

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

In the Matter of

Public Safety and Homeland Security Bureau  
Seeks Comment on Multi-Line Telephone  
Systems Pursuant to the Next Generation 911  
Advancement Act of 2012

CC Docket No. 94-102,  
WC Docket No. 05-196,  
PS Docket No. 07-114,  
PS Docket No. 10-255

**COMMENTS OF AT&T INC.**

William A. Brown  
Gary L. Phillips  
Peggy Garber

AT&T Services, Inc.  
1120 20<sup>th</sup> Street, N.W.  
Suite 1000  
Washington, D.C. 20036  
202.457.3007 - Telephone  
202.457.3073 - Facsimile

July 5, 2012

## TABLE OF CONTENTS

	<u>Page</u>
<u>TABLE OF CONTENTS</u> .....	i
<u>I. INTRODUCTION AND SUMMARY</u> .....	ii
<u>II. DISCUSSION</u> .....	1
A. Feasibility of MLTS Manufacturers to Provide Precise 911 Location Information .....	1
1. The possible costs of meeting new location-specificity requirements .....	1
a. MLTS Manager .....	2
b. Service Providers .....	3
c. E911 System Service Providers .....	5
d. MLTS Manufacturers .....	6
2. IP-Technology .....	7
B. NENA Model Legislation .....	8
1. Part 68 .....	8
2. MLTS Standards .....	9
<u>III. CONCLUSION</u> .....	10

## **I. INTRODUCTION AND SUMMARY**

Through its Public Safety and Homeland Security Bureau, the Commission seeks comments on two general topics. First, the Commission is soliciting comments on “the feasibility of MLTS [multi-line telephone systems] manufacturers including within all such systems . . . one or more mechanisms to provide a sufficiently precise indication of a 9-1-1 caller’s location, while avoiding the imposition of undue burdens on MLTS manufacturers, providers, and operators.”<sup>1</sup> Second, the Commission is taking comments on the National Emergency Number Association’s “Technical Requirements Document On Model Legislation E9-1-1 for Multi-Line Telephone Systems” (NENA Model Legislation).<sup>2</sup> AT&T Inc. (AT&T) offers these comments in response to the Commission’s request.

With regard to MLTS, subsidiaries of AT&T wear many hats. Primarily, AT&T subsidiaries are network providers of both traditional telecommunications and Voice over Internet Protocol (VoIP) services to businesses that use MLTS.<sup>3</sup> But AT&T subsidiaries also sell MLTS customer premises equipment (CPE) to their business customers and, as businesses in their own right, they use MLTS for their own administrative business needs.<sup>4</sup> Finally, within their incumbent local exchange carrier (ILEC) regions, AT&T subsidiaries are wireline E911 System Service Providers (SSPs) to public safety answering points (PSAPs).<sup>5</sup> Consequently, any

---

<sup>1</sup> Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96 (2012), Title VI, Subtitle E (Next Generation 911 Advancement Act). *See also* Public Notice, DA 12-798 (May 21, 2012) (Public Notice).

<sup>2</sup> Public Notice. With respect to the NENA Model Legislation both the Next Generation 911 Advancement Act and the Public Notice refer to NENA 06-750, Version 2. As of the date of these comments, NENA has circulated Version 3 of the document. For the purpose of these comments, AT&T will refer to Version 3 of the NENA Model Legislation.

<sup>3</sup> These MLTS could involve either CPE-based (*e.g.*, Private Branch Exchange or PBX) or network-based (*e.g.*, Centrex) services.

<sup>4</sup> AT&T does not manufacture any CPE.

<sup>5</sup> Typically, the wireline E911 SSPs is responsible for the E911 Routing Database and Selective Router functionality provided to the PSAP. Presently, AT&T subsidiaries provide the 911 selective router services that underpin 911 services. Through third-party vendors, AT&T also provides ESInet services as part of its IP operations.

solutions proposed to provide a “sufficiently precise indication of a [MLTS] 9-1-1 caller’s location” would have direct implications for AT&T and its subsidiaries.

