Many changes are taking place in the mobile communications industry. The Jan. 1, 2013, VHF and UHF narrowbanding deadline has come and passed. In this State of the Industry, experts and users weigh in on the successes and challenges of the narrowband compliance requirements.

Because of the narrowbanding deadline and the need for other common system upgrades, many agencies opted to move to digital technologies. Individuals involved with the Project 25 (P25) standard spoke with *MissionCritical Communications* staff about the standard and its latest developments. Dealers and users of other digital technology — NXDN, TETRA and

Digital Mobile Radio (DMR) — discussed their markets and uses as well.

In 2012, legislation reallocated the D block to public safety and established the First Responder Network Authority (FirstNet) board that will oversee the building of a nationwide public-safety broadband network using Long Term Evolution (LTE) technology. As the public-safety community moves closer to broadband capabilities, technology developments are at the forefront. *MissionCritical Communications* staff interviewed several experts about the current state of broadband.

By Michelle Zilis and Sandra Wendelken

State of the Industry: Narrowbanding

Mark Crosby
**President and CEO
Enterprise Wireless Alliance (EWA)**

How has your narrowbanding workload been?

Extremely high, and many licensees used the requirement to narrowband their systems as an opportunity to upgrade their communication systems. During late December 2012, we received more than 1,250 requests seeking application certification and FCC submittal.

What percentage of licensees have completed narrowbanding?

I'm not positive, but it would be my expectation that more than 70 percent have updated their communications systems to comply with the narrowbanding mandate. We certainly hope that is the case. Those licensees

that didn't bother to update their licenses are easy to identify and approach. We should also be concerned about those operators, which may be as high as 10 percent of the universe in some areas, that have chosen to operate without proper authorizations.

Do you foresee problems between narrowband and non-narrowband systems?

Any problems will fall squarely in the laps of the non-narrowbanded systems, because they are operating in noncompliance with the rules and should receive little sympathy from both certified frequency advisory committees and the FCC.

What percentage of the applications are moving to digital?

An ever-greater number of licenses are moving to digital technology, and all of the various digital alternatives are popular. We have not maintained analog-to-analog, digital-to-analog or analog-to-digital statistics. We may start. If a licensee is maintaining analog system capability for narrowbanding compliance, they may either update their license records directly on the FCC Universal Licensing System (ULS) or seek assistance from a frequency advisory committee. ∎

Klaus Bender
**Senior Director of Standards and Engineering
Utilities Telecom Council (UTC)**

How is the FCC handling non-narrowbanded licensees?

In January, the land mobile frequency coordinators met with the FCC to discuss how to handle licenses for VHF and UHF systems that did not comply with the Jan. 1, 2013, narrowbanding deadline. In late 2012, the land mobile frequency coordinators recommended to ignore these systems when coordinating the new systems after Feb. 1, 2013.

The FCC said most licenses are narrowband compliant, and that the FCC is still getting waiver requests for the narrowband deadline. The commission staff urged licensees that have narrowbanded but haven't filed an application to file it now. The staff said that the Gettysburg,

Pa., licensing facility has a backlog of applications related to the deadline. The FCC will take through the first quarter to clear these applications.

The FCC will then consider an audit of noncompliant systems, giving those licensees one last chance to comply or cancel their licenses. The FCC plans to establish a single point of contact at its Enforcement Bureau for narrowband compliance issues. In the meantime, per FCC attorneys, the coordinators cannot just ignore those licenses. Until further notice, these noncompliant wideband systems will be considered as analog-compliant narrowband with an emission designator similar to 11K2F3E. ∎

Richard Besecker
Sheriff
Gunnison County, Colo.

How did the narrowbanding process go?

We completed narrowbanding last summer. The system has caused us a tremendous amount of grief because where we once had celebrated coverage, we no longer have it.

Narrowbanding was a long and tedious process, because several satellite agencies and other emergency responding agencies/equipment needed to change. We had to bring in a technician from out of town to do the change, and it was expensive.

