

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of

Amending the Definition of Interconnected
VoIP Service in Section 9.3 of the
Commission's Rules

GN Docket No. 11-117

Wireless E911 Location Accuracy
Requirements

PS Docket No. 07-114

E911 Requirements for IP-Enabled Service
Providers

WC Docket No. 05-196

REPLY COMMENTS OF VERIZON¹ AND VERIZON WIRELESS

The initial comments reflect broad support for the Commission's important public safety objectives in this proceeding.² The comments make clear that any new E911 requirements must be consistent with the New and Emerging Technologies 911 Improvement Act of 2008 (NET 911 Act) and technically feasible. Instead of adopting new regulations, the Commission should support efforts at the Communications Security, Reliability, and Interoperability Council (CSRIC) and at industry standards bodies to address the many open technical issues raised in the *NPRM*, including: the feasibility of E911 for outbound-only interconnected VoIP providers; the feasibility of new automatic location information (ALI) requirements for interconnected VoIP

¹ In addition to Verizon Wireless, the Verizon companies participating in this filing ("Verizon") are the regulated, wholly owned subsidiaries of Verizon Communications Inc.

² See *Amending the Definition of Interconnected VoIP Service in Section 9.3 of the Commission's Rules; Wireless E911 Location Accuracy Requirements; and E911 Requirements for IP-Enabled Service Providers*, Notice of Proposed Rulemaking, Third Report and Order, and Second Further Notice of Proposed Rulemaking, 26 FCC Rcd 10074 (2011) ("*NPRM*").

providers; and whether particular technologies can enhance location accuracy in indoor environments.

I. ANY E911 REQUIREMENTS FOR OUTBOUND-ONLY VOIP SERVICES MUST BE CONSISTENT WITH THE NET 911 ACT'S HIGH STANDARD.

Many commenters, including Verizon, explained that not all outbound-only VoIP services will meet the NET 911 Act's high standard for imposing new E911 regulations on VoIP providers.³ Comments suggesting that outbound-only VoIP services that enable calls to any number on the PSTN would meet that standard are misguided.⁴ Congress intended that additional VoIP services would be covered only as they "become widely accepted and fungible substitutes for telephony,"⁵ and many commenters explain that certain outbound VoIP services do not have the same calling and service expectations as would a fully interconnected service such as interconnected VoIP.⁶ For example, some outbound-only services enable users to terminate calls only to international numbers, while others offer only the ability to place calls to *some* domestic U.S. numbers.⁷ One such service, which is tailored to the particular needs of specific customers, offers the ability to place only what would be considered long-distance calls if they were made over the PSTN. Customized, customer-tailored services like these fall far short of the "substantially all" threshold the Commission proposes in the *NPRM*.

³ See AT&T Comments at 7; National Cable & Telecommunications Association (NCTA) Comments at 11; Verizon Comments at 5-6; Vonage Comments at 12-13; Voice on the Net Coalition (VON Coalition) Comments at 3-4.

⁴ See MetroPCS Comments at 11; NENA at 5; Sprint Nextel Comments at 3.

⁵ See H.R. Rep. 110-442, at 16 (2007).

⁶ See Information Technology Industry Council (ITIC) Comments at 4-5, Vonage Comments at 12-13; VON Coalition Comments at 3-4.

⁷ See AT&T Comments at 2 ("users of outbound-only *business* VoIP services" and "customers of services that offer only long distance capability" would not have 911 calling expectations).

To the extent that the Commission decides to expand its E911 rules to outbound-only VoIP services, despite the NET 911 Act's limits on its authority, the record confirms that the Commission must do so narrowly. Furthermore, any new requirements must be technically feasible and based on realistic deployment schedules, as even some commenters who support new requirements for outbound-only VoIP acknowledge.⁸ Many other commenters raise significant questions about the near-term feasibility of both automatic number information (ANI) and Registered Location obligations for outbound-only VoIP service providers.⁹ The record underscores that the Commission must base any new requirements on realistic deployment timetables that account for necessary standards development processes and service deployment.

II. THE COMMISSION SHOULD ALLOW STANDARDS WORK TO CONTINUE AND NOT IMPOSE AUTOMATIC LOCATION INFORMATION REQUIREMENTS IN THE NEAR TERM.

