PUBLIC SAFETY REPORT

COMMUNICATIONS SOLUTIONS FOR PUBLIC SAFETY

The past year has brought a flurry of activity in pubic-safety communications, with most State of Public Safety participants noting the 700 MHz D block, 800 MHz rebanding and plans for narrowbanding as their top priorities this year. "They all tie together as many of us are involved in and are planning for all three at the same time," says Curt Knight, executive director of the Public Safety Communications Commission for the Arizona Department of Public Safety.

Most participants also agreed that Project 25 (P25) has made substantial progress and that the Compliance Assessment Program (CAP) set to begin later this year will further propel the standard. The Inter RF Subsystem Interface (ISSI) demonstrations are also significant in moving multi-network interoperability forward. "The tide is turning dramatically for P25," says Joe Ross, partner at Televate.

Knight, Ross and other public-safety communications leaders provided their input for the 13th annual State of Public Safety report. We asked public-safety association leaders, communications managers, federal officials, academics, attorneys and consultants to provide their opinions on a range of issues. With the upcoming presidential election and major decisions around the 700 MHz D block still pending, the upcoming year will likely be just as full of change as the past year. We hope you find the following information useful to your agency or business. ■

How will the **Public Safety Interoperable Communications (PSIC)** grants affect interoperability?

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Executive Director
Public Safety Communications Commission
Arizona Department of Public Safety

Chris Fischer
President
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Joe Ross
Partner
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Knight: It depends on how well the state and locals handle the 80:20 split, whereby 80 percent of the dollars must go to local agencies, and the state administers the remaining 20 percent. Nationwide, did we get our act together and find a way to use 100-percent of the funds toward a solution to service our collective needs? The PSIC grants will provide much-needed equipment, but in the past there hasn't been enough consistency from agency to agency with a statewide focus. Arizona's PSIC money is directed to develop a statewide system with strong support of the local agencies.

Fischer: If the money is used for its intended use, which is to provide for better interoperability among public-safety agencies, there should be a positive impact on the problems faced by many agencies across the country. There are a variety of solutions to achieve interoperability among public-safety agencies, and this grant funding will allow for the deployment of solutions that best suit individual regions of the country.

Ross: The PSIC grants should tremendously boost interoperability. The grant program forced states to implement interoperable plans and governance and should pay off with huge dividends during the next three to five years. ■

What else needs to be done to boost interoperability?

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Lindsey: Industry Canada released a consultation paper on radio interoperability (SMSE-005-06) in June 2006, which examined the definitions and levels of radio interoperability that would be used by the department when releasing spectrum for public safety. Comments received on this paper were generally favorable, and a decision will be out later this year. The department recognizes that radio interoperability is only one piece of the interoperability puzzle. More research and initiatives to bring the partners together to share best practices is required to improve radio interoperability within Canada.

Cross-border interoperability is more of an operational issue; we are aware that there is ongoing work among the public-safety agencies to improve cross-border radio interoperability. Although it's only part of the solution for cross-border interoperable communications, when designating dedicated public-safety spectrum, Industry Canada endeavors to harmonize, wherever possible, with the United States. An example of this is the department's January consultation on the 700 MHz band (SMSE-004-08), which proposed to align with the recent changes made in the United States to the public-safety narrowband 700 MHz band plan.

Knight: We need to foster that group of people working on all aspects of interoperability problems across all levels of government: the Federal Partnership for Interoperable Communications (FPIC). They've got a good groundswell and have started to involve a lot of people including federal, state, local and tribal users. The FPIC allows a federal focus point that includes the federal user community so state and local entities don't have to coordinate with numerous federal agencies. They need to be fostered and given funding and ultimately the authority to make more federal, state, tribal and local interoperability projects a reality.

McEwen: Efforts to improve local and statewide governance models have been significant, but federal funding needs to be substantial and ongoing to support these efforts. The Public Safety Interoperable Communications (PSIC) grants will be helpful; public safety needs more substantial and ongoing funding over a period of many years.

