Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matters of	
IP-ENABLED SERVICES	WC Docket No. 04-36
E911 REQUIREMENTS FOR IP-ENABLED SERVICE PROVIDERS	WC Docket No. 05-196

REPLY COMMENTS OF LEVEL 3 COMMUNICATIONS, LLC

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Introduction and Summary

Level 3 Communications, LLC ("Level 3") is a facilities-based communications and information services company with an international network optimized for IP technology; Level 3 is a certified CLEC in 50 states and as such provides connectivity to the existing emergency services network. Level 3 provides VoIP service providers with the essential building blocks required to offer residential and business VoIP services. These facilities and services include network trunking, local numbers, local number portability, operator assistance, directory listings, directory assistance and E911 call routing services. Level 3 offers its services at the wholesale level; it does not offer its own retail VoIP service.

Level 3 is committed to helping the Commission develop an E911 regulatory regime that will guarantee VoIP customers' safety and enable the VoIP industry to

continue to flourish. Level 3 welcomes the opportunity to comment on the questions the Commission raises in its *VoIP E911 NPRM*.[1]

To properly balance the need to: (1) provide customers with appropriate and necessary access to emergency services; and (2) encourage continued development and deployment of innovative, low-cost IP-enabled services, the Commission should take the following steps.

First, the Commission must define the criteria that it will apply when deciding whether a provider of an IP-enabled application must provide access to emergency services. In the past, the Commission has relied on a four-part test to make that determination:

a. Is the service or device interconnected to the PSTN and does it offer real-time, two-way exchange of voice traffic.

b. Do customers using the service have a reasonable expectation of access to basic 911 and E911 emergency communications services.

c. Does the service compete with traditional mobile wireless or local line services.

d. Is it technically and operationally feasible for the service or device to support E911 capabilities.[2]

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[1] *See IP-Enabled Services and E911 Requirements for IP-Enabled Service Providers*, First Report and Order and Notice of Proposed Rulemaking, 20 FCC Rcd 10245 (¶¶ 57-62) ("*VoIP E911 Order*," "*Order*," or "*VoIP E911 NPRM*").

[2] *See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems and Amendments of Parts 2 and 25 to Implement the Global Mobile Personal Communications by Satellite (GMPCS) Memorandum of Understanding and Arrangements; Petition of the National Telecommunications and Information Administration to Amend Part 25 of the Commission's Rules to Establish Emissions Limits for Mobile and Portable Earth Stations Operating in the 1610-1660.5 MHz Band*, Report and Order and Second Further Notice of Proposed Rulemaking, 18 FCC Rcd 25340 (2003) ("*E911 Compatibility Order*").

By reaffirming that IP-Enabled applications that meet specified criteria will be required to offer access to emergency services, providers of these services will have the certainty of knowing what their obligations will be.

Second, the Commission should not expand the scope of its existing *Order* until information about and access to the various 911 systems within the United States are standardized in a way that allows providers greater certainty in delivering 911 calls to emergency responders. Imposing "911-type" obligations on those IP-enabled services that meet the Commission's criteria can be accomplished without dampening innovation and investment in new IP-enabled services *only if* providers of these services have a clear picture of the processes that need to be followed to enable access to emergency services. The existing patchwork of federal, state, local, PSAP and ILEC "requirements" do not provide this level of certainty.

Third, the Commission should be cautious about applying wireline rules to all VoIP applications. Level 3 urges the Commission as well as state regulators to adopt a flexible approach with respect to how interconnected VoIP providers meet their E911 obligations. VoIP's flexibility and the growth in broadband access will lead to ever-increasing use of nomadic or mobile VoIP with added features and functionalities not available on traditional phones (and, indeed, not even presently available on advanced VoIP phones). Application of certain wireline rules to VoIP services would stifle this innovation, to the detriment of the public interest.

Fourth, the Commission should refrain from adopting a fixed and unrealistic June 2006 deadline for automatic location sensing technologies. As all commenters that addressed this topic concluded, today's technology provides no solutions that can offer

this capability without significant risk of error. The Commission should not be in the business of picking technology winners and losers, but should instead allow development of these new technologies over a longer period of time, allowing the market and the industry to determine technological solutions (if any) that are more likely to deliver the desired functionalities.

