*Volume 15
Spring 2015*

Homeland Security

A Note from OEC Leadership

By: Ron Hewitt, Director, Office of Emergency Communications

During the past six months, the Office of Emergency Communications (OEC) has dedicated considerable resources to the release of the 2014 National Emergency Communications Plan (NECP) and raising awareness of its content. The concept of the emergency communications ecosystem, with its emphasis on the many interrelated components and functions of the ever-changing communications landscape, has emerged as a particularly important component of the NECP. Yet, as high-profile incidents - like the one that occurred on the Washington Metro on January 12th of this year - remind us, some of the biggest communications challenges first responders face today have as much to do with basic coordination and interoperability problems as the growing complexity of the emergency communications ecosystem.

At this juncture, it is important to maintain a balanced approach toward public safety communications planning and preparedness – one that accounts for the changing communications landscape but continues to emphasize the need to foster and maintain high levels of interoperability in all types of response situations. With this in mind, this edition of the Emergency Communications Forum highlights OEC's involvement in a diverse range of communications planning, preparedness, and support activities, demonstrating our commitment to ensuring interoperability across all components of the ecosystem.

In the feature article, Buddy Jacob, City of Boise IT Communications Division Manager, writes of his experience working with OEC to incorporate Wireless Priority Service (WPS) into Boise State game day communications to supplement Land Mobile Radio capabilities and ensure the safety of the 35,000 fans who regularly attend Broncos games.

We continue with an interview with Jeremy Knoll, Arizona Statewide Interoperability Coordinator, who tells us about the impressive, year-long emergency communications planning effort leading up to Super Bowl XLIX. Preparation included collaboration among more than 60 federal, state, and local emergency management and public safety agencies.

The next story explains how collaboration among private and public entities at the 2015 FIS Alpine World Ski Championships in Vail and Beaver Creek, Colorado, allowed first responders to use the first band class 14 LTE public safety demonstration network. First responders used the network to improve situational awareness in the thick crowds at event concerts and medal ceremonies and to communicate during times when radio channels and commercial wireless lines were in heavy use. The ski event gave us a glimpse of how public safety can use mobile data--something OEC is focusing on as more agencies begin to incorporate it into their communications efforts.

The article on the Quapaw Tri-State Interoperable Communications Tabletop Exercise showcases the important work of OEC's Interoperable Communications Technical Assistance Program, specifically in the areas of operational communications, operational coordination, and public information and warning.

Finally, we introduce two new mobile applications launched in support of the Communications Assets Survey and Mapping (CASM) tool, which received attention in the Summer 2014 edition of the Emergency Communications Forum.

Wireless Priority Service is Crucial to Communications at Boise State Football Games

By Buddy Jacob, City of Boise Division Manager, IT Communications Division
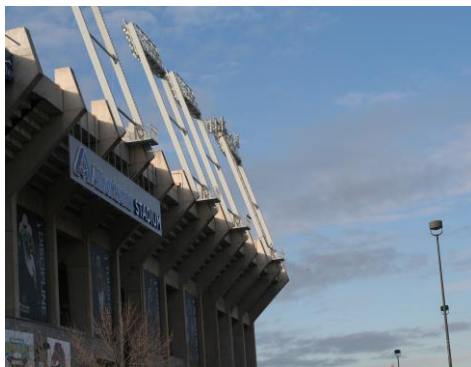
In college football, the Boise State Broncos are known for their signature blue playing field, a long winning streak, and a memorable 2007 Fiesta Bowl victory against a heavily favored Oklahoma. Because of the football program's success, the Broncos stadium has undergone several expansions in recent years. With its new skybox and additional seating, Albertsons Stadium now holds 35,000 people and is often near capacity during games.

