

Eye on Washington

By Jim Hobson

Three years ago, the first steps toward wireless E9-1-1 were embodied in an agreement reached between three public safety organizations and a wireless industry association. That high-level consensus on goals since has become bogged down in myriad quarrels over means of implementation. It is time for new consensus.

The 1996 Agreement

When the FCC in 1994 first asked for public comment on applying Automatic Number Identification (ANI), Automatic Location Information (ALI), Selective Routing and perhaps other wireline-tested enhancements to wireless 9-1-1 calls (E9-1-1), public safety and the wireless industry were some distance apart. Despite general agreement that E9-1-1 - the ability to receive a callback number and to locate a caller- is important for wireless telephony as it has been for wireline emergency communications, the particulars were much disputed.

The differences arose from means rather than ends. Public safety groups wanted FCC regulations and a timetable for compliance, while most industry commenters argued for voluntary efforts toward the ANI and ALI goals. Some even felt that the very existence of mobile telephony was a boon to safety that should not be stifled by government interference. A breakthrough came with a “consensus agreement” reached between NENA, APCO and NASNA, on one hand, and the Cellular Telecommunications Industry Association (CTIA), filed with the FCC in February in 1996.

The major points of consensus found their way into Section 20.18 of the FCC’s rules. By October 1997, sometimes called “Phase Zero,” access to 9-1-1 from wireless phones, both voice and text telephone, was to be accomplished without such commercial interruptions as “user validation.” By April of 1998 (Phase I), Public Safety Answering Points (PSAPs) could begin to request 10-digit ANIs and seven to ten-digit pseudo-ANIs (PANIs). A PANI is a numerical identifier for the wireless cell site or sector first receiving a 9-1-1 call, and represents a crude first approximation of the caller’s location. In Phase II, by October 2001, location is to be refined to a caller’s latitude and longitude within 125 meters RMS-RMS being a statistical expression for how many for how many will miss by how much.

Importantly for the wireless industry, neither Phase I nor Phase II obligations would take effect until (1) the PSAP showed it could receive and utilize the data elements of ANI, PANI and lat-long ALI to perform reliable selective routing; (2) a mechanism existed for reimbursing the wireless carrier’s reasonable costs of upgrade to provide the service; and (3) the PSAP actually requested Phase I or Phase II service.

Implementation to Date

Thus far, not many PSAPs have requested Phase I service, despite the passage of nearly 12 months since the April 1998 threshold. NENA has been surveying PSAPs in an effort to learn why. As of September 30, 1998, 589 questionnaires had been returned out of about 3700 mailed. Of the returns, only 41 answered affirmatively to Phase I implementation. This was seven per cent of those responding but only a little over one per cent of the total recipients. The 584 respondents who answered negatively gave as their principal reasons (a) lack of funding and (b) PSAP equipment not ready. Other reasons included carrier unreadiness and "state legislative issues."

Implementing the FCC's rules is no simple task. The interested parties typically include four to seven wireless carriers, one or more wireline carriers, vendors of equipment and intermediary services (such as data basekeeping), state legislators and perhaps state utility commissioners, not to mention PSAPs themselves and state or regional public safety structures. The number of interests to be reconciled is reason enough for delay.

Consensus Eroding. But the slow pace of implementation has been further retarded, as I see it, by the breakdown of the 1996 consensus. CTIA has asked the FCC to declare that the choice of technology for passing ANI and ALI from the wireless network to the public switched telephone network must rest ultimately with the wireless carrier. The public safety organizations disagree, noting that they are being asked to reimburse the costs. This difference is open and manifest, in pleadings at the FCC. Other differences are more subtle and hidden.

For Example, in the 1996 consensus, public safety acknowledged the legitimacy of wireless carriers' desires to limit their liability for the consequences of failed calls. The FCC, however, chose to leave that legal question to the states. More recently, CTIA and BellSouth have proposed to the FCC that wireless carriers in the states where there is no statutory limitation of liability to be permitted to file federal tariffs for the purpose. Public safety organizations supported the proposal.

