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What's the PLAN? Mobile Emergency Alerts Coming to NYC & DC by End of 2011

by Lisa Fowlkes

The Personal Localized Alerting Network (PLAN) (technically known as the Commercial Mobile Alert System (CMAS) is coming to New York City and Washington, DC!

On May 10th, FCC Chairman Julius Genachowski, FEMA Administrator Craig Fugate, New York City Mayor Michael Bloomberg and top executives from the nation's four major nationwide wireless carriers, came together at Ground Zero in New York City to announce that PLAN will be deployed in NYC and DC by the end of the year, almost four months ahead of the deadline set forth in the FCC's rules.

In 2008, the Commission adopted rules establishing PLAN pursuant to the Warning, Alert and Response Network (WARN) Act. Under the Commission's rules, Federal, state, tribal and local governments may send alerts to PLAN which will authenticate the alert, verify that the sender is authorized and then send it to participating wireless carriers. Participating carriers then send the alerts to PLAN-enabled mobile devices located in the affected area. Under the WARN Act, wireless carrier participation in PLAN is voluntary.

PLAN is the result of a unique public/private partnership between the FCC, FEMA and the commercial wireless industry. The FCC adopted and now administers the rules governing the wireless industry's participation in PLAN while FEMA and participating wireless carriers are working together to develop, test and deploy the system.

Under the FCC's rules, participating wireless carriers must begin PLAN deployment by April 7, 2012. Thus far, over 100 carriers have indicated that they will participate in PLAN. Since the WARN Act's enactment in 2006, the Public Safety & Homeland Security Bureau has taken a leadership role in making PLAN a reality.

What's so special about PLAN?

- ★ **Alerts are geographically targeted.** PLAN allows emergency managers to target alerts to consumers who are in the affected area. So, for example, a customer living in Washington, DC would not receive a DC government-issued alert if they happen to be in Philadelphia when the alert is sent. On the other hand, someone visiting downtown Washington from Philadelphia on that same day would receive the DC government-issued alerts. This requires a PLAN-enabled mobile device and participation by the wireless provider in PLAN.
- ★ **Consumers only receive the most critical emergency alerts.** Consumers with PLAN-enabled mobile devices will receive only three types of alerts: (1) those issued by the President, (2) those involving imminent threats to safety of life; and, (3) AMBER Alerts. Consumers may set their PLAN-enabled devices to block all alerts, except those issued by the President.
- ★ **No fees to receive PLAN alerts.** Participating wireless carriers may not charge subscribers a fee to receive PLAN alerts.
- ★ **No subscriber sign-up.** Consumers do not have to sign-up for this service. As long as they have a PLAN-enabled mobile device and their wireless carrier participates in PLAN, they can receive PLAN alerts.

NG9-1-1: Moving Emergency Calling to the Internet Age

by Henning Schulzrinne

The national 9-1-1 system is probably the most visible part of public safety communications and crucial to both dealing with the smaller-scale emergencies that happen every day and managing large-scale incidents. According to the National Emergency Number Association (NENA), an estimated 240 million 9-1-1 calls are made each year in the U.S.

The first 9-1-1 call was placed on February 16, 1968 in Haleyville, Alabama. Initially, a 9-1-1 call was simply routed to the Public Safety Answering Point (PSAP), i.e., the 9-1-1 call center, attached to the local telephone switch, but a number of enhancements were made through the years, many with FCC regulatory involvement and encouragement. The last major enhancement was the delivery of location information from cell phones, starting in 2001 based on an FCC mandate.

In several aspects, 9-1-1 technology was ahead of general commercial technology, presaging features such as geographically-based call routing for 800 numbers, for example. However, the underlying technology for 9-1-1 has not changed substantially in 20 years, relying in many places on so-called CAMA trunks for voice calls and conveying caller numbers. As we saw during some of this winter's 9-1-1 outage events, such trunks

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NG9-1-1: Moving Emergency Calling to the Internet Age

by Henning Schulzrinne (cont'd.)

can fail in "interesting" ways and are rapidly becoming an exotic technology not supported by common commercial communication equipment. In addition, all location information is obtained by mapping phone numbers to database entries, requiring an intricate interplay of trunks, modems and databases that in turn interface with cellular positioning technology. Indeed, PSAPs are probably one of the few large-scale commercial users of 19.2 kbaud modems today.

