

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of

Report on Technical and Operational Issues
Impacting the Provision of Wireless
Enhanced 911 Services

WT Docket No. 02-46

COMMENTS OF VERIZON¹

The events of the last year have demonstrated how critical 911 service is to the safety of life and property and the security of the nation. While the Hatfield Report notes several technical and operational problems affecting deployment of wireless enhanced 911 (“E911”) service, it incorrectly highlights the wireline telephone system as a factor that is limiting the pace of deployment. This is incorrect with respect to Verizon. Verizon’s wireline 911 network is fully capable of handling any request by a public safety answering point (“PSAP”) to launch E911 Phase II service in any of Verizon’s service areas. In addition, Verizon’s wireline 911 network is neither “antiquated” nor incapable of meeting Phase II technical requirements.

The issue that needs to be addressed in promoting faster deployment of wireless E911 service is how to pay for the upgrading of thousands of local PSAPs and wireless systems throughout the country. Since this is a public safety issue that transcends the needs of both wireline and wireless customers, the Commission should explore public funding of 911 deployment through general tax revenues rather than requiring telecommunications carriers to

¹ The Verizon telephone companies (“Verizon”) are the affiliated local telephone companies of Verizon Communications Inc. These companies are listed in Attachment A.

pass along these costs to their customers. Finally, the Commission should adopt focused steps to coordinate government and industry efforts to implement Phase II E911 service to wireless customers.

I. Verizon Is “Ready Now” To Do Its Part To Implement Wireless E911 Service.

The Hatfield Report questions (at 32-34) the readiness of the incumbent local exchange carriers to support implementation of wireless E911 service. Although the report notes that the Chief of the Wireless Telecommunications Bureau had requested the largest local exchange carriers to provide information about their readiness to carry out their roles in wireless E911 deployment, it does not attempt to analyze the data in the carriers’ responses. Had it done so, it would have noted, for example, that Verizon reported its ability to handle any PSAP or wireless carrier request for Phase II wireless E911 service within deadlines established by the Commission’s rules.² While the report also notes (at 34) that cost recovery issues are affecting the willingness of some PSAPs to request implementation of Phase II service, this issue needs to be separated from the issue of technical readiness.

The factor that determines the pace of deployment of wireless E911 service is not the readiness of Verizon’s wireline 911 network, but the readiness of the PSAP to accept and use

² *See* Letter of Marie T. Breslin to Thomas J. Sugrue, Chief, Wireless Telecommunications Bureau, CC Docket No. 94-102, dated Aug. 27, 2002. In that report, Verizon made it clear that it is ready in all areas (approximately 2,000 PSAPs) to meet Phase II requests. In addition, Verizon noted that 11 of the existing Automatic Location Identification (“ALI”) databases would not be upgraded to support Phase II service, because they consist of PC-based databases on the premises of the PSAPs that are no longer being supported with product enhancements. However, for those 11 locations, Verizon has in place other ALI databases and interfaces that are ready to support Phase II service in those areas.

location data, including latitude and longitude location information (the “XY” coordinates) in Phase II for mobile calls. For this reason, the Commission does not require the local exchange carrier or the wireless carrier to meet Phase II requirements until six months after the PSAP notifies them that it will be ready to implement Phase II. *See Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, 14 FCC Rcd 17388 (1999). As noted, Verizon’s wireline 911 network is “ready now” to meet any such request. It should not be seen as the stumbling block to full implementation of wireless E911 service.

II. Verizon’s Wireline 911 Network Meets The Technical Requirements For Supporting Wireless E911 Service.

In addressing the readiness of the industry and PSAPs to implement wireless E911 service, the Hatfield Report unfortunately takes at face value allegations by an entity seeking to provide competitive E911 services that disparage the technical capabilities of the wireline 911 network. The report states that the local exchange carriers’ 911 infrastructure is “seriously antiquated,” “outdated,” and something of a “kluge” that is not adequate to accommodate the growing demands for wireless E911 services. *See* Hatfield Report, ii, 4, 14. These findings rely primarily upon a self-serving report by one alternative provider that clearly has an interest in creating the impression that the incumbent local exchange carriers are not meeting current requirements.³ The Hatfield Report should not have taken this at face value, and neither should the Commission.

³ *See, e.g.*, Hatfield Report, 14, *citing* SCC Communications Corp. 9-1-1 Networks in the 21st Century – The Case for Competition, February 20, 2001.

Verizon's wireline 911 system is neither inadequate nor unreliable. The only specific criticism of the wireline 911 system in the Hatfield Report is the continued reliance on in-band, multifrequency signaling to send the calling party's number to the PSAP, which then uses a separate data line to query the ALI database for the wireless customer's location. *See* Hatfield Report, 4. The Hatfield Report states that the end office could query the ALI database directly and could send the customer location to the PSAP over modern, digital common channel signaling techniques, presumably referring to the SS7 signaling system. However, SS7 was not designed or intended to interface with customer premises. It is an inter-office and inter-network signaling system. The SS7 signaling system was designed for initial call setup, not for the continuing database querying that is required, for instance, when location information must be updated repeatedly for a wireless call in motion. In addition, until recent years, the SS7 signaling system was not as reliable as MF signaling – a critical issue where delivery of a call literally can be a matter of life and death. Even where SS7 signaling links are used for wireless E911 service, a separate data link between the PSAP and the ALI database is used to retrieve location data. Thus, the basic architecture is similar to service where MF signaling is used.