The comments reflect broad consensus that industry and other stakeholders should “continue working towards” ALI solutions for interconnected VoIP providers,¹⁰ without regulatory intervention, principally through industry standards processes and the CSRIC's examination of ALI technologies.¹¹ To that end, two bodies within the Alliance for Telecommunications Industry Solutions (ATIS), the Wireless Technologies and Systems Committee and Emergency Services Interconnection Forum-Next Generation Emergency Services Subcommittee, formally initiated work on a standard early last month that will identify

⁸ See AT&T Comments at 2 n.7; NENA Comments at 7.

⁹ See ITIC Comments at 6-8; VON Coalition Comments at 7-8; Vonage Comments at 13-15.

¹⁰ See NPRM ¶ 69.

¹¹ See ATIS Comments at 4-5; AT&T Comments at 4-5; CenturyLink Comments at 3-4; CTIA Comments at 5-7; ITIC Comments at 14-15; Motorola Comments at 3-9; NCTA Comments at 6-8; Sprint Nextel Comments at 4-7; T-Mobile Comments at 3-5; VON Coalition Comments at 11; see also MetroPCS Comments at 3-5; Telecommunications Industry Association Comments at 5-7; Vonage Comments at 15-16.

methods to enable a broadband provider to acquire and convey ALI to the PSAP, and will also address an over-the-top VoIP provider's capabilities.¹² Industry has established a target resolution date of 4Q2012, after which ATIS would need to formally adopt the final product as a standard and industry would need additional time thereafter to incorporate it into networks, devices, applications and business practices. This project will incorporate and build upon the efforts of many of the standards efforts referenced in the *NPRM*, including standards developed by the Open Mobile Alliance, the Internet Engineering Task Force, the Third Generation Partnership Project, and the Third Generation Partnership Project 2.

ATIS's important initiative to address the myriad technical issues associated with providing ALI to PSAPs in a VoIP environment confirms many commenters' assessments that it is premature to consider substantive regulations or deadlines until the full extent of network, handset, and PSAP upgrades is better understood.¹³ While many commenters described the technical challenges relevant to wireless technologies, wireline-based VoIP and broadband services will face unique challenges of their own, and ATIS will address issues facing those platforms as well. For these reasons, NENA's suggested outermost deadline of five years,¹⁴ as well as the Texas 911 agencies' apparent request for regulation of SIP-based services to

¹² See ATIS – Wireless Technologies and Systems Committee, Automating Location Acquisition for Emergency Services VoIP Calls, Issue Statement, Issue No. P0034, WTSC-IMSESINET-2011-130 (as approved Oct. 7, 2011). Verizon and AT&T are the issue champions for this effort.

¹³ See *supra* note 11.

¹⁴ See NENA Comments at 9. NENA states that its “i3 solution” for NG911 public safety networks “assumes the future existence of Location Information Servers in access provider networks.” *Id.*; see also Bandwidth.com Comments 12-13. Verizon may discuss the i3 solution in more detail in the Commission's NG911 rulemaking proceeding (PS Docket No. 10-255), but notes that while the Location Information Server is principally relevant to fixed broadband providers, Verizon is generally supportive of the i3 solution and supports NENA's recent efforts to ensure that the next version of i3 will more effectively accommodate IMS-based and legacy wireless networks.

MLTS/PBX systems,¹⁵ do not account for the need for the standards process to run its course and for service providers, equipment manufacturers, application providers, and PSAPs to incorporate any new standards into their networks, services, and products. While Sprint Nextel's suggested 7-10 year timeframe seems more realistic,¹⁶ it is simply premature to speculate what substantive requirements should apply, much less the appropriate deadlines, until all affected stakeholders have a firmer understanding of the development and deployment measures needed to make a VoIP ALI capability feasible and commercially available across all platforms.

In addition to the significant technical challenges, Verizon and other commenters cautioned that any new requirements must be consistent with the Commission's jurisdiction under the NET 911 Act.¹⁷ These parties demonstrated that the regulatory framework proposed for broadband providers in the *NPRM* exceeds the scope of the Commission's authority. AT&T further explains that the Commission's proposed regulation of broadband providers raises issues under Section 230(b)(2) of the Communications Act, and MetroPCS highlights the significant implications for broadband providers and application providers alike in relation to the newly-effective *Open Internet* rules.¹⁸ As Verizon and other commenters explained, such arrangements are best addressed through commercial agreements without an overarching regulatory burden.¹⁹

¹⁵ See Joint Initial Comments of the Texas Commission on State Emergency Communications and the Texas 9-1-1 Alliance at 2-3. NENA's model E911 legislation for MLTS, which has been the basis for legislation at the state level, designates this capability as the responsibility of the PBX owner, not the service provider. See <http://www.nena.org/?page=Model911Legislation>. Any departure from this demarcation of responsibilities would require substantial standards and product development work.

