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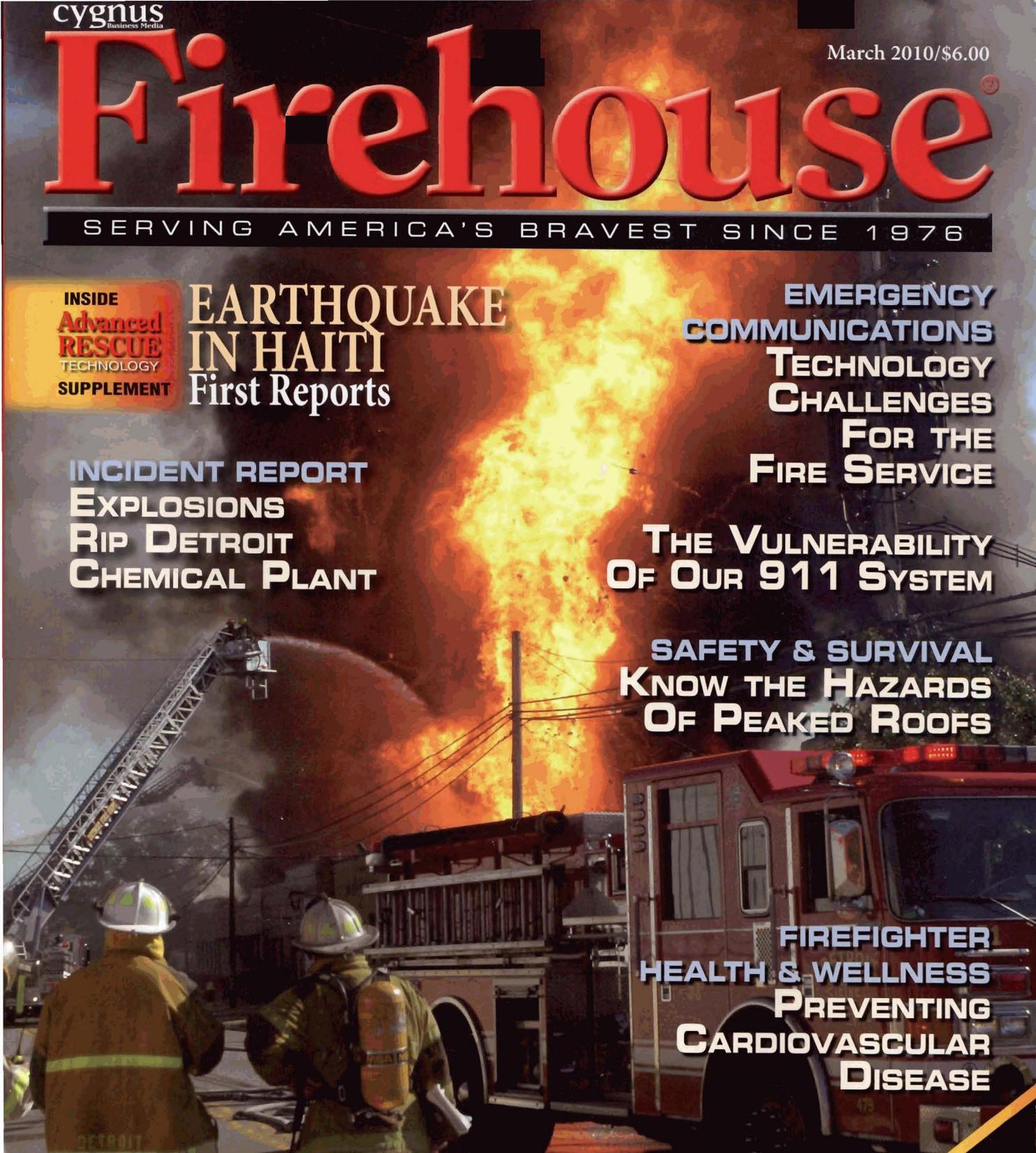
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# Emergency Communications: A Parallel Path

## *Maintaining Legacy Systems While Developing a Broadband Path*

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Over the past several years, I have written about the hope for a national public safety broadband wireless network to provide affordable broadband capabilities for all public safety organizations across the nation at the tribal, local, state and national levels. The hope for such a network remains high and growing momentum is demonstrated by discussions among national public safety organizations, the White House, Department of Homeland Security (DHS), Department of Justice (DOJ), Federal Communications Commission (FCC) and more. Throughout 2009, I began to hear decision makers at various levels of government (both appointed and elected) stating a belief that broadband was the near-term panacea for all public safety communications for both voice and data. The plethora of smart phones, enhanced commercial broadband coverage and TV shows like "24" have collectively influenced many that land mobile radio (LMR) missioncritical systems are archaic and could be replaced by the new broadband technology in two or three years. To further confuse and raise concern, the statements were expanded upon that LMR systems are a thing of the past and that most if not all of the attention and funding should be focused on broadband. A potential result would be that funding for existing and new land mobile radio systems would be dramatically reduced and/or eliminated. This is a dangerous direction.

