BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

In The Matter Of	)	
Revision Of The Commission's Rules To Ensure Compatibility With Enhanced 911 Emergency Calling Systems	)	CC Docket No. 94-102

COMMENTS OF THE ENTERPRISE COMMUNICATIONS ASSOCIATION

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SUMMARY

In considering the establishment of E911 requirements for multi-line telecommunications systems ("MLTSs"), the Commission should recognize that the enterprise market presents a materially different E911 implementation challenge from the traditional wireline residential market or the wireless market. In the wireline residential and wireless contexts, carriers and E911 data base administrators can implement automatic location identification ("ALI") largely on their own. By contrast, in the enterprise market where MLTSs generally are found, responsibility for implementing ALI necessarily falls primarily on the millions of end users that operate their own MLTSs. Neither the FCC nor state governments can craft successful E911 technical solutions without realistically evaluating the tasks that end users reasonably can be expected to take on.

States have generally failed to make such a realistic assessment of the end user's role in implementing ALI. The model legislation crafted by the National Emergency Number Association ("NENA") with the help of ECA member companies has been largely ignored by state legislatures to date. Only two states – Illinois and Minnesota – have addressed the E911 MLTS issue in a way that reflects even in part the recommendations of the model legislation. The remaining states have either imposed unrealistic burdens on enterprise customers or have failed to adopt legislation that broadly addresses the MLTS ALI problem.

Therefore, the Commission should fill the void by adopting regulations, applicable to end users operating MLTSs, that incorporate the provisions of the NENA model legislation *in their entirety.* The Commission should also preempt inconsistent state statutes.

The Commission can safely rely on market forces to ensure that manufacturers build equipment that meets MLTS end users' E911 needs. However, the Commission should adopt rules applicable to local exchange carriers ("LECSs") as owners of bottleneck local facilities, to ensure that communications services and facilities required to meet MLTS E911 requirements are readily available.

Finally, the Commission should recognize that the application of E911 ALI regulations to IP-enabled MLTSs must await further development of industry standards. The Commission should establish an advisory committee or working group that specifically focuses on the unique problems posed by E911 implementation for IP-enabled MLTSs. ECA would welcome the opportunity to participate in such a committee or group.

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The Enterprise Communications Association ("ECA") submits the following comments in response to the Commission's Public Notice, DA 04-3874, released December 10, 2004 ("*Public Notice*").

STATEMENT OF INTEREST

ECA is the leading trade association promoting the growth of markets and effective sales channels for converged communications solutions deployed by enterprise businesses. ECA brings together a diverse membership base including manufacturers, distributors, network service providers, sales channel companies, systems integrators, applications developers, and consultants. ECA and its members are working toward helping the enterprise marketplace reach the promise of truly converged voice, video and data networks/solutions. ECA is dedicated to demonstrating to customers, to distributors, and to policymakers the business and social benefits delivered by the IP-enabled and other emerging technologies of ECA member companies.

Many members of ECA were previously leading members of the Multi-Media Telecommunications Association ("MMTA"), which was actively involved in several earlier phases of this proceeding. In 1996-97, MMTA worked with the Ad Hoc Telecommunications Users Committee, the National Emergency Number Association ("NENA"), and the Association of Public-Safety Communications Officials International, Inc. ("APCO") to develop a "consensus" proposal on E911 and multi-line telecommunications systems ("MLTSs"), which the four parties jointly submitted for the consideration of the Commission in this docket.[1] Subsequently, in 1999-2000, ECA member companies, under the auspices of MMTA, worked with NENA to develop the model legislation on E911 for MLTS, which NENA submitted to the Commission July 24, 2001.[2] The parties working on the NENA model legislation were aware of, and attempted to improve upon, the Docket No. 94-102 consensus proposal.

DISCUSSION

I. PRELIMINARY CONSIDERATIONS

In considering the establishment of E911 automatic location identification ("ALI") requirements for MLTSs, the Commission should recognize that the enterprise telecommunications market, where MLTSs are typically found, presents a challenge that

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[1] *See Revision of the Commission's Rules to Ensure Compatibility with Enhanced 911 Emergency Calling Systems*, Report and Order and Second Further Notice of Proposed Rulemaking, 18 FCC Rcd 25340, ¶ 57 n.198 (2003).

[2] NENA, Technical Information Document on Model Legislation: Enhanced 9-1-1 for Multi-Line Telephone Systems (November 2000) ("*Model Legislation*"). *See* MLTS Proposal of NENA and APCO, CC Docket No. 94-102 (filed July 24, 2001) (submitting the *Model Legislation* for FCC review).

is materially different from both the traditional wireline residential context and the wireless service market.

