was quite a bit of time to spend but I think we had to talk about some really important things. It's an essential application of standards to support integration of the emergency



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communication and critical data. So, with that, I'm John Verrico. I was happy to be your host today. You have a nice day.

[Music]