The appearance of harmony, however, is only skin-deep. In California, which has no statute limiting wireless carrier liability, some carriers declined to take part in an important radiolocation trail endorsed by the state's 9-1-1 program Manager, on the ground that their liability was not limited. Their refusals forced the Program Manager to ask the FCC whether California was obliged to (1) have a liability-limiting law in place before carriers were obliged to comply with Phase I or Phase II rules, or (2) pay the costs of insurance premiums for private liability protection. In the several months it took the FCC to respond in favor of California, important time was lost. In other states as well, carriers have continued to insist that they will not comply with Phase I unless their legal liability is limited.

Another more subtle difference arises in the context of funding for carrier reimbursement of costs to upgrade and ANI and ALI delivery. Some carriers would prefer a federal mandate on the means of funding and the cost elements to be reimbursed. The FCC again left this largely to the states or localities, declining to impose a single mechanism in the face of varying economic and political circumstances. Absent a federal mandate, carriers frequently hold out for a uniform statewide funding

plan that may be at odds with a state's history of local initiatives on 9-1-1. Legislative measures have been known to stall and fail as a result of such disputes.

Public safety authorities have sought to distinguish Phase I costs - which under the 1996 consensus would have been met entirely by carriers - from Phase II costs of installing much more expensive radiolocation systems at carrier cell sites. Having been asked to pay for Phase I, many public safety representatives balk at laying out multiples of these amounts for Phase II wireless location facilities that appear to have commercial applications beyond 9-1-1. In their minds, these officials are opposing public subsidy of private business. The carriers, in reply, dispute the likelihood of commercializing radiolocation in the near term. Most applications they foresee require merely a Phase I level of accuracy and reliability, while Phase II refinements seem useful only for public safety.

Time for a New Consensus

Not every difference of opinion is a sign of bad faith or back-sliding. Times change, after all, and technology never stands still. The assumptions of 1996 are not the realities of today. At the time of the CTIA/public safety consensus agreement in early 1996, it was widely assumed (and apparently accepted by the FCC) that Phase II ALI solutions were likely to come soonest from terrestrial radiolocation facilities and not from use of the Global Positioning Satellite (GPS) system created first for military purposes by the federal government and subsequently opened to private commercial use. The assumption was based on difficulties of accessing the required three or more satellites from indoor or otherwise "shadowed" locations and on the presumed high cost to the consumer of GPS-equipped telephone handsets.

The assumption now has been called into question by radiolocation vendors who claim to have overcome many of the presumed technical difficulties and who argue for a chance at mass production that will bring the cost of GPS access down. Typically, their solutions depend on more than GPS components in the handset and require enhancement of the terrestrial wireless network as well, but they bring at least the claim of greater accuracy and reliability, and perhaps faster implementation, than would be possible in the 2001 generation of "network-based" radiolocation solutions. In terms of funding for reimbursement, some costs may simply be shifted directly to the handset purchaser and never have to pass through a public mechanism.

Rather than change its Phase II rules at this point to make them more hospitable to gradual transition to smarter GPS handsets, the FCC is proposing to accept waiver applications from carriers (probably in league with location vendors) who can show that the benefits of placing GPS in new phones (with perhaps limited retrofitting as well) outweigh the "costs" presented by (1) the inability to use the large embedded base of non-GPS phones in GPS location systems and (2) the expense of new or retrofitted GPS phones.

Among other expectations, a new consensus between and among public safety and industry associations - perhaps including consumer groups as well - could provide the

FCC with a different basis for resolving such important outstanding issues as (1) whose word is final on ANI/ALI transmission technology, (2) how can carriers limit their liability for failed calls and (3) who pays for how much of Phase I and Phase II upgrades. A new consensus might also lead to innovative resolution of the challenges posed by the competition of terrestrial and satellite (GPS)-based radiolocation systems.