The existing 9-1-1 system is voice-centric and does not support other media now taken for granted by consumers, such as text, photos and videos. For example, callers who are deaf have to rely on TTYs to reach PSAPs, even though an ever smaller number of deaf individuals use this outdated technology. (Deaf callers can also use video relay services to call 9-1-1, but experience has shown that the call setup delays can exceed five minutes.) Behind the scenes, PSAPs often have difficulty transferring calls and associated call information to other PSAPs, causing difficulties during high-load situations and disasters affecting larger regions, such as Katrina. Given these limitations, the public safety and technical communities have recognized for a number of years that a fundamental upgrade of the 9-1-1 system is called for.

There is general agreement that the new system should be based on VoIP and IP multimedia technologies and should incorporate routing calls based on modern Geographic Information Systems (GIS), rather than static phone-number databases. However, beyond the technology details, there are at least three broader goals, namely to create a system that can evolve more easily as consumer technology and expectations change, to increase the use of commercial off-the-shelf technology to allow more rapid evolution and lower costs, and to create a system that allows PSAPs and other public safety entities to cooperate across larger geographic areas to increase reliability and resiliency. The overall effort is known as Next-Generation 9-1-1 (NG911). The basic technology for NG911 has been developed and standardized starting in 2001. While there are still some gaps in standards, e.g., for data exchange between PSAPs, the basic architecture and network protocols have been finalized, allowing interoperability testing of commercial software at the ICE interoperability test events. A number of commercial providers are now offering components for an NG911 system, but the transition remains challenging.

The US 9-1-1 system is highly fragmented, with more than 6,000 PSAPs, many of them very small and with limited access to technical expertise or, in some cases, funding for upgrades. Since it is impossible to upgrade such a large and critical system all at once, we have to allow both old and new functionality to co-exist for a number of years, using various gateways and overlay networks.

PSHSB has been involved in 9-1-1 issues since its creation and continues to play a leading role in this area. Currently, there are three major efforts: A team is working on rules and an FNPRM to update the location accuracy requirements, taking into account the needs of a next-generation system.

We hope to better integrate a range of location technologies that will not only help consumers locate the nearest coffee shop, but accurately dispatch the ambulance to the coffee shop if someone happens to be choking on a bagel.

A Notice of Inquiry on NG911 explored some of the core issues, e.g., what kind of media to support, what new devices and services should be able to call 9-1-1 and what standards and interfaces are necessary to ensure interoperability. We have been meeting with vendors and the public safety community to flesh out many of the questions, getting a much better sense of the challenges the whole community will face during the transition.

Besides technical and coordination challenges, funding the transition will be crucial, particularly given the strained local budgets. As NG911 is rolled out, there will be additional capital and operational expenses as PSAPs have to maintain both the "legacy" technology and implement and integrate the new NG911 systems. Thus, a team in PSHSB, has been working on creating a cost estimate for the network side of the NG911 transition.

For public safety, the transition to NG911 offers tremendous opportunities to improve emergency response. This transition has to be seen as part of a broader effort within PSHSB, with the transition of two other important parts of the public safety communications infrastructure to IP, namely public alerting and first-responder field communication via public safety broadband. There is an opportunity to create a unified network that allows seamless communication in all aspects of public safety communications, from the caller reporting an incident, to dispatching first responding to alerting the public. Along with some of the other on-going changes, such as narrowbanding, this represents the largest change in how public safety communicates since the advent of radio – and thus offers a unique opportunity for the Bureau to help shape and improve the future of public safety communications. ■

Upcoming Events

- July 8, 2011 - Emergency Access Advisory Committee Meeting, FCC Headquarters, Washington, DC
- July 12, 2011 - Open Commission Meeting, FCC Headquarters, Washington, DC

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Questions or Comments? Email any questions or comments related to the content of this bulletin to Kim Anderson (kim.anderson@fcc.gov).