This is all good news for Boise State—a successful football program, a larger stadium, and loyal fans. But for every home game, the growing number of people who crowd into Albertsons Stadium all come with phones in hand, and the volume of calls and the demand for mobile data overwhelm the wireless networks before, during, and after games. For fans, that means they can't always send or receive a photo, video, text, or tweet. For public safety personnel, however, it means the mobile phones that connect the many agencies that are at the game to ensure the safety and security of the Boise State community aren't always reliable.

To ensure the crucial calls go through, even when there is congestion on the network, the public safety team that supports Boise State games has been using the Wireless Priority Service (WPS), which is provided through OEC's Priority Telecommunications Services. WPS allows authorized government officials and public safety personnel to use special codes before dialing to gain priority on wireless networks and ensures crucial links between personnel and agencies are maintained. There is a similar program available for landline use called the Government Emergency Telecommunications Service (GETS).

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Incorporating WPS into Game Day Communications

Many of the agencies involved in public safety at the Broncos football games are linked via land mobile radio, including the Boise Police, Boise Fire, and Boise State Security, and the Ada County Paramedics. The communications plans we assemble before every game designate talk groups and assign channels for law enforcement, security, medical, and transportation issues, among others.

Also part of the communications plan is a list of agencies involved in security at the game that aren't linked together by radio. These include the National Guard's 101st Civil Support Team, there to monitor the stadium and surrounding areas for evidence of nuclear, biological, and chemical weapons, and other federal agencies, including the Federal Aviation Administration, which enforces a no-fly zone over the stadium during events, and the Federal Bureau of Investigation's Joint Terrorism Taskforce. A representative from each of these agencies is present in the Event Command Post at the game, which creates some interoperability and the ability to share information, but the team still must rely on the ability to make wireless calls at times.

In 2013, a water leak undermined the structural integrity of an older section of the stadium and a portion of the ceiling fell during a game. No one was seriously injured, but both the incident commander and the medical branch director were trying to call in additional medical resources to make sure any needed help was available. In the scary moments after the ceiling collapse, heavy use overwhelmed radio channels and mobile phone congestion prevented calls from going out. The delays could have been fatal.

Fortunately, the ceiling collapse was not serious, but it made it clear that first responders needed a reliable way to make calls through the wireless congestion that occurs at games. At that point, very few people in Boise had WPS and GETS accounts. A year later, the city of Boise has nearly 40 accounts and adoption is growing.

Now, in the pre-game briefing, we remind everyone that WPS is available and include dialing instructions on the communications plan. It was crucial to communications at a recent game when the Civil Support Team detected radioactive material at the stadium. It turned out that an individual watching the game had just had a medical test using a radioactive tracer and was still emitting a detectable level of radiation.

WPS allowed the Civil Support Team to stay in constant communications with Boise State Security and the Event Command Post as they identified the source of the radiation, and then allowed them to make a call to the hospital to discuss the situation and ensure the well-being of that individual.

Large traffic issues and other incidents that arise as everyone is heading home from the stadium are another time WPS becomes important. Although congestion at the stadium has eased, the concentration of use often filters out into the surrounding area and a traffic or security officer may need WPS to cut through the wireless congestion and maintain communications.

The success of the Boise State football team has propelled Boise into the national spotlight, and their games have become the kind of big stadium events that call for a thorough and carefully crafted communications plan. WPS gives us another tool to ensure that crucial connections can always be made.

Buddy Jacob is the manager of the IT communications division for the City of Boise and a certified Communication Unit Leader (COML). For more information on GETS and WPS or to subscribe, visit www.dhs.gov/GETS or www.dhs.gov/WPS

Coordination and Planning Lead to Successful Emergency Communications at Super Bowl XLIX

Interview with Jeremy Knoll, Arizona Statewide Interoperability Coordinator (SWIC)

The year-long emergency communications planning leading up to Super Bowl XLIX at the University of Phoenix Stadium in Glendale involved an impressive, multi-tiered effort of federal, state, and local emergency management and public safety agencies. There were a total of 24 Resource Working Groups (RWG) comprised of more than 60 agencies involved in the event, making coordination across the working groups paramount. The Interoperability RWG was tasked with meeting the communications needs of the 23 other groups, each with its own unique set of requirements. Jeremy Knoll, Arizona SWIC and Co-Chair of the Interoperability RWG, recently spoke to the ECF about interoperable communications planning. What follows is a summary of that conversation.