For these reasons, Verizon and the PSAPs have upgraded to SS7 in recent years primarily for economic reasons, not because the existing system is inadequate. For instance, SS7 signaling is often used in areas that have undergone number code overlays because it is more economical than installing additional MF trunks.

The Hatfield Report faults the wireline 911 system for not incorporating such developments as digital transmission, fiber optic rings, and broadband digital circuits. *See* Hatfield Report, 14. The report mischaracterizes the wireline 911 system as primarily analog

when, in fact, it is almost entirely digital. The multifrequency signaling in the current system rides over digital carrier systems from the digital switch at the central office to the digital 911 tandem to the serving wire center of the PSAP. The only analog link in this chain is the local loop from the serving wire center to the PSAP, and only where the PSAP has not decided to purchase a digital local service such as ISDN. Even in the local loop, there is likely to be a digital carrier system such as fiber in the feeder.

Moreover, incorporation of new technologies requires adoption of new standards and evaluation of the suitability of that technology to the needs of 911 service. For example, voice over Internet protocol (“VoIP”) may be the next logical step in the evolution of network-to-PSAP interfaces, but the standards necessary to build products and implement the service are only in the early stages of development. There are still several open issues concerning VoIP that need to be addressed, not the least of which is security. The Commission cannot assume that the 911 system is archaic simply because it has not incorporated the latest technological changes.

Verizon’s wireline 911 system has been engineered for speed and reliability in the most extreme situations. For example, on September 11, 2001, Verizon continued to process 911 calls in New York City, despite the fact that the 911 tandem in the central office adjacent to the World Trade Center was, essentially, destroyed due to the collapse of the 7 World Trade Center building. Since Verizon had deployed “mated” 911 tandems in New York City (as in almost all areas in Verizon East), a second 911 tandem at Bridge Street continued to function and to carry the 911 calls without interruption.⁴ Without the redundancy that had been engineered into the

⁴ The Network Reliability and Interoperability Council (“NRIC”) recommends that single points of failure be eliminated wherever possible. In a “mated” tandem network, there are two physically diverse 911 trunk groups leaving a central office. These two trunk groups go to two

911 network, it would have failed in that disaster regardless of whether it had relied upon SS7 or MF signaling.

This illustrates the fact that Verizon's wireline offerings are sufficient to support the existing wireless E911 requirements. They should not be seen as a factor that is inhibiting progress towards nationwide availability of E911 service for wireless systems.

III. Public Funding Should Be Used To Promote Universal Availability Of E911 Service For Wireless Customers.

The Hatfield Report notes (at 29) that the roll-out of wireless E911 service is hindered in many areas by the lack of adequate funding and the use, in some states, of money from E911 cost recovery mechanisms for other public purposes. While the Commission has addressed the issue of which types of costs may be borne by wireless carriers vs. PSAPs, it has not addressed the funding issue. *See, e.g., Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems Request of King County, Washington, Order on Reconsideration, 17 FCC Rcd 14789 (2002).*

The Commission cannot ignore the effect of funding issues on the ability of the states and the carriers to implement wireless E911 solutions. Many of the issues that have slowed the deployment of wireless 911 service have involved determinations about how to develop the financial means to implement and maintain the service. Taking this out of the equation would promote wider deployment of wireless 911 service, especially in rural areas where wireless

physically diverse 911 tandems (here, one at 140 West Street, the other at Bridge Street). The PSAP is also connected to both tandems via two physically diverse trunk groups to the serving wire center. Additional diversity can be installed between the serving wire center and the PSAP upon the PSAP's request.

carriers may not have the customer base to cover the significant investment needed to modernize their networks to the Phase II level.

In most states, funding of E911 implementation costs for PSAPs, wireline carriers and, in most cases, wireless carriers, is accomplished through surcharges on wireless and wireline customers. This is not an optimum solution. Such surcharges, as well as the costs that wireless and wireline carriers must incur that are not recoverable from state funds, inflate the prices for telecommunications services and lower demand. This is exacerbated by the fact that several states have used some of these funds to meet other budgetary purposes rather than solely to support the rollout of E911 service.⁵ In addition, in states where funding mechanisms are absent or inadequate, it is more difficult for PSAPs to find the funds needed to upgrade their facilities to Phase I or Phase II levels.

The Commission should recommend development of public funding of E911 service through general tax revenues rather than through telecommunications surcharges. E911 service is not simply a useful option for wireline and wireless customers – it is widely acknowledged to be a public safety feature that benefits the entire community. Customers use E911 service not only to report their own emergencies, but to report events that involve other persons, such as accidents, health emergencies, crimes, and natural disasters. In particular, all of society has an interest in a robust wireless E911 system that is as capable as the wireline system of providing the information that PSAPs need to respond to emergencies.