Michalson: The Worcester Polytechnic Institute (WPI) is in the process of establishing a Public Safety Integration Center, which focuses on the integration of communications, information and navigation technologies for public-safety applications. By studying these problems in a noncommercial, academic environment, we hope to gain insight into the best ways to integrate available technologies in ways that address the concerns of public-safety users.

Ross: Prices need to come down. While a multiband Project 25 (P25) radio is great, at $5,000, it's available only to wealthy governments for all personnel. Multiband radios — VHF, UHF and 700/800 MHz — need to be affordable so statewide or rural agencies operating at VHF can seamlessly communicate with metro-area networks typically using UHF and 700/800 MHz. To achieve this goal, we need to use compliant P25 systems. If more bells and whistles are needed above and beyond standard P25, they need to happen while supporting basic voice interoperability. Affordability will happen as the demand for such radios increases and costs decline from consolidated chipsets.

We need infrastructure that is truly vendor neutral. Tweaks to the P25 standard from infrastructure vendors that result in sole-sourced radios will continue to undermine interoperability and increase overall costs.The public-safety community must be flexible. Caution is fine, but caution that gets in the way of progress is not. The P25 standards must be modified

to allow for interoperability of devices and networks without programming radios or leveraging a radio cache. Within seconds, an incoming qualified user should be able to request and be granted access to needed network resources and personnel. On-call dispatchers or communications specialists can help manage their access centrally and leverage their subscriber devices.

The national broadband network must be integrated with local proprietary and P25 networks. Preferably, this should happen over the P25 Inter RF Subsystem Interface (ISSI) with access to a multitude of talk groups and with all the features of P25 ISSI roaming and interoperability.

Broadband devices must be built with P25 narrowband capabilities to support peer-to-peer communications and operate as backup on P25 networks. Devices that can meet the same level of robustness as LMRs might help reduce the impact of multiband interoperability challenges; for example, a rural VHF/broadband radio that could communicate with urban 700/800 MHz narrowband users.

Continued and increased federal grant funding is required to continue to advance national voice and data interoperability. Long-term, public safety needs to find other low-frequency broadband spectrum for high-capacity, rural broadband access. Commercial systems in Europe use UHF bands. Synergies with these bands could result in economical rural deployments.

Orr: The momentum that has built during the past several years has to be maintained. Many important programs and projects address various aspects of the interoperability continuum, but many will take time to complete and will require sustained participation from all of the stakeholders that have been involved to date. ■

Has communications **interoperability improved** during the past year?

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Orr: The continued advancement of the Project 25 (P25) standards and the move toward a formal P25 Compliance Assessment Program (CAP) will certainly help. Most importantly, it's apparent that more jurisdictions are working together to develop multiagency/regional plans, which is the key to success when talking about interoperability.

Michalson: Improved? Yes. Improved significantly? No. More technological building blocks have emerged that will, no doubt, be useful in improving interoperability. However, real improvement at the city, county and state levels requires more support than political divisions can handle. This leads to individual "interoperable" regions that don't interoperate with adjacent regions. While this is clearly a step in the right direction, it also creates system design challenges when connecting incompatible regions. Is this improvement? It depends on which side of the fence you're on.

Knight: It feels as if we are beginning to finally make some headway. Technology continues to improve, particularly in the areas of the Inter RF Subsystem Interface (ISSI) and true multiband subscriber radios. However, we also need to make sure we don't overlook the elements of governance and standard operating procedures (SOPs), which are as important as technology in the interoperability equation.

Ross: Yes, however, the most profound impacts will have delayed operational impacts. The vendor community demonstrated the benefits of the P25 ISSI. I believe the importance of this is monumental. Public safety will soon have the ability to roam like cellular phone users do on disparate systems and communicate across multiple systems. This will have tremendous benefits in the long run and will enable more interoperable communications on more spectrally efficient and flexible trunking systems.