#### **A. Feasibility of MLTS Manufacturers to Provide Precise 911 Location Information**

To the extent MLTS standards are developed, AT&T contends they should be forward-looking solutions; that is, they should be focused on the future of voice communications (IP-based systems). It does not make sense to develop standards for traditional circuit-switched or TDM-based communications, which are fast being replaced by IP-based systems. If policy makers are seeking to avoid the imposition of *unduly burdensome obligations* on manufacturers, providers, and operators of MLTS, then focusing on the future of communications—as opposed to requiring a major re-tooling of existing, moribund technologies—would make the most sense. Although traditional circuit-switched communications will continue to be provisioned for the near future, the universe of such MLTS offerings is already shrinking rapidly and, therefore, quickly diminishing and eliminating any risk to public safety that older systems may theoretically pose.

As business customers will prefer the benefits of IP-based communications systems, which include cost savings, additional features, and flexibility, the market itself will take care of the limitations that circuit-switched systems have providing more specific 9-1-1 call location information when IP-based systems quickly replace them. Policy makers should recognize the power of the market to bring about this change and not legislate a waste of resources on re-engineering systems and equipment that are scheduled to be replaced.

#### **B. NENA Model Legislation**

Because AT&T provides and uses MLTS services and equipment nationwide, it also prefers solutions that are nationwide. In fact, few if any network and equipment providers operate only in one state. The Balkanization of E911 location information laws is unnecessarily expensive and difficult to implement. For this reason, AT&T supports developing state-law model legislation, like the NENA Model Legislation, and the use of industry-developed national standards for manufacturers and providers. Model legislation, if universally adopted, would ease

the implementation burden of new MLTS standards for more specificity in MLTS 9-1-1 caller location. Similarly, national industry-developed standards, in collaboration with regulators and other interested parties, would facilitate replication of improved MLTS 9-1-1 caller location-specificity information. The Commission's participation in standards setting would be helpful and welcome. At present, however, AT&T recommends that the Commission await the results of that collaborative process before contemplating formal rulemaking. The Commission may discover that the combination of the NENA Model Legislation and other state laws, as well as nation-wide industry standards, obviate the need for federal regulation. Taking a wait-and-see approach will not preclude future Commission action if it is deemed necessary.

## **II. DISCUSSION**

### **A. Feasibility of MLTS Manufacturers to Provide Precise 911 Location Information**

#### **1. The possible costs of meeting new location-specificity requirements**

As the Commission is fully aware, improving the level of location specificity in MLTS for E911 purposes would involve a complicated weave of participants—*e.g.*, equipment manufacturers, software developers, MLTS operators, MLTS managers, voice service providers (*i.e.*, telecommunications carriers and VoIP providers), network providers (*i.e.*, traditional circuit-switched and IP), E911 system service providers (SSPs), and PSAPs—as well as various equipment and facilities—*e.g.*, CPE (phones, PBXs), switches, trunking, selective routers, and databases. And the degree to which greater location specificity is feasible without imposing undue burdens will depend largely on a number of factors, including, but not necessarily limited to:

- whether traditional circuit-switched telecommunications systems must be re-engineered to meet new standards,
- whether the MLTS customer has a network-based (*e.g.*, Centrex) or CPE-based service (*e.g.*, PBX),
- whether the MLTS customer's system is largely “fixed” or whether it is “nomadic” or “mobile” or even “virtual,”<sup>6</sup>
- the level of location specificity required,
- the timeframe for implementation of location-specificity new requirements and upgrades.

Due to this complexity, the feasibility of providing more precise 911 location information doesn't depend on manufacturers alone. In fact, the heaviest burden may fall on the shoulders of the MLTS Managers.

---

<sup>6</sup> See footnote 13 *infra*.

