

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

In the Matter of)	
)	
IP-Enabled Services)	WC Docket No. 04-36
)	
E911 Requirements for IP-Enabled Service Providers)	WC Docket No. 05-196
)	

COMMENTS OF NENA

August 15, 2005

TABLE OF CONTENTS

I. Summary.....3

II. Further Development of Automatic Location Technology for VoIP Services.....5

 Standards are crucial.....6

 Terminal equipment vs. network location.....7

 Beyond the status quo.....8

 Feasibility.....9

III. Extending the Scope of the Order to Cover all IP-Enabled Voice Services.....9

IV. Need For Additional Regulations.....10

 Location updates.....10

 Service areas without E9-1-1.....11

 Unlicensed wireless and satellite broadband.....12

 Redundancy and diversity.....12

V. Role of States in Implementing IP-Enabled E9-1-1 Rules.....13

VI. Customer Privacy Protections.....15

 Names in location records.....16

VII. VoIP Services and Persons with Disabilities.....16

VIII. Conclusion.....16

IX. Exhibit A.....18

SUMMARY

The most important thing the Commission can do in advancing IP-enabled E9-1-1 is to coordinate and encourage the timely development of national standards and require the early adoption of these standards as they become available. We agree with the report of NRIC VII Focus Group 1B that “every Access Infrastructure Provider (AIP), wireline or wireless, supply location information to endpoints.” Necessarily, the preceding Order in this docket is focused on today’s 9-1-1 system infrastructure. However, the actions taken as a result of comments in the NPRM must have the flexibility to evolve with the evolution of a “next-generation” network.

Until geodetic solutions improve to match the overall location accuracy of fixed wireline addresses, NENA cautions against using latitude and longitude to specify location of fixed and nomadic VoIP callers. To maintain parity with callers on today’s wire infrastructure, MSAG validated civic addresses should be employed.

NENA suggests that all devices or services that can send calls to the public switched telephone network should have E9-1-1 obligations, but the same is not true for devices or services that allow receipt of calls without permitting their termination on the public switched network. In terms of timing of location updates, VoIP providers should at least meet existing wireline standards. Where there is only basic 9-1-1 service (no Selective Router), the obligations of VoIP providers should match as closely as possible to those of wireless providers.

NENA believes it would be premature to apply to unlicensed wireless and satellite-based broadband VoIP services the same requirements imposed on commercial mobile radio service providers. While redundancy and diversity are critical in avoiding single points of failure in E9-1-1 call delivery, it is not obvious that – if funds were available – money would be better spent on redundant trunking to selective routers or interconnecting these routers for use by VoIP

providers. As noted in these comments, we are working toward an NG9-1-1 solution that does not depend on the existence of the current Selective Routers. Available dollars might go farther in that direction.

The states' historic interest in a responsibility for public safety will not disappear with the creation of new federal mechanisms or requirements. The state role in funding is particularly important. Because governmental structures vary across the states, 9-1-1 coordination offices or boards should be given equal consideration with public utility commissions in fashioning federal-state collaboration.

Protection of customer privacy should not vary widely by medium – wireline, wireless or IP-enabled wire or wireless service. The FCC needs to specify that customer names are permissible elements of VoIP subscriber records, but may only be disclosed in connection with legitimate call-taking and response. If Congressional action is required, NENA would support this. NENA commends to the Commission a close reading of the report of Focus Group 1B of NRIC VII on IP E9-1-1 access for persons with disabilities.

The National Emergency Number Association (“NENA”) hereby responds to the Notice of Proposed Rulemaking in the captioned proceeding¹. As stated in a NENA VoIP policy statement,² NENA fully supports the actions taken by the Commission in the Order that accompanies this Notice of Proposed Rulemaking (“NPRM”) and is pleased that the Commission is raising numerous important issues in the NPRM which need to be addressed. NENA is actively working with stakeholders, both public and private, to reach common-sense solutions in today’s environment while working toward a future path that meets established industry standards. Overall, NENA continues to encourage the Commission to provide “directive influence” that will enable the development of a nationally-coordinated effort³ to address the issues raised in the Order and NPRM.⁴

Further Development of Automatic Location Technology for VoIP Services

The NPRM seeks comment on what the Commission can do to further the development of automatic location technology for VoIP services of all types, including whether the Commission should expand the scope and requirements of the Order. As the Commission acknowledges, due to the existing state of technology, the Order relies in some cases on users of VoIP services to provide the location information that will support PSAPs when a 9-1-1 call is made. NENA understands the dependence on today’s technology but feels it extremely important to expedite solutions that can be developed, tested and deployed for the automatic location of IP-enabled 9-1-1 callers.