Do you think it was worth it?

At this point, it was definitely not worth it. Somehow I hope that the theory proves me wrong. The system is more susceptible to static and electronic interference and feedback. However, sometimes I hear distant agencies and marvel at what might be possible. ∎

Ray Lehr
Interoperability Director
State of Maryland

How did the narrowbanding process go?

Maryland State Police didn't have to narrowband its system but the Maryland Transportation Authority Police (MDTA) and Kent County did. The state is building a new 700 MHz digital Project 25 (P25) Phase 2 system. We were able to get both agencies on the new MD FiRST system ahead of the FCC narrowbanding deadline.

Are you happy with the results?

Yes, the technology is geared to making public-safety users safer by providing reliability, clarity and features that were not available in our older systems, such as emergency buttons and GPS capabilities. Our old system wasn't simulcast so this system provides better coverage. The 700 MHz coverage was 10 to 20 percent better than predicted by modeling. And we have had no interference issues.

Was narrowbanding worth it?

Because our systems needed to be upgraded anyway, narrowbanding makes sense, providing more use of limited spectrum. ∎

Editor's Note:

The FCC reported Jan. 14 that 79.5 percent of the call signs required to be narrowbanded completed the official process, as tracked by the Public Safety Technical Assistance Tools website.

State of the Industry: **Project 25**

Jack Doane
P25 Steering Committee
Vice Chair

What are the focus areas for the P25 steering committee?

The Project 25 (P25) Steering Committee has been working closely with the Telecommunications Industry Association (TIA) during the past year to complete the P25 Phase 2 standards and specifications. This includes the standards for the two-slot TDMA technology with a 6.25-kilohertz spectrum efficiency equivalence, as well as the Inter RF Subsystem Interface (ISSI),

Console Subsystem Interface (CSSI) and Fixed Station Interface (FSI).

The Steering Committee also has been working closely with the P25 User Needs Subcommittee (UNS) and the Association of Public-Safety Communications Officials (APCO) International P25 Interface Committee (APIC) to further define and clarify the user requirements for P25 security services. The development and publication of these standards have enabled manufacturers to pro-

vide equipment using TDMA for trunked systems. Both the CSSI and FSI will be demonstrated among multiple vendors in March. The Steering Committee worked closely with TIA partners to develop a document that refined and reconfirmed the process in which user requirements are identified, developed and introduced into the APIC task groups and TIA subcommittees for standards development.

The Steering Committee approved 13 documents for publication in 2012 as P25 standards. Many of the documents were updates to the existing standards, although a number were new documents for new interfaces and test procedures. New documents of note include: TIA-102.BAKA *Project 25 Inter-Key Management Facility Interface*, TIA-102.CACE *Conformance Profiles for Basic Trunked Operation*, TSB-102.CBBL *Recommended Compliance Assessment Tests – Two-Slot TDMA Trunking Voice Channel Air Interface* and TIA-102.BCAF *Project 25 Phase 2 Two-Slot TDMA Trunked Voice Channel Conformance Profiles*.

The committee requested that APIC reactivate the Broadband Task Group, and to work with other user forums, such as the National Public Safety Telecommunications Council (NPSTC) broadband working group, to address a standardized interface between P25 systems and evolving broadband networks, most notably Long Term Evolution (LTE).

In 2013, the committee will work closely with TIA and APIC to generate and refine packet data standards, ISSI data standards, security services standards to include enhancements to link layer authentication and the development of link layer encryption standards, and complete the FSI standards. We plan to address P25 standards applications and the transition to broadband networks. Additionally, the committee intends to work closely with UNS to update the P25 statement of requirements.

How do you view P25's future?