Fifth, in approaching several of the specific questions raised by its NPRM, the Commission should avoid placing greater burdens on VoIP providers than on PSTN and CMRS providers. This principle of technological neutrality is important to ensure the benefits of VoIP are widely available to consumers and businesses. Consistent with this principle, the Commission should neither require nor permit state and local agencies to require redundant trunks to selective routers, impose additional compliance reporting requirements on VoIP service providers, or establish specific performance standards for updating customer-provided registered location information.

Sixth, the Commission should recognize that the states have a crucial role to play in collecting and remitting 911 fees, while ensuring that VoIP customers are not subject to duplicative fees. As with the other steps outlined above, this measure will ensure that all consumers receive the full benefits of high quality and economical VoIP services.

I. Expansion of the Requirements of the Order Should Occur Only After the Commission Defines a Standard for that Expansion.

When considering whether to expand the scope of IP-enabled services that must provide access to emergency services, the FCC should first establish criteria that providers of IP-enabled applications can apply to their applications. It would not be in the best interests of the Commission or the industry for the Commission to opine on the emergency access requirements for each innovative voice application that is introduced

into the market. Instead, the Commission must lay out clear rules that will allow providers to understand and plan for their obligations.

As discussed above, Level 3 believes that the four-part standard set out in the Commission's *E911 Compatibility Order* is the appropriate standard.[3] Any attempt to expand the scope of the 911 Order to IP-to-IP enabled services such as voice services that never connect to the PSTN or voice enabled interactive gaming programs such as an X-Box platform would be overreaching at this time. Such a dramatic expansion of the E911 obligations would hinder an industry that is already scrambling to meet the Commission's November 28, 2005 implementation deadline.

II. Once the Commission Establishes Criteria to Evaluate which Services Must Provide Emergency Services, the Commission Must Develop Uniform Standards for 911 Call Delivery.

Once the Commission has established the criteria necessary to evaluate whether an IP-enabled voice service must provide emergency access, the Commission should address the fundamental issues associated with 911 call delivery.

There is no unified "911 System" within the United States; rather, there are thousands of independent 911 systems, built upon an increasingly antiquated technology, not necessarily interconnected, each with differing standards, formats and requirements for delivery of 911 calls. In a world where communications devices are increasingly boundary-independent, maintaining differing local standards and practices for delivery of 911 calls is a recipe for public safety disaster. NENA standards play a key role in solving coordination problems and disseminating best practice information, but they are not mandatory. Equally important, critical information necessary for national VoIP providers

[3] *Id.*

to provide reliable service is not publicly available. The Commission should begin giving the necessary authority to existing bodies or create new organizations and procedures necessary to make this information available. This effort may entail either gathering the necessary information directly, or establishing an organization with delegated authority to gather and disseminate it to service providers. Establishing and standardizing this information will benefit the industry and consumers by facilitating the provision of robust nationwide 911 service.

In particular, the Commission should address the following problems with the current system. *First*, there is no centralized, publicly available database of PSAP boundaries or way for PSAPs to communicate changes to these boundaries in an accurate and timely fashion. Nor is there a centralized, publicly available database providing information about which PSAPs are connected to which Selective Routers, or which Selective Routers serve a particular PSAP.

Second, there is no standardized methodology for PSAPs to self-test their systems, including the time of day at which such tests should be conducted and the appropriate types of tests. Thus, it is difficult for companies to develop standards for quality that could serve as part of regularized processes or performance standards that could be included in contracts. Leadership from the Commission or a national agency with appropriate authority would serve an important role here. The role for the Commission or national agency would not end with information collection but would also include leading the industry as it moves toward an emergency services system that is based on Internet Protocols.