¹ 70 Federal Register 37307, June 29, 2005.

² NENA Policy Statement on FCC VoIP E9-1-1 Order available at http://www.nena.org/VoIP_IP/FCC%20VoIP%20and%20E9-1-1%20Order.pdf

³ Ex parte communications, WC Docket 04-36, April 21 and May 11, 2005.

⁴ An immediate FCC support item is the establishment of a national Routing Number Administrator (RNA) as recommended in NENA’s filing of August 15, 2005.

Standards are crucial. NENA believes the most important thing the Commission can do in this regard is to encourage the development of national standards and require the early adoption of recognized national standards when they become available. As rules are issued concerning automatic location requirements, it is critical that the Commission provide reasonable guidelines to enable a path forward but allow the appropriate standards processes to determine the specific methodologies to meet such guidelines. In doing so, the FCC will contribute needed leadership toward the facilitation of a nationally-coordinated effort in delivering IP-enabled E9-1-1 service. Arbitrary requirements that are not based on technological capabilities now being addressed in standards development processes should be avoided.

Appropriate location solutions are necessarily dependent on the type of VoIP service being offered. Some solutions, such as geodetic, are applicable to VoIP where wireless air links are involved. Some require civic address for the foreseeable future in order to maintain equivalence of accurate location provided through conventional wire telecommunications services in place today.⁵ Alternative solutions must be evaluated in advance for public safety and E9-1-1 impacts. Such evaluation is most appropriately accomplished through nationally-recognized standards processes. The Commission should encourage the development of applicable standards, encourage the involvement of all E9-1-1 related parties in standards development, and insure that those parties will organize to accomplish the needed standards work in a timely manner. In doing so, the FCC should also work with other coordination bodies such as the national 9-1-1 Implementation and Coordination Office (ICO) being set up by

⁵ For these purposes, “geodetic” refers to latitude and longitude or analogous expressions of location. “Civic” means street addresses and community names.

NHTSA and NTIA under the ENHANCE 911 Act of 2004 (Public Law 108-494)⁶. (Ongoing standards and technical architecture efforts in this area are listed in Appendix A at the end of this document. We ask the Commission to encourage the coordination and timely completion of these efforts.)

User location may be provided effectively through storage of the location data in the user device prior to an actual 9-1-1 call initiation. Another method is real-time acquisition of the location data from an associated internetworked server, as assumed in the NENA NG9-1-1 (I3) design of IP-based E9-1-1.⁷ Either way, each device must be able to store or interact with other devices to provide user location. The NG9-1-1 design will provide a standards-based approach to automatic location identification. Support of this standards work by the Commission will focus development efforts by the VoIP industry toward methods that will properly support automatic location needs.

Terminal equipment vs. network location. The Commission specifically seeks comments on whether it should require all terminal adapters or other equipment used in the provision of interconnected VoIP service sold as of June 1, 2006 to be capable of providing location information automatically, whether embedded in other equipment or sold to customers as a separate device. IP service providers and interested manufacturers are best able to say whether this method and deadline are feasible. However, NENA agrees with the recommendations of NRIC Focus Group 1B which states, “Because location is critical to the E9-1-1 system, and newer technologies make it impractical for the entity providing communications

⁶ Text of PL 109-494 available at: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_public_laws&docid=f:publ494.108.pdf

⁷ Description of I3 available at http://www.nena.org/VoIP_IP/I_short_descriptions%20for%20web1.pdf

services to know where the user is, we advocate that every Access Infrastructure Provider (AIP)⁸, wireline or wireless, supply location information to endpoints.”⁹

The report also states, on page 19, “Where the AIP is the voice service provider, the information can be supplied directly. Where the AIP is not the voice service provider, but is the data provider (the “Internet Service Provider” or equivalent), it can supply endpoints with location, and the endpoints can provide this location on the call signaling when placing an emergency call. Where the AIP is neither the voice or data provider, it would need to have a relationship with the party who was, and can supply location data to that provider. Note that PSTN and wireless telephony providers would meet this requirement already.” Via the appropriate regulations and standards, a requirement for the interaction between AIP and endpoint provider for the provision of location information to support E9-1-1 service and caller safety must be accomplished.