Can you provide a general overview of interoperable communications planning for Super Bowl XLIX?

The core planning group began preparing for Super Bowl XLIX about a year before the game by drafting a timeline of preparation activities and milestones. The core planning group was comprised of officials from city, county, and state agencies in the Phoenix metropolitan area. Additionally, federal agencies such as the FBI and U.S. Customs and Border Protection were involved in operational and communications-based planning. Twenty four RWGs were created under the core planning group and handled all aspects of planning and response: tactical, Explosive Ordnance Disposal, hazardous materials, infrastructure protection, and air support, among others. One of these working groups was the Interoperability RWG, chaired by myself and Jesse Cooper, acting Administrator of the Phoenix Police Department's Communications Bureau. The Interoperability RWG was responsible for establishing interoperable communications in support of the operational needs of the 23 other RWGs and incident management teams.

Phoenix also hosted the Super Bowl in 2008. What were some of the lessons learned from Super Bowl XLII?

The importance of coordination across working groups was a major takeaway from Super Bowl XLII in 2008. In 2015, we more proactively assigned members of the Interoperability RWG to liaise with each of the other RWGs. Each RWG and venue manager provided our group with their requirements so we could assign resources to support their missions.

What were some other successes resulting from coordination across RWGs?

Establishing relationships early in the planning greatly helped the management of the regional Project 25 trunked radio communications system that covers the Phoenix Metro area. We were able to focus resources accordingly and knew which channels were going to be used for each event. This allowed us to change channel permissions and balance out the system. The Interoperability RWG also facilitated the assignment of talk groups and talk paths to support operational needs and dealt with specific requests like channel dispatchers, encryption, and coverage requirements. By attending other RWG meetings, we learned which groups had portable radios that could talk on the system and which groups needed radios.

Speaking of radios, how many were deployed and how did you gauge the needs of your partners?

The Interoperability RWG deployed cache radio equipment to those without the necessary resources to work on our network. One of our big wins was acquiring, programming, and deploying 450-500 cache radios. We met all resource requirements and successfully returned all equipment.

What was the role of OEC within the Interoperability RWG?

The MACC, similar to an Emergency Operations Center, was the central point where all 24 RWGs met. It was staffed by certified COMLs and COML trainees who traded off morning and night shifts. This was a win-win for all involved. The COMLs could deal with the small issues and gain experience, while Jesse and I could focus on more overarching issues.

How did the commercial wireless networks hold up during the game?

Overall, it went extremely well. We had great dialogue with Verizon Wireless representatives, and they built up their systems according to our needs. In-stadium commercial wireless coverage was excellent due to a distributed antenna system and mobile cell sites that augmented the system sufficiently. We also enjoyed a good working relationship with the power companies, who were granted a channel within the stadium. I think this helped avoid a situation similar to what happened during Super Bowl XLVII in New Orleans, where there was a partial power outage at the Superdome.

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If Glendale hosted another Super Bowl, what improvements would you recommend?

A greater knowledge of the different branches within the federal government would enable us to better distribute resources such as cache radios. Also, we could perhaps spend more time planning for the increased data capacity needs of public safety users and work with our private sector partners to ensure contingency and capacity plans are fully vetted and accounted for.

LTE Demonstration Network at Ski Championship Gives a Glimpse into the Future of Mobile Data Use by Public Safety

Jennifer Kirkland, Operation Support Supervisor, Vail Public Safety Communications Center, and Eagle County Sheriff's Deputy Kevin Kromer stand in front of a poster promoting the LTE demonstration network.