⁵ *See, e.g.*, Paul Davidson, *Enhanced 911 Calls Still Far From Wide Coverage*, USA Today, Oct. 24, 2002 *at* http://www.usatoday.com/money/industries/telecom/2002-10-24-e911_x.htm.

For these reasons, the existing hodgepodge of state funding mechanisms, both explicit and implicit, should be replaced by public funding of E911 deployment. An adequate funding mechanism that does not burden telecommunications customers is the best way of promoting speedy implementation of E911 service.

IV. The Commission Should Create An Advisory Committee To Address Technical Issues And To Promote Further Development Of E911 Wireless Services.

The Hatfield Report correctly highlights the increasing importance of universal access to E911 services, especially for wireless customers. *See* Hatfield, 15. Frequently, wireless E911 calls are the first reactions to emergencies such as accidents, criminal activities, and terrorist attacks. Because of the mobile nature of wireless customers, accurate position information is essential to allow timely response by public safety agencies. At the same time, providing such location information is far more difficult and technically challenging for wireless carriers than for wireline carriers. Wireless carriers must implement significant upgrades to their systems to achieve E911 Phase II capability, which requires access to advanced equipment and the financial resources to purchase, install, maintain, and operate it. Likewise, PSAPs must upgrade their systems and equipment to utilize the E911 Phase II capabilities. In addition, the evolving nature of technology and new types of communications services, such as voice over the Internet, require development of industry standards, exchange of information, and coordination of the efforts of government and private entities.

The Hatfield Report makes a number of suggestions for improving implementation of wireless E911 services, including establishing a number of new governmental entities and activities both within and outside the Commission and supporting advisory groups and

governmental programs at the federal, state and local levels. Clearly, greater coordination of the existing government and private efforts and the establishment of industry standards will help promote more timely and efficient provision of E911 services. However, the Hatfield recommendations appear fragmented, with no apparent structure or overall plan. A proliferation of bureaucratic activities can result in lack of focus, loss of efficiency, and duplication of effort.

Verizon recommends that the Commission focus on two areas – support of a National 911 Program Office within the Office of Homeland Security, and creation of an advisory committee. The Office of Homeland Security should address the requirements for E911 services in the context of its national security plans, and it should provide a resource for coordination of state and local emergency activities with nationwide security planning. The role of the advisory committee would include addressing technical issues, suggesting industry standards, and making policy recommendations for implementing E911 service. The advisory committee should include representatives of all stakeholders, including trade associations, carriers, vendors, and federal and state regulatory agencies. It should seek consensus among all stakeholders on the technical framework for E911 services that would meet federal and state requirements and it should assess ongoing technological and market changes to promote the evolution of E911 services. The industry advisory committee should also be a resource for collecting information and providing analyses to assist the Commission in addressing policy issues concerning the implementation of E911 services for both wireless carriers and new, emerging communications media, such as handheld computers and voice over Internet technologies.

Conclusion

The key issue in promoting the ability of wireless carriers and PSAPs to meet Phase II wireless E911 standards is the lack of a public funding mechanism. In addition, to promote deployment of wireless E911 service, the Commission should focus on coordination with the Office of Homeland Security and the development of an advisory committee to establish industry standards and solutions.

Respectfully submitted,

By:  _____

Joseph DiBella

1515 North Court House Road
Suite 500
Arlington, VA 22201-2909
(703) 351-3037
joseph.dibella@verizon.com

Attorney for the Verizon
telephone companies

Of Counsel
Michael E. Glover
Edward Shakin

Dated: November 15, 2002

THE VERIZON TELEPHONE COMPANIES

The Verizon telephone companies are the local exchange carriers affiliated with Verizon Communications Inc. These are:

Contel of the South, Inc. d/b/a Verizon Mid-States
GTE Midwest Incorporated d/b/a Verizon Midwest
GTE Southwest Incorporated d/b/a Verizon Southwest
The Micronesian Telecommunications Corporation
Verizon California Inc.
Verizon Delaware Inc.
Verizon Florida Inc.
Verizon Hawaii Inc.
Verizon Maryland Inc.
Verizon New England Inc.
Verizon New Jersey Inc.
Verizon New York Inc.
Verizon North Inc.
Verizon Northwest Inc.
Verizon Pennsylvania Inc.
Verizon South Inc.
Verizon Virginia Inc.
Verizon Washington, DC Inc.
Verizon West Coast Inc.
Verizon West Virginia Inc.

CERTIFICATE OF SERVICE

I hereby certify that, on this 15th day of November, 2002, copies of the foregoing
“Comments of Verizon” were sent by electronic mail to the parties listed below.

Steven E. McPherson

Barry J. Ohlson
Chief
Policy Division
Wireless Telecommunications Bureau
Federal Communications Commission
Bohlson@fcc.gov

Qualex
qualexint@aol.com