The CAP program will also have benefits down the road. While it's not a formal compliance-testing program, it will go a long way toward helping governments around the country understand how vendors measure up against the P25 standards. ■

McEwen: If a new shared wireless broadband network (SWBN) is built, I believe you will see increasing use of VoIP for non-mission-critical voice communications. With continued narrowbanding of public-safety voice channels, data — other than slow-speed text messaging — will only be practical if a nationwide SWBN is built. The network will provide public safety with nationwide interoperability.

Ross: In 10 years we should be at the point where communications is transparent to public-safety personnel. They will no longer need to worry about which network they're using at any time. Communicating with an individual or group will be intuitive and will not require a technician to preprogram radios. Where there's need and permission, communications will be seamless. Incident commanders will have more flexibility in the field to create talk groups and provide visiting users permission to access local talk groups and dynamically create new talk groups. The devices that arrive on scene will support the band of the incident — because new Project 25 (P25) devices support multiband communications or because VHF, UHF and 700/800 MHz networks will be overlaid to provide such interoperability — and the cases where technology becomes an impediment to communications will be rare.

On the data side, in 10 years we should offer public safety any mode of communications — voice, video or text — to any individual or group of individuals. Communications will be better integrated with CAD systems. Information will be at the fingertips of all who need it. Building blueprints will be automatically displayed for firefighters as they arrive on scene. Advances in in-building location systems will result in the ability to track firefighters inside buildings without expensive equipment. Geographic information systems (GIS), automatic vehicle/personal location systems and situational awareness solutions will be the norm. Video will have made significant progress. Digital video recording (DVR) systems will have wireless communications transmission components, and almost all senior public-safety personnel will have devices that can transmit and receive video images. Next-generation 9-1-1 (NG 9-1-1) systems will send video, images and 9-1-1 calls from the public and via dispatchers and call-takers to en-route first responders so they're equipped with all possible information before arrival.

An affordable, public-safety-grade, national broadband network interconnected with proprietary, analog and P25 networks throughout the country is the primary basis of the system. The system will be backed up by state and local government emergency deployable broadband systems and satellite services for multiple levels of redundancy for any circumstance. The devices will be affordable because they use global standards-based chipsets and software-defined radios (SDR). Completely open and comprehensive broadband standards result in a variety of device manufacturers with the ruggedness and features that public safety needs at an affordable price.

The system uses IP multimedia subsystem (IMS) or a similar solution to provide communications capabilities for all modes of communications — voice, video and text — by leveraging either the D block infrastructure or new hardware operated by a public-safety broadband operator. The IMS platform will be integrated with the public IMS platform, providing seamless interoperability with public systems, such as NG 9-1-1 and interoperability with hospitals.

Improvements to the P25 suite of standards will allow for robust competition that will drive down infrastructure and subscriber pricing. Within 10 years, competition for

What voice and data solutions will we see 10 years out and how will that be accomplished?

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P25 systems and radios will have significant traction; pricing will be on par with TETRA systems. The improved competition will result in a dramatic increase in functionality that will provide an ever-increasing capability over LMR.

Orr: Certainly, as the availability of broadband services and technologies increase for public-safety use, there will be an incredible opportunity for all kinds of new applications that will meet public safety's specific needs, including video services, mapping and localization.

The question is, "How will this be accomplished successfully?" As new technologies and services become available to public safety, a concerted effort is needed to ensure that public-safety governance structures, policies and procedures, and training programs keep pace with what will likely be fairly rapid changes in what will be possible technologically.

"Better adoption and implementation of standards-based technology will likely be the result of economic necessity."

— Brian Fontes

Haller: We are at the doorstep of major changes in wireless communications. The commercial 700 MHz auction winners have a great opportunity to begin providing services thought impossible not long ago. Except perhaps for Dick Tracy, who would have believed that one could download video to a portable telephone-like device? Today, that is a reality. Tomorrow brings the hope of even more enhanced services.