During the 2015 FIS Alpine World Ski Championships, held February 2-15, in Vail and Beaver Creek, Colorado, the spectators' eyes were on the slopes as the best skiers in the world raced the downhill, super G, and slalom. The public safety community, however, was watching its own display of speed as terabytes of data traveled across the nation's first band class 14 LTE public safety demonstration network. Band 14 is the section of 700 MHz spectrum, known as the D Block, on which FirstNet will operate.

Multiple public and private entities worked together to bring the demonstration network to the two-week competition. The idea originated with the Safety and Security Committee, which was part of the planning groups organized by the Vail Valley Foundation for the event. That committee then approached the Colorado Governor's Office of Information Technology and Brian Shepherd, Colorado's single point of contact for FirstNet, for support. FirstNet granted a one-month spectrum license for the network, and Sonim provided ruggedized smart phones for public safety use with applications from SLA ESChat and Drakontas DragonForce. Crown Castle and General Dynamics donated their time and assets to provide the network connectivity and LTE equipment.

The network was only one part of a comprehensive regional communications plan that was created to ensure the safety and security of athletes, spectators, and visitors during the high-profile event. That plan largely relied on land mobile radio, with interoperability achieved across agencies and disciplines through the use of federal interoperability channels, but the LTE network gave first responders another tool.

According to Jennifer Kirkland, Operations Support Supervisor in the Vail Public Safety Communications Center and the co-chair of the Interagency Communications Working Group for the ski championship, first responders adapted easily to the user devices after only a brief training and used the network throughout the event—relying on it more when some radio interference issues arose.

Despite coordinating frequencies carefully and conducting multiple tests of their communications plan, Kirkland said first responders experienced radio frequency (RF) interference at the end of races and during medal ceremonies because of either media transmissions or the use of radios by some of the athletes and their support teams. Kirkland says they could not pinpoint the source of the interference, but public safety was able to use the LTE network to work around it. "When the RF interference reared its head at the finish line, they already had those LTE demonstration devices in their hands, and they wound up using those devices for communications at the finish line quite a bit," Kirkland said.

She also reported that public safety used a situational awareness application on their devices during concerts and award ceremonies when the crowds were thick and commercial data networks were overwhelmed. "With that many people, you can't really see your partners and you can't really hear your radio or your cell phone," Kirkland explained. "But because they had that situational awareness app, which also incorporated text features, they were able to see where their partners were and were able to text each other in an environment that was not limited by the commercial network."

FirstNet Colorado reported that 1.96 terabytes of data were sent and received by first responders during the two-week event. Beyond that data measure, Kirkland said the success of the LTE demonstration network was evident in the response of the public safety users who were eager to have greater access to it. Kirkland said the comment she heard most was: "We want it now, and we want more devices. We want everybody to be on this."

OEC regional coordinator Dan Hawkins, who focuses on Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming, said the Colorado Governor's Office of Information Technology has also requested OEC's technical assistance branch to perform "an operational assessment of that network" to better understand and evaluate the ways public safety used mobile data during the ski championship. This information will allow public safety agencies nationwide that are using or planning for the use of mobile data to benefit from the lessons learned in Vail.

Tabletop Exercise Allows Quapaw Tribe to Test Interoperable Communications

The Quapaw Tribe of Oklahoma received assistance from OEC's Interoperable Communications Technical Assistance Program to conduct an interoperable communications tabletop exercise and provide an after action report/improvement plan that identifies ways to strengthen interoperable communications.

On January 14, 2015, the Quapaw Tri-State (Oklahoma, Missouri, and Kansas) hosted the exercise at the Downstream Casino Resort in Quapaw, Oklahoma. The exercise focused on the communications interoperability required to respond to a multi-state, multi-jurisdiction, multi-agency incident. More than 82 participants

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representing 32 agencies from tribal, state, and local levels of government attended, along with representatives from seven private organizations.