The P25 Steering Committee members believe that P25 and LMR will continue to be an integral part of the mission-critical communications landscape for a number of years. As broadband and LTE evolve, there is an opportunity to integrate P25 and broadband data capabilities. Public-safety agencies have opportunities to use these communications methods for data to enhance their communications needs. The P25 Steering Committee asked APIC to evaluate the feasibility of standards for P25-to-LTE interface(s) that would allow the transport of P25 data, such as over the air rekeying (OTAR) and over the air programming (OTAP); other broadband data; and possibly voice over an LTE data network. The groups are working closely to address the user-driven requirements developed in NPSTC.

Should more users become involved in the P25 process?

We emphasize the importance of user participation in the P25 standards development. Recent budget constraints have impacted the ability for users to continue to participate. However, as we near completion of the process, a great deal of the activity revolves around updates of existing standards and security services. As P25 systems are implemented, the information and experience from the perspective of the system manager and technical personnel are critical to developing effective standards, including realistic test procedures.

The P25 Steering Committee bylaws provide a procedure to easily add voting representatives to the committee. There are 13 voting members representing nine public-safety associations and federal departments. ∎

Tom Sorley
Houston Deputy Director, Radio Communications and NPSTC Chair Technology Committee

How is Houston's new P25 Phase 2 network rollout?

We experienced a delay because of a firmware bug in the subscribers. We are in the process of touching each radio to upgrade its firmware and expect that to take roughly 90 days. We now anticipate a user cutover in the March/April timeframe.

How do you view P25's future?

P25 is here for the foreseeable future. I would like the interface standards to be completed so we can introduce competition into more areas such as dispatcher consoles. I would also like to see the Compliance Assessment Program (CAP) work get back on track. The Department of Homeland Security (DHS) program has been changing laboratory models, so not much has been happening in that arena.

How do you view vendor competition for P25?

Competition is better than ever but still needs to be driven by end-user agencies. The more agencies that introduce competition into their procurements, the better pricing and product offerings we can expect.

Will NPSTC's radio programming compatibility requirements work be helpful to P25 users?

Programming software is unique to each manufacturer. We anticipate that to continue because there are many proprietary features in a P25 sub-

scriber. However, if you manage a large system with a diverse ecosystem of subscribers, it is not practical to become an expert on all the different software packages. The goal is to establish a standardized format for exporting at least the information required for basic interoperability so that it can be used as a guide for the programmers. We would love for that to eventually be importable into the other vendor software or even have a tool that does the work. Obviously, the first step is to identify the requirements and then work toward a common format.

What would be most helpful to the P25 process?

It is a historic time to be involved in our industry with the nationwide public-safety broadband network beginning to develop. As with any time of change, those individuals who get involved and contribute can really mean the difference between average and outstanding. There are literally hundreds of opportunities to participate, and I would encourage the "regular Joes" to do just that. Many in public safety feel that to participate they need to be a technical genius or some renowned expert. In fact, it is a collection of everyday public-safety folks who continue to get involved and make a difference. ∎

Dereck Orr
Program Manager
Public Safety Communications Research (PSCR)

What are the latest developments with P25 CAP?

The Department of Homeland Security (DHS) is transitioning the assessment and recognition aspect of the Compliance Assessment Program (CAP) to an independent assessment and accreditation body. The program has been around for about five years, and it's time to transition these aspects of the P25 CAP to help it become a self-sustaining program. The transition to an independent body would institutionalize the program regardless of funding. Officials are reviewing the bodies that expressed an interest to participate. CAP labs would then be accredited to the International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) 17025 standard for compliant-testing laboratories in addition to the specific P25 testing competencies required by DHS.

The Common Air Interface (CAI) tests include conventional and trunked performance and trunked interoperability. After the transition to the independent body is complete, conventional conformance and interoperability testing could be added. Once new compliance assessment bulletins (CABs) are published, all product test documents must be updated within 12 months.

Is your staff working on the transition from P25 to LTE?