On the public safety side, even at the time of the Public Safety Wireless Advisory Committee (PSWAC) only a little more than a decade ago, the hope for nationwide interoperability seemed an impossible dream. Once the D block winner is known, that dream becomes reality. Wired and wireless services are merging to provide a ubiquitous communications

platform, linking the world together. Communications services can help solve the oil crisis by making work at home and virtual meetings more prevalent, eliminating the need for commuting or travel. So, anyone who wants to be a player in the future had best reserve their seat on the Super Chief or be left at the station wondering what happened.

Fontes: High-speed, high-bandwidth mobile applications enabling the seamless sharing of all types of data, including voice, text and images, at speeds beyond our current system capabilities. As commercial systems become more robust, I predict that public safety will become increasingly satisfied with its options for non-mission-critical communications. Also, there is likely to be better coordination and cooperation with the private sector to leverage commercial developments, rather than relying on stand-alone public-safety technology to meet specific public-safety needs. Public-safety communications requirements should be incorporated into general commercial standards development wherever possible. Better adoption and implementation of standards-based technology will likely be the result of economic necessity.

Smith: Mobile resource management (MRM) with GPS solutions will be widely adopted, mainly for increased efficiencies and cost control. Also, data interoperability will be key as well as solutions that complement mission-specific applications and tie them together without requiring customers to replace the many disparate existing systems. And let's not forget the widespread adoption already under way of commercial, national/international push-to-talk (PTT)/dispatch communications services that customers are tightly integrating into their dispatch operations — this is truly a changing paradigm and will surely expand in the coming years. ■

What is the best option for the 700 MHz D block spectrum?

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Poarch: Historically, there has been a lack of available public funding to create a nationwide, interoperable, broadband communications network for public safety. Absent that level of public funding dedicated to such an important initiative, the most viable tool available to the commission to accomplish this goal is the creation of a public/private partnership. This may be the only option available to us to try and solve what has become a public-safety communications crisis. The commission is exploring this and other options for the D block in the open 700 MHz second further notice of proposed rulemaking that was adopted in May.

The only option that isn't viable is doing nothing. The tragedies that this nation endured as a result of the Sept. 11 terrorist attacks and Hurricane Katrina have taught us that something must be done to address this critical communications need for America's first responders.

McEwen: Develop rules for and move forward with another D block auction that will result in a public/private partnership to build a shared wireless broadband network (SWBN) that will provide a new nationwide public-safety broadband network.

Fontes: I believe a public/private partnership remains the best alternative, but it will only work if there is more certainty about the relationship between the public safety broadband licensee (PSBL) and the commercial D block partner. The FCC and public safety should work cooperatively to develop incentives for commercial interests to participate in the D block auction.

NENA would support the following incentives:

- D block licensee's access to high-cost Universal Service Funds (USF) for buildout in rural areas;
- D block spectrum shouldn't be included in commercial license transactions in the event the commission uses a "screen" to assess a commercial licensee's spectrum holdings;
- Reasonable reduction in buildout requirements, for example, reducing the 99.3-percent geographic buildout requirement;
- Fifteen-year license term rather than the current 10-year license term;
- Reducing or eliminating the reserve price and penalties in the event of a failed "good-faith" network sharing agreement (NSA); and
- Access to public-safety facilities for antennae siting, where feasible.

While providing such incentives, we must ensure the broadband network is designed and managed to meet the requirements of public-safety communications to the greatest extent possible. The requirements of public safety may need to be implemented over time rather than at the onset of network buildout. The PSBL board should have the expertise needed to work with a commercial wireless partner and with the public-safety manager. The board should have, in addition to public-safety representation, experts in funding, technology and operations.

Fischer: The Association of Public-Safety Communications Officials (APCO) International continues to support the concept of a private/public partnership for a broadband network and looks forward to the decision by the FCC.