The exercise scenario portrayed a music festival with more than 6,000 attendees and an additional 2,000 guests at the hotel and casino. A straight-line wind from a turbulent thunderstorm caused stage scaffolding to collapse and audio visual equipment to fall into the crowds. Dozens were injured.

As the exercise unfolded, 57 "players" responded to facilitated questions focused on emergency responder coordination; critical decision making; and the integration of the tribal, local, and state assets necessary to mitigate, prepare for, respond to, and recover from this scenario. The complexity of the scenario necessitated collaboration across jurisdictions and encouraged participants to identify weaknesses in three core capability areas: operational communications, operational coordination, and public information and warning. At the conclusion of the exercise, the players, observers, and evaluators participated in a hotwash to share observations, correct misconceptions, and improve interoperable communications in the tri-state area.

The exercise revealed strengths and successes, including participants who were well versed on National Incident Management System/Incident Command System procedures; evidence of well-established relationships between the Quapaw Tribe, public safety agencies, and private partners; effective use of social media; and the ability to leverage regional amateur radio operators to relay medical information.

The exercise also revealed some interoperability gaps, involving the need for improved governance structures and SOPs, issues with technology, and the need for more training in certain areas.

The Quapaw Tribal State Interoperable Communications Tabletop Exercise is an excellent example of disparate agencies working together to test response capabilities to ensure improved interoperability and effective communications in the future.

CASM Goes Mobile

One of the secure, free tools OEC's technical assistance program makes available the public safety users is the Communications Assets Survey and Mapping (CASM) tool, which allows users to inventory, share, and plan usage of emergency communications capabilities.

CASM provides a single database to manage information about public safety agencies, communications assets, and personnel, including information about who owns and uses assets, the location of assets, and the relevant points of contact. Further, the tool offers a method to find, filter, display, manage, share, and report the data, and standardizes information and data relationships nationwide in a common interface for all users.

Recently, OEC launched two new mobile applications (apps) to support CASM: the Public Safety Library (PS Library) Mobile App and the CASM Mobile Finder App.

PS Library is a cloud-based service providing access to a variety of public safety reference resources, including Statewide Communication Interoperability Plans, Tactical Interoperable Communications Plans, Field Operations Guides, and Standard Operating Procedures. Users can remotely store and access the latest version of public safety materials, upload and download files in a variety of formats, password protect files, and receive notifications when newer versions of files are published.

The Mobile Finder App enables users to locate mobile assets in the field and access the latest information for gateways, radio caches, and mobile communications units. The app's advanced features improve public safety incident response and interoperability planning with map and location-based capabilities such as device tracking, location sharing, and geographic terrain and landmark information.

Both apps are available for Android and Apple devices.

To learn more about CASM, PS Library, and the Mobile Finder app, visit OEC's Public Safety Tools Website at www.publicsafetytools.info.

OEC Team on the Road

As part of our stakeholder engagement activities, OEC will be participating in the following events:

International Wireless Communications Expo
March 16 - 20, 2015, Las Vegas, Nev.

Utilities Telecom Council Regional Meeting
March 23 - 25, 2015, Overland Park, Kan.

Government Emergency Telecommunications Service/Wireless Priority Service Service Provider Council Meeting
March 25, 2015, Reston, Va.

SAFECOM/National Council of Statewide Interoperability Coordinators Executive Committee In-Person Meeting
March 25 - 26, 2015, Portland, Ore.

One DHS Executive Committee Meeting
April 1, 2015, Arlington, Va.

2015 Virginia NENA/APCO Annual Spring Conference
April 22 - 24, 2015, Virginia Beach, Va.

Canada-United States Communications Interoperability Working Group Meeting
April 30 – May 1, 2015, Washington, D.C.

The Emergency Communications Forum (ECF), published by OEC, is intended to engage and inform the emergency response community, policy makers, and federal, state, local, and tribal officials about issues and events that directly impact everyday nationwide emergency communications.

Interested in contributing articles for future editions of the ECF? Please send any articles or content ideas to: OECOutreach1@dhs.gov.