

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of	
Amending the Definition of Interconnected VoIP Service in Section 9.3 of the Commission's Rules	GN Docket 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 LEVEL 3 COMMUNICATIONS, LLC

INTRODUCTION AND SUMMARY

Level 3 Communications, LLC (“Level 3”) submits these reply comments in response to the Commission’s Second Further Notice of Proposed Rulemaking (“*FNPRM*”) seeking comment on measures to improve 911 availability and location determination for users of interconnected Voice over Internet Protocol (“VoIP”) services, and a framework for ensuring that all covered interconnected VoIP service providers can provide automatic location information (“ALI”) for VoIP 911 calls.¹ Level 3 agrees with both the Commission and parties

¹ *Amending the Definition of Interconnected VoIP Service in Section 9.3 of the Commission’s Rules; Wireless E911 Location Accuracy Requirements; E911 Requirements for IP-Enabled Service Providers*, GN Docket No. 11-117, PS Docket No. 07-114, WC Docket No. 05-196, Notice of Proposed Rulemaking, Third Report and Order, and Second Further Notice of Proposed Rulemaking (July 13, 2011) (“*NPRM*,” “*R&O*,” and “*FNPRM*”).

who filed in this proceeding² that “given the increasing popularity and adoption of two-way interconnected and outbound VoIP services, the provision of accurate location information to PSAPs is becoming essential to facilitate prompt emergency response and protect life, health and property.”³

While current solutions may not be developed enough to warrant ALI requirements for VoIP providers at this time, Level 3 believes that the Commission should explore the advancement of a framework for developing technically feasible solutions that would enable it to consider implementing VoIP ALI rules in the near future.⁴ However, as the Commission also recognizes, it must address several issues before embarking on the implementation of ALI requirements for interconnected VoIP providers.⁵ Level 3 agrees, and believes that device manufacturers, interconnected VoIP providers, underlying voice carriers, and broadband providers have potential roles to play, and that sorting through which entity plays what part will be extremely challenging for the industry and the Commission.

Finally, Level 3 argues that there are also significant privacy and security concerns that should be considered before the Commission imposes ALI requirements upon interconnected VoIP service providers. Level 3 agrees with the Commission that current requirements for safeguarding the privacy of location accuracy information should be extended to interconnected

² See *i.e.*, Comments of Bandwidth.com, Inc., WC Docket No. 11-117 at 5; Comments of Telecommunications Services, Inc., WC Docket No. 11-117 at 3-4; Comments of The Alliance For Telecommunications Industry Solutions, WC Docket No. 11-117, at 4 (“ATIS Comments”).

³ *FNPRM* at ¶ 69.

⁴ See *id.* at ¶ 70.

⁵ See *id.*

VoIP service providers, to the extent that they are required to provide location information for E911 purposes.

I. DISCUSSION

A. Accurate Location Information is Essential to Facilitate Prompt Emergency Response for VoIP Consumers

Level 3 agrees with the Commission that “[i]n light of the increasing prevalence of VoIP calling, the evolution of consumer expectations, and the limitations of the Registered Location method . . . it is imperative to continue working towards an automatic location solution for interconnected VoIP calls to 911.”⁶ Consumer expectations of reaching emergency personnel when using outbound-only interconnected VoIP services, particularly over nomadic devices, is on the rise as these services are increasingly deployed and become substitutes for traditional wireline and wireless services. The Commission should begin to take steps to develop a framework for determining ALI for users of VoIP services. However, it also commends the Commission for recognizing that immediately adopting specific ALI requirements is premature, and that several issues must be addressed before such requirements are viable, particularly when considering the imposition of ALI requirements upon nomadic interconnected VoIP service providers.⁷

Level 3 supports those parties who urge the Commission to charge an industry group, such as the Alliance for Telecommunications Industry Solutions (“ATIS”) Emergency Services Interconnection Forum, or another appropriate advisory group, with further reviewing current

⁶ *FNPRM* at ¶ 70.