Knight: I read the majority of the reply comments to the 700 MHz second further notice of proposed rulemaking that closed in July. There continues to be a strong divide in opinion about whether public safety should partner with the commercial sector in developing and funding future systems. If not, then how would we ever fund large nationwide or multistate regional systems? There have been creative suggestions in how to best establish an acceptable balance between the

public and private interests, one of which is to auction the spectrum, and then through a Public Safety Spectrum Trust (PSST)-type body, administer the auction proceeds to build public-safety systems. Undoubtedly this option won't be popular with Congress.

I have certain reservations about assuming commercial systems can be made financially sound while also serving public safety's needs. Likewise, I also have reservations about having a public-safety network dependent on and funded by commercial services.

Ross: The best option is one that brings public safety onto the same national network meeting public safety's needs in performance, control and price. There are many potential solutions to this problem, and there's no one-size-fits-all approach. The economics differ between rural and urban areas; some governments prefer to build, and others prefer to buy service. Ultimately, it's unclear if a private entity will provide the needed solution at the right price.

The best solution is one where a private entity builds an affordable, robust network. Bidders should provide pricing on enhancements to coverage and reliability. Governments could then contribute funding to meet public-safety mission-critical data needs. To satisfy the concern for local control, the PSBL spectrum needs to be made available to state and local governments for backup systems (emergency deployable systems) so in the event of a disaster, locals can restore communications rapidly. The question is whether the commercial community will support such an option.

There must be a satellite-based backup that is affordable nationwide. There are methods to provide satellite coverage within the 700 MHz band as a backup — using different polarization or by remotely turning on spot beams during outages. While the capacity over satellite will be greatly diminished, some wide-area communications is better than none.

If no one is willing to partner with public safety at any price, the best solution is one that leverages the National Capital Region (NCR) model, uses a national standard(s) for interoperability and provides positive return on investment (ROI) for the majority of metro areas throughout the country. In the remaining areas, it may be feasible to use satellite services, government-subsidized buildouts or leverage lower frequency allocations to cover more footprint per site. Over time, broadband equipment will become more affordable and will cover more area per site. Therefore, during the next 10 years it may become more economically feasible in rural areas built by the government. ■

Fischer: Obtaining FCC recognition that wireless E9-1-1 accuracy needs to be measured at the public-safety answering point (PSAP) level was significant for the Association of Public-Safety Communications Officials (APCO) International and public safety in general. It's critical that the accuracy of E9-1-1 calls be a priority to enable PSAPs to deploy the appropriate resources to the correct location. There is still a significant amount of work to do to make this a reality; however, APCO International will continue to work with the wireless industry and the FCC to make improvements in this area.

APCO International has dedicated resources and will continue to support a visible and active presence in Washington. We must continue to educate lawmakers about the critical issues facing public-safety communications agencies. We will continue to strengthen our partnerships with other associations to create a strong and united position on a variety of public-safety issues. We will continue to work closely with the FCC to insure that public safety has a strong voice in regulatory matters. We will also continue to work closely with the wireless industry to achieve wireless accuracy for wireless 9-1-1 calls.

Fontes: While public safety has had many successes during the past year, there's always room for improvement. I'm always an advocate of increased collaboration and cooperation. The National Emergency Number Association's (NENA) needs and goals will be better achieved by working together with other public-safety groups, industry, government and all other relevant stakeholders. Our objectives and requests of policymakers must be broadly supported within the public-safety community and across the industries that benefit from our services, such as the insurance industry and health care. We must reach out to educate others on the benefits they derive when public safety is fully funded and have them work with us to achieve our mutual goals. Finally, public safety, if well organized, stands to be one of the most effective grassroots movements in America, and we have only begun to tap our potential.

What are public safety's biggest **Washington and Industry Canada accomplishments** this year, and how can it do better?