¹⁶ Sprint Nextel Comments at 4 n.11.

¹⁷ See AT&T Comments at 8-9; CTIA Comments at 6; MetroPCS Comments at 8-10; see also Motorola Comments at 5-6 (responsibilities should not lie with broadband provider).

¹⁸ See AT&T Comments at 8-9; MetroPCS Comments at 9-10.

¹⁹ See AT&T Comments at 5 n.16; CTIA Comments at 5-6.

There is wide agreement among all stakeholders, however, on nearly all of the remaining ALI issues raised in the *NPRM*. Commenters agree that the Commission should not impose a particular ALI technology on service providers, and that different solutions will be warranted for different technology platforms.²⁰ As NENA explains, the Commission should not “favor any one location determination method to the detriment of others.”²¹

In addition, Verizon and other commenters addressing the issue demonstrated that it is unnecessary for the Commission to apply Section 222 requirements to broadband providers.²² While APCO states further that “it is generally accepted that citizens give up their right to location privacy when they dial 9-1-1 to seek emergency assistance,”²³ it is unnecessary for the Commission to address that proposition in this proceeding given that Congress has spoken to the issue of location information sharing in Section 222 of the Act.²⁴ Moreover, ATIS’s effort to develop standards enabling VoIP providers to deliver ALI to PSAPs will address privacy implications of location information sharing. Again, it is unnecessary for the Commission to expand Section 222-based requirements to broadband providers as proposed in the *NPRM*.

Commenters also uniformly agree that broad liability protection for E911 stakeholders is important to ensuring timely deployment of E911 capabilities.²⁵ As Verizon explained,

²⁰ See CenturyLink Comments at 4-6; MetroPCS Comments at 6; Motorola Comments at 4; NCTA Comments at 7; Verizon Comments at 8-9; see also CTIA Comments at 4-6 (opposes “development of a single standard for compliance”); Sprint Nextel Comments at 6 (Master Street Address Guide location not appropriate for wireless platforms).

²¹ NENA Comments at 10.

²² See AT&T Comments at 10-11; CTIA Comments at 7-9; Verizon Comments at 20-23.

²³ APCO Comments at 7.

²⁴ See Verizon Comments at 21-22; see also AT&T Comments at 10-11.

²⁵ See AT&T Comments at 11-12; CTIA Comments at 9-12; MetroPCS Comments at 12-14; NENA Comments at 10-11; Sprint Nextel Comments at 7-8; T-Mobile Comments at 6.

broadband providers and other stakeholders are *already* entitled to liability protection as a matter of law.²⁶ The Commission should, however, affirm that broad application of the liability protection statute will best serve Congress’s public safety and service deployment objectives, and that inconsistent state and local regulation that undermines the national regulatory framework needed for effective E911 service will be subject to preemption. Finally, industry stakeholders alike uniformly oppose new requirements for disclosure of E911 location accuracy capabilities to consumers, underscoring that such requirements are contrary to the public interest, and while NENA is supportive of new standards, it acknowledges that such information would need to be presented in an “understandable format that would inform without confusing.”²⁷

III. POTENTIAL INDOOR ACCURACY SOLUTION REQUIREMENTS SHOULD AWAIT CSRIC RECOMMENDATIONS.

Commenters addressing indoor testing and location technologies generally agree that stakeholders and the Commission will benefit enormously from the CSRIC’s examination of these issues.²⁸ The record affirms that consideration of any new requirements, including for indoor accuracy testing, should await the outcome of that process.²⁹ Verizon evaluates new promising location determination technologies on an ongoing basis, and provides some preliminary observations and concerns below on a few of the solutions commenters presented to the Commission. The CSRIC should evaluate the merits and shortcomings of the various

²⁶ See Verizon Comments at 24-26.

²⁷ NENA comments at 13; *see also* CTIA Comments at 12-14; MetroPCS Comments at 14; Verizon Comments at 26-28.