In the traditional wireline residential service context, caller location usually can be determined by using the caller's telephone number to retrieve the caller's billing address from a data base populated with billing information maintained by the local exchange carrier ("LEC") serving the caller's telephone. Therefore, LECs and data base administrators can provide E911 ALI for traditional wireline residential telephones virtually on their own. Apart from providing a billing address at the time of subscription, the caller is not required to play a significant role in the E911 ALI system.[3]

Similarly, in the world of licensed wireless services, carriers are able to more or less unilaterally deploy technologies that will automatically determine the caller's location, without the involvement of the end user. Therefore, the Commission has imposed upon wireless carriers the burden of implementing E911 ALI requirements for licensed wireless services. *See* 47 CFR § 20.18.

In the MLTS context, by contrast, the resources available to carriers and E911 data base administrators frequently do not enable them to provide ALI with the precision demanded by public safety agencies. In general, the only party with access to the information necessary to determine a MLTS caller's precise location is the end user who owns or operates the MLTS. Thus, in the MLTS context, unlike the wireline residential and licensed wireless service contexts, much of the burden of implementing ALI MLTSs inevitably falls on the millions of end users in that market – primarily large and small businesses and other enterprise customers.

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[3] Of course the caller is asked to provide *human* confirmation of his or her location whenever possible.

In order to ensure accurate ALI, end users operating MLTSs must complete a series of complicated tasks. First, the end user must decide upon a location identification scheme that ensures each telephone station has an identified location, often referred to as an Emergency Response Location ("ERL"), *and* that the location ID provides meaningful information to PSAPs.[4] The end user's next task is to select a numbering scheme for locations (not necessarily based on dialable telephone numbers) that can be implemented, is acceptable to the PSAP, and provides the degree of specificity required. Next, the end user must establish its own data base where all of this information is compiled, maintained, and updated. The end user must then provide all the location information and associated numbers, in an appropriate format, to the entity maintaining the central ALI data base, so that the ALI data base administrator can "populate" the data base with that information. Next, the end user must establish a reliable procedure (either manual or automated) for timely updates to the end user's own location data base and the provision of those updates to the central ALI data base. Finally, the end user must purchase appropriate equipment and facilities to ensure that there is transmitted, with any 911 call, the number associated with the caller's location in an appropriate format to enable the caller's location to be retrieved from the central ALI data base.

In short, provision of ALI from MLTSs requires unprecedented involvement by millions of end users in the technical details of the E911 system. To assist in this process, carriers, service providers, and manufacturers and retailers of customer premises equipment all have roles to play. Retail sales channels, for example, can assist

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[4] As a simple example, the end user may decide to designate each room in a building as a separate ERL. In that case, the end user must ensure that a room number actually appears on the door of each room.

end users by educating them on the applicable requirements and available resources, helping them design an appropriate ALI plan, and helping them select appropriate MLTS equipment and communications facilities. Ultimately, however, responsibility for implementing an effective ALI system falls primarily on the end user.

As a result, neither the FCC nor state governments can craft successful 911 technical solutions without realistically evaluating, as a practical matter, the roles and burdens that million of end users reasonably can be expected to handle.

II. STATE LEGISLATION

In the *Public Notice,* the Commission requests information about whether the states are effectively addressing E911 requirements for MLTSs and the extent to which states have used the NENA model legislation or other models as the basis for legislation.

The NENA model legislation, which resulted from extensive discussions involving numerous segments of the E911 community, provides an effective vehicle for addressing E911 requirements for MLTSs, because it reasonably reconciles public safety needs with the practical realities of the MLTS marketplace, discussed above. Unfortunately, however, most states have yet to address the MLTS issue, and most of the states that have addressed it have not made use of the NENA model.

A. Key Provisions of the NENA Model Legislation

There are several key provisions of the NENA model legislation that make it, in ECA's view, a viable approach to addressing E911 requirements for MLTSs.

First, the NENA model legislation does not attempt to impose unrealistic requirements on MLTS configurations for which compliance is not feasible at this time.

Under the model legislation, operators of the following categories of MLTSs are permitted to define the entire premises served by the MLTS as a single "Emergency Response Location" ("ERL") identified by a single "Emergency Location Identification Number" ("ELIN"):

> (1) MLTSs serving a single contiguous property smaller than 7,000 sq. ft.;
>
> (2) MLTSs with less than 49 stations serving a single contiguous property smaller than 40,000 sq. ft.; and
>
> (3) MLTSs configured as key systems.