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Kevin Lindsey
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Industry Canada

Derek Poarch
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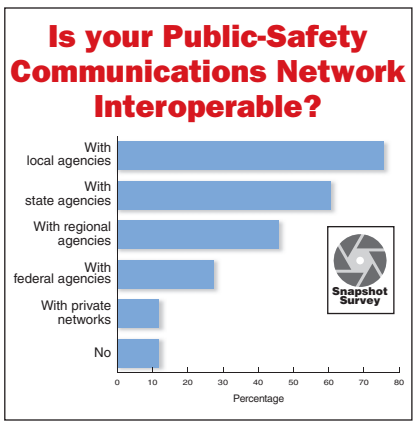
Lindsey: Two initiatives have impacted the public-safety industry in the past year in Canada. One of those is the establishment of a license fee for the use of the RF spectrum in the 4.94 – 4.99 GHz band for broadband public-safety communications. The other is our recent consultation on the designation of TV channels 64 and 69 for public safety.

"Public safety, if well organized, stands to be one of the most effective grassroots movements in America, and we have only begun to tap our potential."

— Brian Fontes

Poarch: There are a number of things that have been significant accomplishments for the Public Safety and Homeland Security Bureau (PSHSB) this year; I would hesitate to say any one was the biggest accomplishment. We have undertaken considerable efforts in a variety of areas, including large-scale policy initiatives such as the 700 and 800 MHz proceedings, seeking to improve 9-1-1 and E9-1-1 services, continuing our work on the nation's emergency alert system and homeland-security issues, enhancing our outage monitoring capabilities and launching the new Disaster and Information Reporting System (DIRS), implementing rules under the Warning Alert and



Response Network (WARN) Act to provide for a commercial mobile alert and warning system, participating in governmentwide emergency planning, and enhancing our clearinghouse and outreach efforts.

These priorities have all taken considerable effort and focus, and I feel the bureau has come into its own as a valuable resource to the public-safety community, our federal partners, industry and commission.

Schwaninger: Increased homeland-security funding to provide necessary augmentation to local budgets.

Ross: Consensus that public-safety interoperability is worth funding. The D block value, unencumbered by public safety, could be worth $9 billion. Congress and the FCC are willing to forgo this amount to accomplish national interoperability.

Public safety can go a long way to get increased support from Washington by providing a clear plan. Because of the fragmentation of public-safety decision making, there is no clear plan forward for public-safety communications. The Public Safety Interoperable Communications (PSIC) grant programs may be a method to resolve those issues at a state level, but not nationally, and the money is insufficient to solve the problems. We need a national strategy, and states, counties, cities and the federal government all need to work together to fund and implement the solutions.

We need to show progress with the money Congress has already provided. Positive results are an indicator that public safety can effectively solve its problems if provided the resources. If Congress perceives it's simply throwing money at the problem, the funding will dry out, and more federal oversight could step in.

The national plan needs to be public safety led, vendor agnostic, as well as drive technology, governance and standard operating procedures that make communicating via radio as simple as using a telephone. Unfortunately, companies with a vested interest are often the voice that Congress hears. As a result, their technologies or products get promoted as the solution, and often they're just stopgap measures. ■

How has Project 25 (P25) progressed during the past year?

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NIST OLES

Mike Miller
President and CEO
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Dr. William Michalson
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Curt Knight
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PSCC, Arizona Department of Public Safety

Orr: During the past year, the standards committees in P25 have continued to actively produce important standards documents related to the critical P25 interfaces, namely the Inter RF Subsystem Interface (ISSI), Console Subsystem Interface (CSSI) and Fixed Station Interface (FSI). Because of the progress in the ISSI standards, an increasing number of vendors are demonstrating their ISSI products and how those products will interoperate with other vendor implementations.

Miller: The selection of P25 Phase 2 technology is a big deal in the industry. While the Phase 1 standard has been around for a long time, customers are interested in a seamless path to 6.25-kilohertz efficiency and its associated capacity gains. P25 standards bodies need to move quickly to ratify the Phase 2 standard approved in 2007 so manufacturers can release Phase 2 products.