⁷ *See id.* at ¶ 70.

industry standards and technologies before embarking on the creation of a definitive framework.⁸

Level 3 argues that in order to ensure that ALI can be generated and transmitted in the most technologically efficient and cost-effective manner, some solutions will require participation by both over-the-top VoIP service providers and other entities, such as the underlying voice carriers that provide connectivity for VoIP calls, which could play a key role in ALI determination.

Level 3, in its capacity as an underlying voice carrier for its VoIP service provider customers, and as a provider of interconnected VoIP services to businesses, offers a number of ALI enabling solutions. Level 3 recently launched a nomadic E911 solution for enterprise customers utilizing IETF GEOPRIV protocols. With this solution, a caller's location information is embedded directly in the call flow messaging itself, allowing the customer's VoIP application to determine and pass through the correct address information. In situations where the customer's nomadic VoIP application is frequently moved, the ability of the solution to embed flexible call flow information ensures accurate address information. Level 3 also offers static E911 solutions. All of Level 3's E911 solutions utilize its E911 network connectivity to route emergency calls to the appropriate PSAP.

B. The Commission Should Carefully Evaluate Any Decision to Impose ALI Requirements as Proposed

Level 3 agrees with NCTA, who states that the Commission's "proposed 'governing principle' – that an underlying broadband provider 'be capable of providing location information regarding the access point being used by the device or application, using industry-standard

⁸ See Comments of the National Cable & Telecommunications Association, WC Docket No. 11-117 at 2 ("NCTA Comments"); ATIS Comments at 5; Comments of CenturyLink, WC Docket No.11-117 at 2 ("CenturyLink Comments"); Comments of T-Mobile-USA, Inc., WC Docket No 11-117 at 5

protocols on commercially reasonable and non-discriminatory terms” may be found to be infeasible or inferior to an alternative approach, after a collaborative industry process further studies ALI solutions.⁹ Level 3 therefore urges the Commission to seek additional input about technology challenges before making decisions about who should bear the burden of providing ALI in this context.

While several entities will likely need to play a role in determining ALI for VoIP, imposing these requirements upon broadband providers is particularly challenging. Despite recent developments in technology, in the nomadic interconnected VoIP environment, it is difficult for underlying broadband providers to map IP addresses to physical addresses, or otherwise determine ALI. The Commission itself notes that “the provision of ALI in the interconnected VoIP context is particularly challenging because of the increasing prevalence of ‘over-the-top’ VoIP service, where the over-the-top VoIP service provider that offers interconnected VoIP service to consumers is a different entity from the broadband provider that provides the underlying Internet connectivity.”¹⁰ The Commission suggests that when an interconnected VoIP user accesses the Internet to place an emergency call, “the underlying broadband provider must be capable of providing location information regarding the access point being used by the device or application.”¹¹ However, Level 3 argues that requiring underlying broadband providers, particularly those providing broadband service in the wholesale or enterprise setting, to bear responsibility for mapping IP addresses to physical addresses, would be extremely onerous and require a long-term deployment roadmap which contemplates

⁹ NCTA Comments at 7-8.

¹⁰ *FNPRM* at ¶ 71.

¹¹ *FNPRM* at ¶ 72.

standards, funding and mechanisms for coordination with the interconnected VoIP providers utilizing their networks.

Level 3 also understands that while some current technologies used to determine location information for commercial purposes have mechanisms to map the IP address or ports used to the user's location, the only viable E911 location solution currently available to interconnected VoIP service providers servicing residential users is the Registered Location solution.¹²

Requiring a customer to register their location every time a portable or mobile VoIP service is moved is extremely inconvenient for the end-user consumer, and therefore impractical.

Interconnected VoIP service providers, the underlying telecommunications carriers they rely on, and device manufacturers may be better equipped at ensuring that covered interconnected VoIP service providers can pass along location information, and should be among the primary parties involved in ensuring accurate location information is delivered. For instance, GPS-enabled mobile and portable devices are increasingly becoming available,¹³ a feature that will greatly aid interconnected VoIP service providers in determining the location of a device that is not a traditional handset. Ultimately, the best solution for nomadic interconnected VoIP service may require that a hierarchy of location information is used, going from most reliable to least reliable, requiring the application to rely upon and deliver the most reliable location information first.

¹² See 47 C.F.R § 9.5.