Beyond the status quo. It is important to repeat that the Order is currently focused on today’s 9-1-1 system. As stated in the Order, the current wireline E9-1-1 network is “based on a 25-year-old architecture and implemented with legacy components that place significant limitations on the functions that can be performed over the network.” *Order*, ¶14. As new technology is developed, IP-enabled service providers will naturally seek to provide services based on the most modern technology available to them and are less likely to offer E9-1-1 service using the wireline E9-1-1 network as it currently exists. For example, the current Order requires 9-1-1 calls to be delivered to a Selective Router where available. By contrast, while the NENA I3 standard will still require the selective routing function for all 9-1-1 calls, the I3

⁸ An Access Infrastructure Provider is the wire plant owner or the wireless radio access network provider, including enterprises.

⁹ Page 19 of the NRIC 1B report also states, “In the PSTN, the carrier that owns the wire plant supplies the voice service, and thus can also supply the 9-1-1 system with the location information of the caller, associated with the phone number. With newer systems, such as VoIP, this association breaks down.”

standard assumes that the future 9-1-1 network will not require the use of current physical Selective Router switches. Therefore, the Commission must be flexible as the E9-1-1 network evolves to include rules that account for technological advances¹⁰ and not limit progress by forcing providers to maintain solutions based on today's wireline E9-1-1 network.

Feasibility. The NPRM also asks if there are any solutions that are believed to be unworkable. While technically feasible, NENA believes that geodetic solutions designed to provide location data for fixed/nomadic (non-wireless) VoIP 9-1-1 calls from a fixed location are unacceptable and would amount to a degradation of service as compared to existing fixed wireline E9-1-1 service based on civic addressing using current technology solutions. Providing the latitude and longitude of a fixed/nomadic (non-wireless) VoIP 9-1-1 call is not yet the same level of service that citizens have come to expect when making 9-1-1 calls from a fixed location. For example, geodetic location of a person calling 9-1-1 from home could result in first responders searching all the houses on a block of a densely populated residential area to determine where the actual call originated, resulting in valuable time lost. Until the accuracy of geodetic solutions can be improved, and PSAPs are universally equipped to utilize this information, this is simply unacceptable.

Extending the Scope of the Order to Cover All IP-enabled Voice Services

As noted in the NPRM, the scope of the current Order is limited to providers of interconnected VoIP services. The NPRM seeks comment on whether the Commission should extend these obligations, or similar obligations, to providers of other VoIP services that are not currently covered. Specifically, the Commission asks if E911 obligations should apply to VoIP

¹⁰ See NENA I3 standards development, the work of the NRIC 1B and 1D Focus Groups and the work of the NENA Next Generation E9-1-1 Program.

services that enable users to terminate calls to the PSTN but do not permit users to receive calls that originate on the PSTN or the converse situation in which a VoIP service enables users to receive calls from the PSTN but does not permit the user to make calls terminating to the PSTN.

NENA believes it is important that all devices or services which can send calls to the PSTN have E9-1-1 obligations, recognizing that, just as with some pay phones and other services, the caller may not be re-contacted in the event communication is interrupted. This limitation demonstrates the importance of location being delivered in case there is no voice contact or the call is terminated before a location can be stated. NENA does not believe E9-1-1 obligations need to be placed on services that enable users to receive calls from the PSTN but does not permit the users make calls terminating to the PSTN.