PSCR is testing P25 to Long Term Evolution (LTE) in its Boulder, Colo., lab. The laboratory houses P25 systems from two different vendors, Raytheon and Cassidian, which are used for the evolution testing. We are in the early stages of looking at these systems to see how you connect P25 and LTE and what still needs to be done. There will be a decade or more of separate voice and mobile data devices. As part of this effort, PSCR is working with the National Public Safety Telecommunications Council (NPSTC) to develop requirements with the user community for what they expect in connecting LMR to LTE in addition to developing a standards-based solution to meet these requirements. ∎

Basil "Bill" Pagones
Executive Director
Project 25 Technology Interest Group (PTIG)

What are P25's growth areas?

We have continued and additional interest from vendors and consultants to participate with PTIG, a group of organizations interested in advancing P25 standards. User interest and support continues to be focused on subscriber products deployed for first responders. Additional emphasis has been emerging from users seeking more information and counsel toward system expansions and additional infrastructure equipment planning. As late adopters and small agencies are overlaid by regional partners and add expansions, there is a growing demand for information and training to support P25 shared system resources beyond basic radio-to-radio interoperability.

P25 applications in other vertical markets beyond public safety exist, but are not well documented. The need for utilities, transportation and petro-chemical operations to maintain planned crisis event interoperability with government and public safety is an acknowledged benefit. PTIG's membership is dominated by public safety. Our commercial members, consultants and equipment vendors support other critical communications needs, but often as separate vertical markets within their practices. ∎

Herb Hess
Area Supervisor
Western Kentucky University
NXDN User

Describe your NXDN system.

Our system consists of four repeaters, public address (PA) systems, two antennas and related components such as a combining system and power supplies. The repeaters and antennas are located in Cherry Hall, one of the highest points in Warren County, Ky. The system has been on the air since late August 2012. We have more than 200 users spread across four main talk groups. I am waiting for another group of radios to come in, and we will expand it to five main talk groups. We are also having discussions with other radio users on campus to add them to the system. Our four main talk groups are maintenance, grounds, housing, and shipping and receiving.

Does campus security use the system, and is it connected to outside law enforcement?

The university police department doesn't use the system for day-to-day operations, but it has one of our radios tied to its console so we can communicate for maintenance issues or fire and security alarms that may arise throughout the day. We are not connected to outside governmental agencies, which use an 800 MHz trunked system.

What was the biggest selling point of NXDN?

We were experiencing growing pains with our old single-channel VHF repeater for years and were in desperate need of an update. The radio traffic was horrendous with more than 200 users on one repeater. I was keen on the NXDN technology for two main reasons. The VHF repeater and radios were Kenwood models, so there was the familiarity with the product and vendors. After confirming the coverage with the NEXEDGE system versus the repeater we had, I was sold. We also liked the features of the radios including the sound quality and individual identification. We also were having problems with individuals stealing radios and making lewd comments on the air; we liked the ability to go into the repeater programming and lock a radio out of the system, rendering it useless.

What other technologies did you consider?

The university sent out a request for proposals (RFP) and received proposals from three two-way radio vendors and one cellular company. The cellular proposal wasn't considered because of the high monthly costs, so we were left with the three radio technologies.

Looking over the bids with a fine-tooth comb, we chose the vendor that had the most complete bid. We are a picky and quirky bunch and want our problems resolved instead of having to learn a new technology; we want the technology to adapt to us instead of the other way around. The university as a whole is extremely satisfied with the service we have received.

How does the coverage compare to your old network?

Coverage with the new system versus the old one is night and day. The main part of campus is crammed onto 450 – 500 acres with a multitude of buildings and terrain elevations that present problems with radio coverage. We also have other properties in the area — a community college, a center for research and development, and the university farm — that had always been challenging when it came to radio communications. Since implementing the new system, those problems and concerns have vanished.

The only problem we have is in a 10- by 10-foot mechanical room completely shielded with steel reinforced concrete and sheet metal located about 20 feet below ground with a 200,000-square-foot building above it. In other words, we have no problems compared with what we used to have.