²⁸ See ATIS Comments at 5-7; AT&T Comments at 7-8; CTIA Comments at 2-4; Motorola Comments at 9; NENA Comments at 13; Qualcomm Comments at 10-12; Sprint Nextel Comments at 8-9; TCS Comments at 12-13; T-Mobile Comments at 7-8.

²⁹ See ATIS Comments at 5-7; AT&T Comments at 7-8; CTIA Comments at 2-4; Motorola Comments at 9; Sprint Nextel Comments at 8-9; T-Mobile Comments at 7-8.

location technologies described in the comments so the Commission can benefit fully from the CSRIC's expertise.

Boeing Timing & Location (BTL) Solution. Boeing's BTL solution³⁰ may potentially be useful for some operators, but requires far more evaluation and real-world testing. Verizon has not evaluated the BTL solution, but it is unclear, based on Boeing's comments, how it could be implemented without network infrastructure changes. Although BTL relies in part on positioning data provided by the Iridium satellite constellation, the IS-801 protocol used for E-911 Phase II does not support the transmission of Iridium data to the position determination equipment (PDE) housed in the network, and the PDE itself does not support Iridium positioning algorithms. Accommodating these features would require design, development, integration and testing among network infrastructure vendors and service providers. Moreover, a solution premised on SIM card capability would be of no use to customers with CDMA devices and, in any event, Verizon's experience with introducing A-GPS capable handsets into its customer base is evidence that there are significant obstacles to customer adoption of new handset technology. Boeing's suggestion that chipsets could be available in 2012³¹ seems optimistic; but, even if so, BTL-equipped handsets would not be available to carriers until 2013 at the earliest – and service providers' device requirements for that future period are already near finalization, so it would be impracticable to incorporate BTL into handsets until sometime thereafter. Furthermore, to determine BTL's viability, device manufacturers and service providers would need to assess important factors such as battery life, multipath signaling and actual performance of satellite signals, particularly within challenging environments such as steel structures. Finally, regarding

³⁰ See Boeing Comments at 3-12.

³¹ See *id.* at 33.

BTL's potential for enabling the generation of a vertical "z-axis" coordinate,³² a solution must more thoroughly account for modeling the irregularities in earth terrain.

Qualcomm – QPoint. Qualcomm's QPoint positioning solution³³ shows promise by integrating Wi-Fi positioning capabilities into its chipset. Verizon generally agrees with Qualcomm's assessment of the direction of indoor location technologies, including the continued improvements of A-GPS itself, adding GLONASS satellite capabilities, and supplementing A-GPS through the use of Wi-Fi and Bluetooth technologies and smartphone inertial navigation features such as accelerometers, gyroscopes, and barometric pressure sensors.³⁴ Testing, analysis, design, standards work, and integration, are necessary, however, to evaluate and implement this location solution.

TruePosition – U-TDOA/A-GPS Hybrid. GSM-based carriers are migrating away from U-TDOA to A-GPS, and Verizon remains unconvinced that U-TDOA performs materially better than the A-GPS/AFLT solution in indoor environments, particular in steel structures. Verizon has nonetheless evaluated the possibility of incorporating TruePosition's hybrid solution,³⁵ which would require significant network changes or enhancements, not just minor software changes. First, location measurement units (LMUs) are needed at every cell site, and many of Verizon Wireless's sites – particularly those in urban areas where indoor accuracy would supposedly show the most improvement with a U-TDOA component – do not have space to install the LMU equipment. TruePosition's solution, moreover, is not compatible with Verizon's wireless backhaul network. While carriers could theoretically share the cost of a particular

³² See *id.* at 28.

³³ See Qualcomm Comments at 6-7.

³⁴ See *id.* at 8-9.

³⁵ See TruePosition Comments at 8-11.

solution, as TruePosition suggests,³⁶ it is far from certain that U-TDOA will be the industry-wide solution of choice that would make its solution economically viable.

CONCLUSION

The comments in this proceeding underscore the importance of ensuring that any new E911 requirements are consistent with the NET 911 Act and are technically feasible. The comments also demonstrate that, rather than adopting new regulations, the Commission should support efforts at the CSRIC and at industry standards bodies to address the many technical issues raised in the *NPRM*.

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³⁶ *See id.* at 8-9.