Need For Additional Regulations

The NPRM asks if the Commission needs to adopt additional regulations to ensure that interconnected VoIP service customers obtain the required level of E9-1-1 services and asks numerous detailed questions in this regard. As a general sentiment, NENA again emphasizes that technical and operational standards and requirements are key components for advanced solutions and improvements beyond the original FCC Order. We have noted above the usefulness of a requirement for necessary interaction between an AIP and an endpoint provider to obtain customer location. However, the Commission need not provide a solution to every potential issue through regulation at this point but should encourage cooperative standards development processes to address important issues.

Location updates. Performance standards have been created and are continually being updated for various wireline and wireless E9-1-1 location and call delivery processes. For

instance, wireline E9-1-1 data standards recommend that various segments of the address/location record creation and update be done within one business day of service start (NENA 02-010)¹¹. Segments include submission of the address record by the customer's provider to the ALI database provider within a business day and insertion in the ALI database by the ALI provider within a business day. While some VoIP providers, depending on their E9-1-1 solutions, may be able to process address information so that it can be used for routing and delivered to PSAPs in shorter time frames, others are following wireline processes, including submission of data to an ALI database provider. Thus, address record additions/change timelines are not totally within their control. At a minimum, VoIP Providers should meet existing wireline standards when an end user updates Registered Location information and when the service provider takes the actions necessary to enable E9-1-1 from that new location.

Service areas without E9-1-1. Because non-native numbers may be assigned to fixed or nomadic customers,¹² and because nomadic customers may receive service at other than home ports, delivery of callback number in areas where there is only basic 9-1-1 may be problematic. There are possible methods to work around limitations, such as use of a second local number assigned to customers, for use when 9-1-1 is dialed. While the development of appropriate standards and guidelines may be beneficial in this area, regulatory consideration should include evaluation of what has been done for wireless 9-1-1 regarding areas of the country without a selective router and/or without wireline E9-1-1.

¹¹ NENA 02-010 standard available at http://www.nena.org/9-1-1TechStandards/na_standards.htm

¹² Non-native numbers are those with area codes not served locally by a telephone company 9-1-1 System Service Provider's network.

Unlicensed wireless and satellite broadband. Wireless VoIP delivery via WiFi, WiMax or satellite broadband has unique challenges as such access methods increase in size and use. While wireless VoIP applications are likely to utilize geodetic location solutions, the background technology involved is not necessarily similar, and may have different capabilities. These capabilities are not yet clear, and are possibly unlike CMRS solutions. It is therefore not clear that any CMRS requirements are literally applicable to wireless VoIP and thus should not apply to VoIP providers until more information is available in this area. It is important that groups like the WiFi Forum, WiMax Alliance and their respective industry standards groups be encouraged to participate in 9-1-1 location standards development processes.

Redundancy and diversity. The NPRM seeks comment as to whether the Commission should require VoIP service providers to create redundant systems for providing E9-1-1 services, such as requiring redundant trunks to each SR and/or requiring that multiple SRs be able to route calls to each PSAP. Redundancy and diversity remain critical components of well-designed E9-1-1 systems as they are keys to eliminating single points of failure. Traditionally, the technical requirements for redundancy and diversity have most often been developed within a standards process. 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. Multiple interconnected SRs would be of benefit for wireline, wireless and VoIP E9-1-1 services alike given the current 9-1-1 system architecture. We point out that the best practice for any connectivity to a selective router has always been that there must be at least two trunks. Depending on E9-1-1 solutions, VoIP providers working together with 9-1-1 network providers may be able to provide more redundancy and diversity than has been possible in either wireline or wireless scenarios and the

financial burdens on PSAPs and 9-1-1 authorities may be less. As mentioned earlier in this document, it is important to reiterate that the NENA I3 standard assumes that the future 9-1-1 network will not require the use of SRs. Investments in the 9-1-1 network may in fact be better spent on advancing to a next generation system than for multiple interconnected SRs. This issue is currently being addressed by NENA.

Role of States in Implementing IP-enabled E9-1-1 Rules

The Commission recognizes in the NPRM the importance of states in public safety matters and seeks comment on what role states can and should play to help implement the E911 rules. Specifically, the NPRM asks if state and local governments should play a role similar to the roles they play in implementing the Commission's wireless 9-1-1/E9-1-1 rules.