¹³ See "Tablet Computers May Replace Navigational GPS Devices" (Feb. 17, 2011), available at <http://www.sourcegps.com/2011/02/17/tablet-computers-may-replace-navigational-gps-devices/>.

Finally, Level 3 agrees with the National Broadband Plan recommendation that charges the Commission with expanding its *Location Accuracy NPRM*¹⁴ proceeding to “explore how NG911 may affect location accuracy and ALI.”¹⁵ The Commission should investigate steps the public safety community can and currently is taking regarding interconnected VoIP, within the context of the NG911 initiative. It will be important for the Commission to take into consideration any impacts the decisions it makes in this proceeding may have on future mechanisms for reaching E911, such as texting, email and video calls, and upon the Commission’s recently initiated proceeding on NG911.¹⁶

C. Privacy and Security Concerns Are Implicated By ALI Requirements

The Commission and other parties commenting in this proceeding appropriately recognize the privacy and security concerns presented by the Commission’s proposal to amend its rules to require interconnected VoIP service providers to supply ALI.¹⁷ In order to ensure that the privacy of consumers’ location information continues to be protected, the Commission should ensure that Section 222 obligations are extended as necessary. However, Level 3 believes that it is administratively difficult, if not impossible, to impose Section 222 customer proprietary

¹⁴ *Wireless E911 Location Accuracy Requirements; Revision of the Commission’s Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems for IP-Enabled Service Providers*, PS Docket No. 07-114, CC Docket No. 94-102, WC Docket No. 05-196, Notice of Proposed Rulemaking, 22 FCC Rcd 10609, 10613 (2007) (*Location Accuracy NPRM*).

¹⁵ *R&O* at ¶ 9.

¹⁶ *Facilitating the Deployment of Text-to-911 and Other Next Generation 911 Applications, Framework for Next Generation 911 Deployment*, Notice of Proposed Rulemaking, PS Docket Nos. 11-153, 10-255 (rel. Sept. 22, 2011).

¹⁷ *See FNPRM* at ¶ 76; *see also* CenturyLink Comments at 5-6; Comments of Sprint Nextel Corporation, WC Docket No. 11-117 at 6; Comments of the Association of Public-Safety Communications Officials-International, Inc., WC Docket No. 11-117 at 7.

network information (“CPNI”)¹⁸ requirements upon underlying broadband providers for the purpose of assisting interconnected VoIP providers in determining ALI.¹⁹ Underlying broadband service providers may not have a customer relationship with a particular interconnected VoIP service provider’s customers, and oftentimes, are not even aware that a particular VoIP call is traversing its network. Furthermore, for the underlying broadband provider, data, video and voice traffic are primarily viewed as indistinguishable IP traffic.

In addition, Level 3 is concerned that if broadband providers are required to obtain ALI and make it available as a “service” to over-the-top VoIP providers for each end-point they serve, serious privacy concerns are created. For instance, it may be possible for a bad actor to hack into a broadband provider’s location repository, feigning to be an interconnected VoIP provider making an emergency call. For such reasons, Level 3 believes that underlying broadband service providers should not be held responsible for protecting interconnected VoIP service provider customer’s CPNI.²⁰ In order to address the privacy and other complications related to the requirements proposed in this proceeding, Level 3 urges the Commission to fully investigate the most efficient, effective and secure way for VoIP service providers to obtain and deliver ALI, before it creates any new rules.

¹⁸ See 47 C.F.R Part 64, Subpart U.

¹⁹ See *FNPRM* at ¶ 76.

²⁰ See *FNPRM* at ¶ 76.

CONCLUSION

Level 3 reiterates its support of the Commission's goal of improving E911 availability and location determination for users of interconnected VoIP services. It also agrees that the Commission should begin investigating a framework for how ALI can be provided by interconnected VoIP providers in times of emergency. However, Level 3 and other parties commenting in this proceeding believe the Commission should address several issues before embarking on the full implementation of ALI requirements for VoIP providers, and that device manufacturers, VoIP service providers, underlying voice carriers, and broadband providers all have potential roles to play in determining and delivering ALI for VoIP emergency calls.

Respectfully submitted,

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