Model Legislation §§ 3, 11. Moreover, recognizing that E911 standards for wireless and IP-enabled telephones used with MLTSs have yet to be perfected, the model legislation provides that application of ALI requirements to these types of telephones is deferred until two years after the effective date of a FCC ruling addressing implementation of E911 support by such equipment. *Id.* § 11.

Second, the model legislation recognizes that for the majority of MLTSs, it is not reasonable to require each station to have a unique telephone number that identifies a the station's precise location. Unless they subscribe to direct inward dialing ("DID") service (which most do not), business end users do not have a unique, dialable telephone number for each station. Further, requiring MLTS end users to define and describe a discrete ERL for each station would impose an unreasonable and in most circumstances unnecessary burden. Requiring end users to identify individual buildings and floors is administratively a far more manageable task and is more likely to be achievable using the telephone numbers available to end users that do not subscribe to DID service. Where this level of disaggregation is not cost effective, the model legislation offers MLTS operators the option of directing emergency response

through a private answering point or through a switchboard operator with local notification capability. *Id.* § 3.

Third, the model legislation recognizes that, for MLTSs that do not have DID capability, the ELIN that is sent to a PSAP to identify the caller's location cannot necessarily do double duty as a "callback" number. Therefore, the model legislation does not require the provision of a callback number for an emergency caller behind a MLTS. *Id.* § 1 (definition of "Call Back Number," definition of "Emergency Location Identification Number (ELIN)").

Fourth, the model legislation includes a provision releasing manufacturers, providers, and operators from civil liability arising from implementation of the model legislation requirements. *Id.* § 10. This provides an important incentive to ensure that all affected parties cooperate in implementing the requirements.

B. Comparison of Existing State Legislation With Model Legislation

ECA believes there are six states – Florida,[5] Illinois,[6] Louisiana,[7] Maine[8] Minnesota,[9] and Vermont[10] with statutes that broadly address E911 requirements for MLTSs.[11]

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[5] Fla. Stat. § 365.175 (2004).

[6] 50 Ill. Comp. Stat. 750/15.5, 15.6 (2004). *See also* Ill. Adm. Code tit. 83 §§ 726-727 (2004).

[7] La. Rev. Stat. Ann. § 33:9110 (2004).

[8] Me. Rev. Stat. Ann. tit. 25, § 2934 (2004).

[9] Minn. Stat. §§ 403.01-15 (2004).

[10] Vt. Stat. Ann. tit. 30, § 7057 (2004).

[11] An additional four states – Kentucky, Texas, Mississippi, and Washington – have statutes addressing discrete segments of the MLTS market. Ky. Rev. Stat. Ann. §§ 65.752-754 (2004); Tex. Health & Safety Code §§ 771.060, 772.218 (2004); Miss. Code Ann. § 19-5-359 (2004); Wash. Rev. Code §§ 80.555-560 (2004). All four of these statutes address MLTSs used to provide residential service. In addition, the Mississippi and Washington statutes address MLTSs used to provide shared business services, and the

One of these states, Minnesota, adopted a statute that is based in part on the NENA model legislation. Another state, Illinois, amended its E911 statute to conform, in part, to the model legislation's precursor – the Docket 94-102 consensus proposal submitted in this docket in 1997. The Minnesota and Illinois statutes include provisions that address at least in part the aspects of the model legislation enumerated above.[12] For example, the Illinois statute (1) exempts wireless telephones, end-user-operated MLTSs serving 40,000 sq. ft. or less, and key systems, and (2) limits required ERLs to one ERL for each 40,000 sq. ft. 50 Ill. Comp. Stat. 750/15.6(a). The Minnesota statute (1) exempts (a) systems serving less than 40,000 sq. ft. and limited to a single floor, or (b) systems serving less than 7,000 sq. ft. and limited to a single multi-floor building, and (2) limits the liability of MLTS manufacturers, providers, and operators. The other four states adopted statutes on which the NENA model legislation appears to have had little or no influence. These statutes generally lack any of the key provisions that make the NENA model viable. To ECA's knowledge, none of these statutes provides an exemption or deferred implementation date for small locations, key systems, wireless MLTS telephones or IP telephones. None of them specifically authorizes "emergency response locations" that include more than one station. Most of them appear to require

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(Footnote Continued)
Texas statute addresses shared business MLTSs in certain districts. The Washington statute also addresses MLTSs serving public schools. In Colorado, a statute requires MLTS operators to inform end users on the proper method of dialing 9-1-1 from an MLTS telephone, and to warn end users if the MLTS does not provide the caller's location and/or telephone number to the PSAP. Colo. Rev. Stat. § 29-11-106 (2004).