Historically, emergency response and public safety have largely been the responsibility of state and local government. Likewise, public access to such services continues to be a major focus of these non-federal jurisdictions, even in this day of heightened national homeland security concerns. While the issues being addressed by this NPRM and ongoing efforts elsewhere -- including the NRIC process and NENA's standards development and NG E9-1-1 Program -- are dramatically changing the historical landscape of 9-1-1, the state and local interest in the services will remain high. NENA feels strongly that comprehensive national solutions to these issues must balance the interest and responsibility of all three levels of government, recognizing the emerging nature of IP-enabled services and the diversity of state and local government. As appropriate, the FCC can and should play a role in clarifying that responsibility, and facilitating interaction among all levels of government.

NENA suggests that diversity may actually be a strength rather than a complication—as different approaches are tried and experiences shared. As a first step, the FCC can facilitate that sharing by regularly bringing together state and local governmental stakeholders to discuss the status of 9-1-1 issues. Such forums should include organizations representing all stakeholders, public and private, keeping in mind that often more than one organization will represent a particular stakeholder group¹³. Such discussions will likely result in substantive input to the questions raised on this subject in the NPRM.

Consistent with previous statements, NENA emphasizes the necessity of state coordination in the deployment of E9-1-1 services. The importance of state coordination for wireless E9-1-1 has been recognized by the FCC and Congress through the Wireless Public Safety and Communications Act of 1999 and the ENHANCE 911 Act of 2004. This has proven to be a valid position as states with a coordination entity are generally further along in the Phase II wireless E9-1-1 deployment process. Thus, for the deployment of IP-enabled E9-1-1 services, the FCC should encourage coordination at the state level, while recognizing that the delivery of 9-1-1 service is managed at the local level and that local PSAPs have an important role to play in the deployment of VoIP E9-1-1.

In a related matter, the FCC recently announced a joint FCC/NARUC Task Force on VoIP Enhanced 9-1-1 enforcement in which staff from both the FCC and state public utility commissions will serve as members to facilitate the timely and effective enforcement of the Commission's VoIP E9-1-1 rules. For reasons mentioned above, NENA applauds the Commission for affirming a state regulatory role in the enforcement of VoIP E9-1-1.

¹³ For example, while most states have public utility regulatory commissions dealing with such matters, many states also have separate state 9-1-1 governmental entities responsible for 9-1-1 program activities. Hence, both NARUC and NASNA might be involved.

Recognizing that in some states utilities regulatory commissions share a responsibility for 9-1-1 issues with a state 9-1-1 coordination entity, NENA believes that it is important for state 9-1-1 coordinators to be represented on this task force, or closely consulted with at a minimum.

The NPRM also seeks comment on whether the Commission should take any action to facilitate the states' ability to collect 9-1-1 fees from interconnected VoIP providers, either directly or indirectly. NENA encourages the FCC not to take any action that will prevent states and localities from collecting fees VoIP service providers.¹⁴ 9-1-1 depends on the ability to collect fees from providers of interconnected voice services. While that is true today, NENA also acknowledges that a shift in the 9-1-1 funding model may be needed as we move to the next generation IP-enabled E9-1-1 network. This subject is a main topic of the NENA NG E9-1-1 Program. While NENA is looking at next-generation funding models it is critical that state and local governments retain their ability to collect fees from interconnected VoIP providers or their customers.

Customer Privacy Protections

The NPRM seeks comment as to whether the Commission should adopt any customer privacy protections related to provision of E9-1-1 service by interconnected VoIP service providers. NENA feels that customer privacy protection should be fairly balanced across all forms of access to 9-1-1 services. The public will expect that. Consequently, as legally appropriate and available, the Commission should ensure that such protection is applied to VoIP services.

¹⁴ The FCC ultimately may decide that it must "classify" VoIP service in some way that distinguishes it from, say, conventional wire service. We do not mean that the way state 9-1-1 funding laws are presently written needs to enter into the classification decision. However, the FCC should avoid finding that a particular classification necessarily precludes 9-1-1 surcharges on VoIP providers.