### **Coverage Concerns**

Unfortunately, broadband services are nowhere near ready to replace LMR systems and will not do so for many years. First, there is the issue of coverage in many areas throughout the country, especially rural and tribal communities where the broadband signal is inadequate nonexistent. Even if broadband coverage resolved, there are no broadband devices that exist today that can communicate peer to peer (talk around) in

the absence of a network as required by public safety.

In a letter to the FCC dated Oct. 12, 2009, International Association of Chiefs of Police (IACP) Communications and Technology Committee Chairman Harlin McEwen wrote, "There are no technical broadband standards in place or planned to provide the one-to-many communications and talk around (unit-to-unit) capability needed for mission-critical public safety voice communications. Public safety agencies have already spent millions to deploy LMR voice systems in the narrowband 700-MHz spectrum with many more deployments being planned." Mission-critical LMR systems are defined by their ability to meet minimum requirements of coverage, capacity, redundancy, reliability, priority access and security. Presently, commercial broadband systems do not meet this level of performance. Another issue involves digital radio vocoders and the challenges with high-noise environments that must be addressed for devices to be used in a public safety digital voice mode.

Now that it has been established that LMR mission-critical voice radio systems are here to stay for many years, it is important to address the new and great promise of public safety communications via broadband data. The potential of broadband data is huge! Unlike the cultural barriers that have existed within LMR missioncritical voice systems, data has the ability to communicate across disciplines and governments and transcend organizations seamlessly. Although the decision makers' belief that broadband could replace LMR in the near future was incorrect, their vision of broadband data's potential was and is dead on.

### **Dual-Path Strategy**

As I prepared to testify at the FCC's Field Hearing on Requirements for Public Safety Broadband in November 2009, I examined these two important components of public safety communications (voice and data) and, with the help of dedicated people at the Office of Emergency Communications and the SAFECOM Executive Committee,

drafted a conceptual diagram that helps to put each of these components into context by developing a dual-path strategy. Simply, that means that we must continue to support LMR systems while simultaneously developing a national public safety broadband wireless network and the standards and devices that will enhance the ability to share information/intelligence between all of the agencies (mission critical and beyond) that have a need to access that information. This type of data will enhance a community's ability to prepare, respond and recover from catastrophic events and be more effective in day-today operations.

Additionally, the development of new applications will dramatically expand the ways that data can be used similarly to what is being demonstrated by the proliferation of smart phones. The good news is that the Public Safety Spectrum Trust (PSST) and the National Public Safety Telecommunications Council (NPSTC) are working on a list of functional needs that can guide the development of such applications. The significance of data to interoperability is documented as one of the key elements in the SAFECOM Interoperability Continuum.

Other progress on this front includes the very good work being done by the Public Safety Communications Research (PSCR) labs in Boulder, CO. The same teams that have been working diligently on the digital noise issue are working to validate the broadband requirements by developing a 700-MHz broadband system in the lab; stay tuned.

### **Broadband Services**

While all of this is being contemplated, there is every reason for public safety to explore (and many are) the existing commercial broadband services and learn how they can enhance your operations today. My experience is letting me use Sprint broadband services in the form of air cards or MiFi devices to access a variety of information while operating in the field or while in a moving vehicle (not driving) such as a vehicle or train. I presently use these

broadband resources to communicate over our locality's Motorola 800-MHz mission-critical trunked radio system in a Radio-over-IP (RoIP) mode through a Catalyst Communications client or through the Sytech RIOS device. This capability lets me communicate by voice and data from anywhere that I can achieve a wireless connection.

In summary, LMR and broadband are necessary for public safety to do its very best. Looking forward, we must "begin with the end in mind" and push broadband development with the hope that there will be a convergence of voice and data and that mission-critical voice and data can reside on the same network and satisfactorily meet the

needs of public safety. To effectively coordinate this, the Office of Emergency Communications and SAFECOM are including this dualpath strategy into the National Emergency Communications Plan (NECP).

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