[12] Unfortunately, even the Illinois and Minnesota statutes do not include all the key model legislation provisions enumerated above. Moreover, they fail to incorporate the model legislation's provision on the timing of updates to the ALI data base. The model legislation allows MLTS operators to update ALI data base one business day after changes are made. In the absence of this provision, there is a risk that state statutes could be interpreted to require instant updates to the ALI data base – an unreasonable expectation.

a callback number for each station. Finally, none of them relieves MLTS manufacturers, vendors, and operators from civil liability arising out of implementation of the statute.

III. IN 911 POLICY, THE FCC HAS DIFFERENT ROLES TO PLAY FOR "LEGACY" AND VOIP-BASED MLTSS

The MLTS industry is currently in transition between a base that still consists predominantly of "legacy" circuit-switched systems (*e.g.*, key systems, hybrids, and PBXs) and a future that appears like to be dominated by packet-switched systems offering VOIP capability for some or all of an enterprise's communications needs. Regulating for an industry in transition will probably require the Commission to adopt different regulatory roles and different policies for "legacy" and VOIP-based systems.

A. The Commission Should Adopt The Provisions Of The Model Legislation As A Commission Rule

As discussed above, the record of the states in adopting the NENA model legislation has been disappointing. The model legislation was officially adopted by NENA more than four years ago. In that period, only one state (Minnesota) has used it even as a partial model. The remaining states (other than Illinois, which had previously adopted legislation based in part on the Docket 94-102 consensus position) either have adopted MLTS legislation that lacks all the key provisions of the model or have not adopted any MLTS legislation at all.

The current patchwork of state regulation does not serve the interests of any party, nor does it serve the public interest. Where there is no state legislation, the problems with implementing E911 for MLTSs remain largely unresolved. Where there is overly intrusive state legislation that does not conform to the NENA model legislation, attempts to comply with that legislation impose substantial costs, create

market distortions, and may actually increase the risk of liability for MLTS operators. In light of these burdens, many MLTS operators may simply avoid compliance with overly restrictive legislation – thereby frustrating its purpose.

For all these reasons, the Commission should abandon any attempt to rely solely on the states to effectively address the MLTS problem. The Commission should itself adopt the NENA model legislation – *in its entirety* – and should preempt any inconsistent state laws.

B. There Is No Need To Adopt Specific Requirements For Manufacturers Of Legacy MLTSs

The model legislation appropriately focuses on specific requirements applicable to MLTS operators, on whom ultimate implementation responsibility necessarily falls. There is no need for the Commission to adopt specific location identification requirements for manufacturers of legacy MLTSs. The NENA model legislation appropriately allows MLTS operators a wide choice of methods with which to comply. The marketplace generally ensures that manufacturers offer equipment and software that addresses E911 requirements.

C. The Commission Should Adopt A Rule Requiring LECs To Offer Exchange Services That Enable MLTS Operators To Deliver Location Information In Any Industry-Accepted Protocol

The Commission should, however, amend its rules to ensure that local exchange networks continue to support the E911 requirements of legacy systems. In the circuit-switched telecommunications environment, technical solutions to the ALI problem cannot be successfully deployed unless local exchange carriers offered standardized, appropriately priced data transmission facilities that are compatible with both MLTSs and the PSAP. When the E911 MLTS problem first surfaced, the only feasible data

transmission facility was the CAMA trunk, which many LECs either did not offer to end users at all, could not provide in mass quantities, or priced at rates beyond the budgets of smaller business users.

Later, some LECs began to offer E911 data transmission capability over ISDN facilities. This data transmission solution was a vast improvement over CAMA trunks, but it could not be implemented by pre-ISDN MLTSs. Moreover, the use of the ANSI T1.628-2000 ISDN network interface standard (which, among other things, provides a means for signaling callback and location as two separate information items) is not uniformly utilized by LECs, and many PSAPs are not set up to process two different telephone numbers.

All LECs should have a duty to make available both CAMA trunks and basic and primary rate ISDN lines (conforming to the ANSI T1.628-2000 ISDN network interface standard) upon request by end users. Network facilities suitable for E911 service should be readily identifiable and easy for end customers to order. E911 compliance is difficult enough; it should not be allowed to be frustrated by the unavailability of necessary network facilities or by difficulties in placing orders. There does not appear to be any reason why every LEC cannot provide such data transmission facilities on request. In addition, LECs should be required to ensure that their E911 data transmission facilities conform to current industry E911 standards for CAMA and ISDN technologies.