Michalson: I think some of the significant progress of P25 relates to an acknowledgment that not all P25 radios interoperate and that testing to a common set of standards is a necessity.

Knight: The ISSI continues to be a headline. In Arizona we will be deploying a demonstration project online as of August that will link two different systems: the Yuma Regional Communications System (YRCS) and the Phoenix Regional Wireless Network (PRWN). They have the same manufacturer, but we'll be demonstrating ISSI features as currently defined by the P25 standards. ■

What is the best option for 700 MHz narrowband operations?

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Fischer: The best option for narrowband operations at 700 MHz is to postpone the required move until the D block licensee is selected and to raise the cap on reimbursement for relocation expenses.

Haller: Complete the relocation of existing narrowband systems, finish the regional plans and start building systems.

Poarch: The 700 MHz narrowband public-safety band provides much-needed spectrum that may be used to strengthen local, state and regional public-safety networks. Given that all networks in this band must be Project 25 (P25) compatible, this will particularly enhance the opportunity for interoperability among a variety of agencies and jurisdictions. This spectrum will be particularly advantageous following the February 2009 DTV transition date, when the spectrum will become widely available to the public-safety community.

McEwen: The FCC needs to develop amended rules to accomplish the relocation of the 700 MHz narrowband channels that have been moved as the result of the new public-safety broadband spectrum chart. The Public Safety Spectrum Trust (PSST) has already spent considerable efforts to accomplish this, and the FCC needs to increase the amount of funding available to support public safety in the relocation.

Knight: The fire service and others recognize we will always need a voice tactical, simplex — maybe even at times analog — mode of operation when there is a systems failure, as well as for critical daily operations. We need to make sure that's always part of our solution, regardless of what happens with the D block auction. Spectrum still needs to be available and the technology needs to allow for a conventional, non-infrastructure-based mode of operation, and the fire service is leading that charge.

Ross: In many urban areas across the country, there is a significant shortage of narrowband spectrum. In those areas, use of 700 MHz narrowband is paramount for mission-critical voice communications. Along border regions, and in extremely dense urban areas, even the significant capacity of 700 MHz narrowband may be insufficient. In these areas, it's important that the governments have the flexibility to meet their needs with other spectrum allocations.

I see a future whereby the narrowband spectrum at 700 MHz serves as the primary voice communications method for particular groups of public-safety personnel; however, most other users leverage broadband networks for typical communications on a daily basis. In the event of outage or failure of the broadband network, those who need mission-critical voice communications will have dual-mode devices that support P25 and will operate on P25 networks as a backup.

As an additional backup, unit-to-unit communications will become a critical element to the need for anytime communications for public safety. Talk-around capabilities will be a necessity that can't be overlooked and underscore the need for broadband/P25 dual-mode devices.

We should seek to leverage the national broadband network for data to the greatest extent possible especially in urban areas to maximize narrowband spectrum availability for mission-critical voice communications. CAD, computer-based law-enforcement database queries, common mobile video codec solutions, and patient tracking and information systems must become commonplace for improved operational and communications efficiency. Over time, with more reliance on data, the capacity needs for narrowband voice will decrease, resulting in opportunities for a long-term shift from narrowband to broadband on some public-safety spectrum. Increased use of data could reduce the strain of narrowband congestion in urban areas and border regions. ■

Fischer: Traditional funding methods will have to be revisited and adjusted to deal with the ever-changing technologies available to deliver 9-1-1 calls. It continues to be a challenge for public-safety answering points (PSAPs) and 9-1-1 programs to fund the costs that support E9-1-1. A review of these traditional funding strategies will clearly need to be considered as 9-1-1 technologies continue to evolve. This will require close coordination among local jurisdictions, state 9-1-1 regulatory agencies, industry associations and federal regulators so that their collective interests and needs can be addressed.