While not trained radio professionals, we have knowledge in the upkeep and maintenance of a radio repeater system and like to have the ability to make changes to programming. ∎

Bruce Marcus
Chief Technology Officer
Marcus Communications
Digital Mobile Radio (DMR) Dealer

Tell us about your customers.

I've probably placed a couple thousand DMR radios in the field. We have some big systems, such as the Barclays Center in Brooklyn, N.Y., with 500 DMR radios. We have several school systems that are averaging 120 radios a system and some single customers with 120 radios each. And we have smaller customers. We have some DMR with public-safety agencies, mainly for their detectives and other uses — not the whole department, but they are regional users.

We just started loading our DMR Tier 3 system a month ago, and already we have about 1,000 radios on the network with an average of 10 costumers. We've had it since November, but wanted to make sure we had all the features such as texting and GPS and dispatching working before loading it. Tier 3 is an open protocol based on the European Telecommunications Standards Institute (ETSI) standard.

We are installing DMR radios in 1,000 ambulances as part of their

communications to talk to central medical dispatch people. We have 12 sites statewide on our big network, and we're converting all to DMR. So those customers will be able to take advantage of the two-slot DMR and get more coverage. Digital, either in Project 25 (P25) or DMR, provides between 30 and 40 percent more coverage than analog, so they're anxious to make this move.

We have a large electric and partial gas utility in Connecticut that is looking at 10 channels of simulcast statewide with 50 talk groups and 4,000 radios, and they will be parallel to our network. We originally anticipated doing P25, but when the DMR product came out and we sourced a simulcast radio that could also do analog, it was a better fit. This has been overall the best two years we've had.

We've done a lot of simulcast — analog, P25 and DMR. Now we have a combination product that allows fire departments to be analog simulcast for paging but use the voice DMR. So they can buy analog/DMR radios and get two for one from analog channels.

What are the biggest selling points of DMR technology?

Audio quality, two slots, more capability, text messaging and encryption are some of the big advantages, as well as the weight, size and price point on DMR radios because it's a competitive market. I love open protocols.

Describe your school programs.

Schools are a big market for us. DMR's encryption is very important for schools. Some of our school systems are going to DMR because of the narrowbanding mandate.

We put everyone involved in regular school operations on the system, from maintenance to teachers to buses to security. It's one big network; they all have an emergency channel. People are amazed at the efficiency to make a network out of multiple repeaters and IP connectors. The industry is going IP and RF; they're one and the same now.

We've donated a complete radio system to Sandy Hook Elementary,

and all the major vendors in the industry signed on and are sending equipment free. It's about 100 radios.

What industries are the most interested in DMR?

Business/industrial, whether it is manufacturers, ambulances or medical. It's the whole plethora that used to be the regular analog market. And push to talk (PTT) is not going away even though carriers are now trying to push it. Carriers can't possibly give the reliability to local public safety or schools that their own system can give them, because once people start loading the system, they kill it.

I'm also a big fan of TETRA for certain applications. It's good for people who have 800/900 MHz channels and are legacy customers. It's a robust technology. For public safety, the P25 price point is more advantageous for some vendors. ∎

Dave Thuringer
Product Manager
Cartel Communication
** Systems**
TETRA Dealer

How is Canada's TETRA market?

People are pounding the pavement hard and heavy. There is a significant effort put out by all the key players, and everybody is holding their cards close to their chests and still trying to market at the same time. The market is very active and promising.

What's TETRA's selling points?

Most of the commercial industrial users have been force-fed a steady diet of, "This is what you've got available." So when they see what TETRA can deliver, their eyes are opened,

sometimes immediately and sometimes it takes a bit of demonstration. But what the technology can deliver is significantly different from what they are used to. So that whole dialog is one of enlightenment.