D. Regarding IP-Enabled MLTSs, The Commission May Need To Adopt A More Active Role

For IP-enabled MLTSs, it is still premature for either states or the Commission to impose E911 regulations. Therefore, in adopting the NENA model legislation as a Commission rule, the Commission should maintain the model's temporary exemption

for IP-enabled MLTSs pending the adoption of technical rules, and should preempt any state requirements pending the adoption of such rules. The Commission should also actively participate in the development of E911 technical requirements for IP-enabled MLTSs, by establishing and actively supervising an advisory committee that focuses specifically on the development of such requirements.

Implementing E911 requirements for IP-enabled MLTSs poses several additional issues beyond those encountered in implementing E911 for legacy MLTSs. First, an IP phone user can move an IP phone without the knowledge of the system administrator. As a result, there is no necessary correlation between the caller's telephone number and the caller's location. Techniques to find an IP caller's location are being developed, as they were previously developed for wireless services, but those techniques are not yet standardized.

Second, there is not yet an established protocol for transmitting E911 location information over IP networks. Given the speed with which technology is changing, establishing such a protocol and ensuring its adoption by PSAPs, service providers and MLTS operators is a major challenge.

Third, PSAPs generally can accept information only from the public (circuit-) switched network. Thus, callers that are using IP phones and have no nearby means of connecting to the public switched network have no means of transmitting their location, even assuming there was an established protocol for doing so.

Although some progress has been reported in developing E911 solutions for IP-enabled telecommunications, especially in the residential context,[13] standardized means

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[13] See, e.g., Voice On the Net (VON) Coalition/NENA 9-1-1 Working Group, Answering the Call for 9-1-1 Emergency Services in an Internet World: A 9-1-1 VoIP Primer and Progress Report on the VON/NENA Agreement (January 2005). As of February 28, 2005, this paper was available at:

for addressing the problems described above do not yet exist. Furthermore, as explained in Section I above, in the MLTS context far more of the E911 implementation responsibility falls on end users. The number of decisionmakers involved in deployment of E911 solutions for IP-enabled MLTSs is thus exponentially greater than with IP-enabled residential service, substantially increasing the complexity involved in developing, coordinating, and deploying innovative E911 solutions.[14] Individual manufacturers or service providers alone cannot establish the conditions for IP-enabled E911. A single set of nationwide standards and protocols, adhered to by all PSAPs, manufacturers, and service providers, will be critical for many aspects of IP-enabled E911; otherwise, chaotic development of inconsistent protocols by multiple manufacturers and service providers will impose major costs on the industry and its customers.

As the first step in addressing this problem, the Commission should establish and actively oversee an advisory committee (or subcommittee) that focuses specifically on implementation of ALI for IP-enabled MLTSs as its number one priority. Active Commission oversight is necessary to ensure movement towards agreement, given the number of industry players involved and the rapid development of technology in this area. Currently, the overall E911/MLTS issue is on the agenda of the Network Reliability and Infrastructure Council ("NRIC"). That group, however, has a number of other priorities. Further the NRIC working group addressing E911 matters has a membership that consists largely of representatives from the wireless industry. The

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(Footnote Continued)
http://www.nena9-1-1.org/VoIP_IP/VONCoalition9-1-1whitepaper0105.pdf.

[14] In addition, because end users generally are not themselves in the telecommunications business, the process of accumulating the necessary experience and expertise to address E911 issues effectively and efficiently tends to take longer.

industry group that addresses MLTS issues must be broadly representative of the MLTS industry, including MLTS manufacturers, vendors, and operators.

Therefore, the Commission should establish an advisory committee with a mission to focus specifically on the development of protocols and models for implementing E911 for IP-enabled MLTSs. If the Commission finds it appropriate to have this issue addressed by NRIC, rather than a new advisory group, then a working group should be constituted within NRIC that is broadly representative of the MLTS industry, including MLTS manufacturers, vendors, and operators. ECA would welcome the opportunity to participate in such a committee or working group.

The Commission must, however, ensure that local exchange facilities – whether provided by traditional LECs or cable television facilities, or otherwise – effectively support VOIP-based communications regardless of the identity of the provider of equipment and services.

Once the necessary protocols have been agreed to, the Commission can adopt rules requiring MLTS operators and IP service providers (and if necessary, manufacturers) to conform to such protocols. In the interim, the Commission should preempt any state law that attempts to impose E911 requirements on IP-enabled MLTSs.

CONCLUSION

The Commission should adopt an order consistent with the foregoing comments.

Respectfully submitted,

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