III. The Commission should be Cautious about Applying Wireline Rules to All VoIP Applications.

The existing wireline 911 delivery system and requirements were built with a circuit-switched network infrastructure in mind – an infrastructure that permitted a dedicated connection between two parties talking to one another. IP-enabled services are a different breed altogether. The Commission must regulate in a way that preserves the capabilities and potential of IP-enabled services. Even now, in their infancy, VoIP services can take on many different flavors and functionalities. Some VoIP services work more like fixed-location PSTN service, others more like mobile services. Recent innovations include the ability to dial one number and have multiple devices "ring" (either in sequence or simultaneously), or to transmit live video, data and other relevant information before, during and after a call. The extent of user "customization" opportunities for IP-enabled services (voice, video and data) is endless. The primary Commission objective should be to assure that calls for help are delivered to emergency responders where it is technically feasible to do so. Rigid requirements mandating the delivery of calls in a particular format accompanied by information typically transmitted in the wireline world (such as CPN and ANI) might not be the best public safety answer for new IP-enabled technology. For example, if an IP provider has allowed a user to use a single telephone number to ring multiple devices simultaneously: (a) providers will have a great deal of difficulty ascertaining automatically the location of the device from which the call was placed; and (b) the usefulness of the "calling party number" to the PSAP will be limited because a call-back to that number could be answered in more than one location by more than one person – perhaps not the person who summoned emergency assistance.

Indeed, the Commission may need to relieve IP-enabled providers from certain requirements applicable to fixed location services. Requiring VoIP carriers to validate addresses using the thousands of versions of the "Master Street Address Guide" ("MSAG"), for example, will only lengthen the period of time between a subscriber's reporting of a new Registered Location and the updating of location information in the relevant databases. In the short run, the Commission should allow VoIP providers to update Registered Location information in a manner that eliminates reliance on multiple standards for street addresses. Longer term, VoIP services will migrate to a more "mobile" (e.g., wireless broadband) format. The Commission must recognize that the methods of collecting and transmitting location information applicable in the wireline world must be changed significantly for IP-enabled services.

IV. The Commission Should Not Set a Date Certain or an Unrealistic June 2006 Deadline for Automatic Location Sensing Capabilities.

For the many reasons raised by virtually every party in the initial round of comments, the Commission should refrain from setting a June 2006 (or any other date certain) deadline for providing automatic geographic location sensing technologies.[4] No known technology or mix of technologies can provide such information at this time. Forcing a solution by imposing an arbitrary deadline will undermine both the public interest and the Commission's long-term goals by impairing development of effective

[4] *See*, *e.g.*, Comments of AT&T Corp., at 5-8; Comments of SBC Communications Inc., at 6-10; Comments of BellSouth Corporation, at 3-6; Comments of the United States Telecom Association, at 4-6; Comments of Qwest Communications Corporation, at 5-8; Comments of Verizon, at 1-4; Comments of the Information Technology Industry Council, at 5-10; Comments of Cisco, Inc., at 10; Comments of United Online, Inc., at 9-11; Comments of Vonage America Inc., at 7-11; Comments of Skype Communications, SA, at 10-22; Comments of Time Warner Inc., at 7-10, WC Dockets No. 04-36 & 05-196 (filed August 15, 2005).

technology and driving providers to adopt the quickest rather than the best solution. Particularly here, where a robust, effective, and efficient solution can dramatically enhance public safety, the Commission should allow industry and the market to drive development of appropriate technical solutions.

The Commission should make clear, however, that the proper approach is to develop technologies that obtain location information from the party best positioned to provide it for a given application. In some cases, that may be through functionality built into the end user device (such as GPS- or triangulation-based approaches). In other cases, that may be via location information recorded or otherwise provided by the last mile access provider. Rarely, if ever, will the upstream VoIP service provider itself be in the best position to provide this information.

V. The Commission Should Not Place Greater Burdens on VoIP Service Providers than on PSTN and CMRS Providers.

As the Commission has emphasized in its discussion of IP-enabled services,[5] one critical regulatory goal is technological neutrality. In this context, that principle dictates that the Commission should not impose greater 911 burdens on VoIP service providers than it places on PSTN and CMRS providers. Adhering to this tenet will secure public safety while ensuring that consumers receive the full benefit of competition among voice service providers.