The biggest challenge we face is an educational one. It requires us to ask customers to have a close look. Just because you've bought from manufacturer X for so many years and they say this is the next thing, doesn't mean it's all you have. You've got to break that cycle and look at your options. We ask clients that are considering a migration or upgrade or significant update to radio communications infrastructure to look at TETRA. That's our message, and it's being received.

Not every application is a good fit for TETRA. The standard works well in business-critical, mission-critical and high-density applications. It is only available in the 400 and 800 MHz bands. So if you're in the VHF band and you've got to stay there, then there's no solution. Gating some of these opportunities can be quick, depending on what you have for spectral assets.

What markets seem the most interested in TETRA?

Definitely the utility market, as well as anything that operates in dense urban areas; it's a terrific technology for that. Other industries are transportation, mining, and oil and gas. These are all places where we have significant conversations going on.

Have you received any interest from public-safety users?

It's a matter of frequency, and then there's a political piece.

I suspect Project 25 (P25) in the public-safety market will be the dominant technology for a long time, and I don't think we're going to displace that. Cartel is not putting any direct effort into public safety. If a public-safety client came to us and said they are interested, we certainly wouldn't say no. We would look at the spectral aspects, the use case and if it is a good fit for TETRA technology. ∎

Sam Ginn
FirstNet Chairman

Has the FirstNet progress to date met original expectations?

The First Responder Network Authority (FirstNet) board understands the urgency of the task and is moving rapidly to get this network up and running as expeditiously as possible. At the same time, we understand that a critical part of this process is outreach to all interested stakeholders to ensure that their views are adequately represented. This takes time, and FirstNet during the next couple of months is laser focused on developing an operational, financial and network blueprint, as well as coordinating with the National Telecommunications and Information Administration (NTIA) as it rolls out the State and Local Implementation Grant Program (SLIGP), which will fund much of our critical consultations with state, local, tribal and other stakeholders. Overall, I believe we are on track to accomplishing our goals.

How will FirstNet reach out to state and local agencies?

FirstNet will consult with the stakeholders in each of the 56 states and territories, tribes and regional groups. The SLIGP will provide funding support for stakeholders to participate in that consultation process with FirstNet.

In addition to that formal consultation process, FirstNet will keep reaching out to stakeholders however we can, to gather input on how best to deploy a wireless broadband network. One venue for this ongoing dialogue will be our work with our Public Safety Advisory Committee (PSAC).

We want to ensure all of our stakeholders have a say in how the network is designed, built and utilized. Although we don't yet know what this network will look like, our stakeholders' input is critical as we work on an architectural model for the nationwide network. While Craig Farrill and I gave conceptual presentations at the first FirstNet Board meeting, those presentations were intended as a starting point for continued discussions.

We understand that there is no obligation to subscribe to this network, so we need to offer a compelling product. For these reasons and more, we will constantly seek input from the public-safety community on their user requirements. We'll be asking questions such as: What are your particular needs? Do you have any unique challenges? How do you envision this network working? What types of applications would you like to see? How do you plan to use the network?

Following the first board meeting, NTIA put out a notice of inquiry to solicit input on those conceptual presentations. NTIA received 133 comments. A wide range of stakeholders submitted comments, including states, local and tribal entities, public safety, telecom companies, utilities, consultants, equipment manufacturers and others. We are thankful for the commenters' input and have benefitted from them as we move forward with our planning activities.

What are the latest developments of the board?

FirstNet board members are working to make this nationwide public-safety broadband network a reality.

We've completed our visits to each of the Broadband Technology Opportunity Program (BTOP) project sites, and a working group of the board is finalizing the project assessments and preparing recommendations for consideration by the full board.

Jeff Johnson and Harlin McEwen, PSAC chair, have been hard at work completing the final membership and organizational structure of that key stakeholder group. ∎

Jim Bogner
Iowa Statewide Interoperability Coordinator (SWIC)

Has the FirstNet progress to date met original expectations?