We still have a significant number of communities that don't yet have full E9-1-1 capability or wireless Phase II functionality. While continuing to support technological advancements such as next-generation 9-1-1 (NG 9-1-1), we can't neglect the important public policy challenge of finding ways to support consistent levels of traditional wireline and wireless 9-1-1 call processing. The Association of Public-Safety Communications Officials (APCO) International continues to support the full funding of the Enhance 911 Act of 2004, as well as keep an open dialog with administration and congressional leaders to continue to find ways to assist local communities with their greatest needs.

Fontes: First, state and federal laws need to make it clear that 9-1-1 funds collected from users of telecommunications services may be used only for their intended purpose: to advance the 9-1-1 system. This issue has been addressed by the recently signed federal legislation, HR 3403, but it is now up to states to comply with the law.

Second, states need to consider streamlining the overly complex and highly varied 9-1-1 fee structures, which are often different depending on the type of service and the area in which the service is offered. Several states are moving toward a simplified system of a single fee for all communications services, which will make it easier to collect and administer 9-1-1 fees.

Third, policymakers need to take a careful look at the current surcharge/fee-based 9-1-1 funding methodology to see if that's really the most effective way to fund 9-1-1. There may be other funding mechanisms that are worth exploring. For example, Congress created the Schools and Libraries Program as part of the Universal Service Fund (USF) requirements. Perhaps it's time that Congress creates the Public Safety Telecommunication Program as part of the USF requirement. Then, prioritize the use of monies from this fund to ensure that the nation's 9-1-1 system has next-generation technology and that funding is also available for the public-safety broadband network.

Fourth, funding methodologies must include provisions for future technological developments. In the past, all aspects of the 9-1-1 system were designed solely for the delivery of 9-1-1 calls, and most technology resided locally in PSAPs for use by that single PSAP, with 100 percent of system costs borne by 9-1-1 governing authorities and individual PSAPs. In a NG 9-1-1 environment, this shouldn't be the case because PSAPs will be connected to an emergency services IP network (ESINet) — a network used for 9-1-1 purposes that provides other emergency services as well. Also, in a NG 9-1-1 environment, PSAP hardware, software and database functions can be hosted in the network for the shared benefit of many agencies, rather than having all technology hosted locally for the benefit of a single agency. These technological developments affect funding decisions, and must be recognized by policymakers and other agents of change. ■

What is the best way to address E9-1-1 funding problems?

Chris Fischer
President
APCO International

Brian Fontes
CEO
NENA

"Close coordination among local jurisdictions, state 9-1-1 regulatory agencies, industry associations and federal regulators is needed so that their collective interests and needs can be addressed."

— Chris Fischer

Are next-generation 9-1-1 (NG 9-1-1) technology and standards progressing quickly enough?

Brian Fontes
CEO
NENA

Derek Poarch
Chief
PSHSB, FCC

Fontes: A significant amount of progress is being made, but with the necessary support, progress can be accelerated. The National Emergency Number Association (NENA) is working toward a goal of full NG 9-1-1 system deployment, beginning the initial rollout in the third or fourth quarter of 2009. Significant coordination among NENA, like-minded public-safety groups, international standards development organizations and industry leaders will be necessary. To that end, NENA is providing a leadership role through our own NG 9-1-1 project. However, this isn't just a technology issue; significant policy, regulatory and legislative concerns must be addressed parallel to the technological development, standards work and implementation planning.

> **"A significant amount of progress has been made, but with the necessary support, progress can be accelerated."**
>
> — Brian Fontes

Poarch: The evolution of 9-1-1 technologies to capitalize on IP-based services and systems is ongoing at a pace consistent with the ability of localities to plan for, budget for and accomplish the upgrades necessary. Technology will always precede the actual implementation, but public-safety entities are aware of the potential that IP-based services can provide.

Under the tutelage of NENA and the programs of the National Telecommunications and Information Administration (NTIA), a great deal of progress is being made in moving local public safety to NG 9-1-1. We hope that this progress will continue. ■