In order to implement this critically important principle, the Commission should take the following steps. *First*, the Commission should not require VoIP providers to

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[5] *See, e.g.*, *Vonage Holdings Corporation*, Memorandum Opinion and Order, 19 FCC Rcd. 22404, 22431 (¶ 43) & n.154 (2004) (endorsing NENA's view that the Commission should "encourage vendor and technology neutral solutions" to national VoIP E911 concerns).

create redundant trunks to each Selective Router (SR) or to require that multiple SRs reach each PSAP.[6] This requirement would exceed that which is currently required for the PSTN and CMRS systems, and would place an unnecessary economic burden on the growth of new technology. For example, in the State of California, the Department of General Services has invoked an apparently unwritten policy that requires VoIP traffic delivered to emergency services agencies to be routed over trunk groups that are separate from trunk groups used to handle any other type of traffic. In the case of Level 3, this requirement is particularly burdensome since Level 3's interconnection trunks already in place to the selective routers are used to transmit IP-enabled traffic – the only type of traffic that can originate on the Level 3 network. The net effect of this rule would require Level 3 to order new trunks, disconnect its existing trunks and then shift its traffic to the new trunks even though all the traffic is IP-enabled.

The effect of such a requirement would be inefficient and would delay the ability of any provider to meet the FCC's November 28 deadline. Moreover, as NENA has observed, redundancy is not necessary at this time.[7] Other parties as well oppose any such requirement.[8] If the Commission decides to consider imposing redundancy requirements in the future, it must determine whether current prices for access to

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6 *See* VoIP E911 NPRM ¶ 59.

7 Comments of NENA, WC Dockets No. 04-36 & 05-196, at 12 (filed August 15, 2004) ("While utilizing multiple connected selective routers would be a positive step in providing redundancy and diversity, this is not currently in place in much of the country today and a realistic funding mechanism would be needed to accomplish this.").

8 *See, e.g.*, Comments of Verizon, at 5, WC Dockets No. 04-36 & 05-196 (filed August 15, 2005).

Selective Routers are cost-based and, if not, whether pricing reform is necessary before the establishment of redundant trunk and Selective Router coverage requirements.

Second, the Commission should not impose additional reporting requirements on service providers for compliance with the existing *Order* or performance standards for updating customer-provided location information.[9]

Third, the Commission asks whether Wi-Fi and WiMAX devices should be regulated, with respect to 911 capabilities, using the existing CMRS rules.[10] Wi-Fi devices closely resemble cordless telephones, sharing the same frequency bands, coverage limits and power restrictions. Accordingly, Wi-Fi based VoIP services, like cordless telephones attached to the PSTN, should not be subject to any CMRS-specific regulations. And any application of CMRS regulation to WiMAX devices would be premature as few, if any, such devices are currently in use. For these reasons, CMRS rules should not be extended to Wi-Fi and WiMAX devices.

VI. The Commission Should Allow States To Play a Role in Collecting and Remitting Fees.

The Commission seeks comment on the proper role of state authorities in the VoIP E911 system.[11] Level 3 believes that one important role that states can play is in collecting and remitting fees for 911 services. In carrying out this objective, however, the states must be careful to avoid imposing duplicative layers of fees on VoIP customers. This result would occur if the state imposed a fee on both the non-facilities-

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[9] *See VoIP E911 NPRM* ¶ 60.

[10] *Id.* ¶ 59.

[11] *Id.* ¶ 61.

based VoIP service provider and the broadband service provider. Because no distinction exists between the service provider and the transport provider in the PSTN and CMRS context, such double-counting would harm VoIP customers and distort the market.

Conclusion

The Commission's existing *Order* has set a high bar for the establishment of a safe and reliable 911 system for interconnected VoIP services. In moving forward, the Commission should define the criteria for determining whether specific services must provide access to emergency services and then focus efforts on fostering the ability of IP-enabled service providers to connect to emergency service providers in a safe, efficient and reliable manner. Changes to the existing 911 systems deployed across the U.S. are required in order to assure that public safety concerns are met. Before questions about the scope of 911 obligations imposed on IP-enabled providers can be answered, these fundamental issues need to be addressed.

Respectfully submitted,

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