Yes, it appears so from what has been publicly released and discussed at the open board meetings. I am encouraged to see that FirstNet members have visited the BTOP grant recipients already to gather information about their projects and look for ways those projects can be resumed and leveraged for the network.

What's the best way for FirstNet to contact state and local users?

FirstNet needs to have frequent and detailed two-way discussions with the PSAC. FirstNet needs to share its vision and seek input from the committee and its subcommittees, which includes a state and local government subcommittee, to gather input from their constituents and report back to FirstNet with that critical input. That process will demonstrate the transparency that FirstNet said it would operate under.

Will the network be able to meet the needs of rural public-safety agencies?

I am very hopeful that it will. This component will determine whether FirstNet is a success or not. In December, Iowa completed a statewide broadband survey and is anxious to share that data and input with FirstNet. Because Iowa is considered a rural state, this data should help FirstNet in its design to meet the needs of the rural public-safety communities. I think this effort would benefit every state in its discussions with FirstNet.

State of the Industry: Broadband

On Jan. 24, Iowa obtained the first special temporary authority (STA) license in the country to use 700 MHz band 14 spectrum from FirstNet through the FCC. We will use this STA for a Long Term Evolution (LTE) demonstration project to educate and inform our public-safety and elected officials during February about the coming of the nationwide public-safety broadband network and the technology that it will use.

What is the best strategy to meet rural needs?

It is hard to say without knowing the proposed architecture of the network. Clearly feedback is necessary from the rural areas on any proposed network architecture about whether it is viable and affordable for the rural agencies. ■

Emil Olbrich
Project Leader, Demo Network and Pilots
Public Safety Communications Research (PSCR)

What are the latest developments with the public-safety broadband demonstration network?

We are finishing phase three interoperability testing and have cycled through testing evolved packet cores (EPCs) with radio access networks (RANs). Eight vendors supplied six full EPCs, and we have RANs from four vendors. The testing involved using one vendor's EPC and one vendor's RAN and integrating them against each other to evaluate their interoperability. We're taking a system-level approach.

We will present the results and the performance of the vendor equipment in a nonattributable format.

What future tests are planned?

The FCC looked at outside, on-the-street coverage. There is a need to determine metrics for indoor coverage for technology. What is the penetration — first wall, second wall, etc.? So we are developing tests in this area. We are looking at small cells and how they fit into the network. We have three RAN vendors of small cells.

A small cell has half the power of large cells with 5 watts or less. They might be used in a parking garage for instance. They are new technology in LTE Release 10, so we are pushing the envelope a bit. We are coordinating this work with our in-building coverage testing. We also have drive testing ongoing, implementing a system-level diameter routing agent (DRA), Android smartphone deliveries and testing and several other things we're coordinating with FirstNet on. ■

Chris Essid
Deputy Director
Department of Homeland Security (DHS) Office of Emergency Communications (OEC)

What support will OEC provide to FirstNet for broadband?

Under the bill, the DHS secretary serves on the FirstNet board, and the under secretary is a FirstNet steering committee member. OEC supports the Safecom executive committee, which advises the FirstNet PSAC. In addition, we will hold workshops to update the state plans and provide technical assistance to states on broadband deployments. We will also coordinate with stakeholders to update the national emergency communications plan (NECP) for broadband.

We will also coordinate with the Office of Cybersecurity and Communications on infrastructure risk assessment. Our office will help ensure the requirements of the $135 million National Telecommunications and Information Administration (NTIA) state and local implementation grant program are consistent.

How will OEC help public-safety practitioners?

OEC has accepted 40 state-requested technical assistance (TA) broadband planning requests. This makes broadband support the most requested TA deliverable for fiscal year 2013. In addition, we have several tools that public-safety officials can leverage, including the Communications Assets Survey and Mapping (CASM) tool that includes state and local input. And OEC is working to coordinate the federal user requirements for federal users. ■