Names and location record. In general, wireline ALI databases include customer name/business name for each phone number record and this information is included within the ALI record delivered to and displayed at the PSAP during a 9-1-1 call. Inclusion of the name is covered by existing NENA standards (02-010 and 02-011)¹⁵ and by other best practices throughout most of the country. However, the FCC VoIP and 9-1-1 order did not mention delivery of customer name/business name as part of the location record for a VoIP 9-1-1 caller. For various reasons, this information is very important within wireline E9-1-1 and should not be forgotten or omitted in VoIP E9-1-1, particularly for services marketed as wireline replacements.

VoIP Services and Persons With Disabilities

The NPRM asks if the Commission needs to take steps to ensure that people with disabilities who desire to use interconnected VoIP service obtain access to E9-1-1 services. NENA notes that Focus Group 1B of the currently chartered Network Reliability and Interoperability Council (NRIC VII) is addressing access issues as they apply to future 9-1-1 networks, including future VoIP service solutions within the focus of this NPRM. NENA asks that the Commission closely review those recommendations to insure that people with disabilities who desire to use interconnected VoIP service obtain access to E9-1-1 services.¹⁶

Conclusion

For the reasons stated above, the FCC should continue and improve upon its directive influence in seeing that needed standards efforts for IP E9-1-1 are coordinated and completed in a timely fashion. While NENA has provided certain specific examples of needed or unneeded

¹⁵ Note 11, *supra*.

¹⁶ This is particularly important, since IP based services, by nature, may offer more effective ways for people with disabilities to request emergency response services.

regulation, the Commission should not specify a rule to solve every potential issue at this point, but should encourage cooperative standards development to address important issues.

Respectfully submitted,

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Appendix A

Ongoing Standards and Technical Architecture Efforts

NENA Formal Documents:

- **NENA Technical Information Document (TID) re Standards Development Organization (SDO) work status on VoIP and 9-1-1**
- **NENA TID on E9-1-1 Requirements**
- **NENA Migratory Solution (I2) standard (Currently in the public review phase, prior to NENA Board approval as a NENA Standard)**
- **NENA NG9-1-1 Solution (I3) standard (Currently in the last phase of requirements definition, with a publication date estimated in late 2005)**
- **NENA IP Capable PSAP Features and Capabilities standard**

Additional documents are also obtainable on the NENA web site (www.nena.org) – see VoIP/IP, technical standards and operational standards subpages

NENA Technical Development Work In Progress or Planned:

- **NENA Ad Hoc work group on Routable Non-dialable access to E9-1-1 Selective Router** **Started August 3, 2005**

This work group is evaluating the technical capability, and pros and cons, of utilizing routable and non-dialable PSTN connectivity from a VoIP provider to the E9-1-1 Selective Routing switch.

- **MSAG national data access work group** **Started August 8, 2005**

This work group is analyzing the options and needed changes to enable Master Street Address Guide (MSAG) data to be accessible for VoIP E9-1-1 purposes.

- **NENA Data Committee VoIP Local Number Portability work group** **Started Aug 10, 2005**

The purpose is to identify and resolve methods to support LNP for VoIP E9-1-1 service

- **NENA filing with FCC on recommendations for national Routing Number Administrator (RNA) – dated August 15, 2005**
- **NENA Company ID (CoID) program expansion for VoIP provider support** **Scheduled for August 2005**

PSAPs must be able to identify the service provider associated with a given 9-1-1 call through the ALI data provided with an E9-1-1 call. The Company ID provides this capability and the related 24x7 contact info for each service provider.

- **National Selective Routing switch listing (to be available through the NENA web site)** **August 2005**

VoIP service providers or their contracted vendors need information on Selective Router locations, service area, and SR operating entities contact. This password protected listing will be available through the NENA website.

- **NENA VoIP and E9-1-1 Q&A site** **Launch in August 2005**

General information and answers on frequently asked questions about VoIP and E9-1-1.

- **NENA E9-1-1 System access security work group** **August, 2005**

This work group is defining proposed procedures to validate companies wishing to act as telecommunications service providers, and to acquire access to E9-1-1 Selective Routing switches and related data systems.