**a. MLTS Managers**

Under the proposed NENA Model Legislation, the MLTS Manager is the entity that purchases or leases the MLTS system or purchases MLTS services from a third party and is “authorized to implement an MLTS . . . as the means by which to make 9-1-1 calls.”<sup>7</sup> These entities include for-profit businesses, non-profit organizations, and governmental agencies. Because the MLTS Manager will and should be responsible for critical aspects of the system, it will be among the chief guarantors of the accuracy and utility of the “precise indication of a 9-1-1 caller’s location.”<sup>8</sup>

In order to make greater specificity possible, MLTS Managers will need to be far more involved in creating and maintaining 911 location information than ever before. Such involvement means added costs associated with running the MLTS. At an entry level, these initial costs will be incurred in determining whether the MLTS Manager falls within the ambit of any state laws requiring more location detail and upgrading or replacing hardware and/or software, if necessary.<sup>9</sup>

In addition to these upfront costs, however, the MLTS Manager will incur ongoing costs associated with maintaining a dynamic MLTS system subject to expansions, contractions, and

---

<sup>7</sup> NENA Model Legislation, Section 1, Definitions, p. 14. According to the latest version of this legislation, an MLTS Manager may also be an MLTS Operator. The MLTS Operator is “[t]he entity responsible for ensuring that a 9-1-1 call placed from an MLTS is transmitted and received in accordance with [the] model legislation regardless of the MLTS technology used to generate the call.”

<sup>8</sup> Next Generation 911 Advancement Act, § 6504(b)(1).

<sup>9</sup> Given the complexity of arrangements involving MLTS and how MLTS systems can now serve multiple locations in a campus or networked environment, the MLTS Manager or MLTS business customer would be the only party with sufficient knowledge of the businesses layout and operations to determine where emergency responders should respond. In many businesses, the first stop for an emergency responder is the main security location (*e.g.*, gate or desk). From there, emergency responders are often escorted to the precise location where they are needed. What’s more, states that have enacted MLTS location-specificity legislation, as well as the NENA Model Legislation, typically use size and/or configuration exceptions to exclude smaller or simpler business operations from the obligations imposed by them (*e.g.*, 7,000 sq. ft. exception for single-level, contiguous properties found in Section 3, Business MTLs). MLTS Managers would need to determine whether any such exception is applicable to their operations. They would also need to be actively involved in defining the Emergency Response Location (ERL). *See* more discussion of this responsibility below.

internal reconfigurations, as well as the inherent concerns raised by a highly flexible IP system (see more below). For example, additional location specificity may require implementing new processes for reconfiguring user locations at the desktop-level. Due to the inherent problems of managing a manual service order provisioning process, including concerns about reliability, MLTS Managers may prefer an automated process, which will involve its own set of costs. Consequently, MLTS Managers will in all likelihood analyze and then update all of their current service order provisioning processes to ensure they can incorporate automated methods to effectuate internal change orders—adds, deletes, and moves (often referred to as MAC-Ds).

MLTS Managers will also need to provide inventory control of MLTS sites to guarantee reliability of the *initial and ongoing* mapping process for ERLs. Such controls must include a way to check the quality of the system’s procedures to ensure that site information remains current as internal change orders are worked in the regular course of business. Another avenue available to manage the MAC-D process could include contracting with providers of MLTS location data related services (*e.g.*, Red Sky, 911 Enable, Conveyant Systems, *etc.*). MLTS Managers may also choose to acquire certain vendor-provided PBX-based feature functionalities, such as those offered under Cisco’s Emergency Responder, Avaya’s Aura Communication Manager, Avaya’s Aura Session Manager, *etc.* Naturally, whether those functionalities are available would depend on the MLTS Managers’ PBX equipment.

Whatever means MLTS Managers use to track, update and otherwise manage caller location information within their operations will have associated upfront and ongoing costs. Yet providing a safe working environment, which would include useful access to E911 services, is the duty of these business operations.

***b. Service Providers***

In region, AT&T incumbent LEC subsidiaries (AT&T ILECs) offer network-based MLTS (*e.g.*, Centrex). Both in-region and out-of-region, AT&T subsidiaries also offer new MLTS business VoIP offerings. Under the NENA Model Legislation, these AT&T subsidiaries would be deemed MLTS Operators “responsible for ensuring that a 9-1-1 call placed from an

MLTS is transmitted and received . . . regardless of the technology used to generate the call.”<sup>10</sup>

As an MLTS Operator, AT&T ILECs, CLECs, and business VoIP service providers will certainly incur costs to meet any new location-specificity obligations.

In region, AT&T subsidiaries will in all likelihood need to make software changes in legacy service order provisioning systems and/or associated E911 location databases to support improved caller location information. At present, these systems do not allow for more detailed caller locations, such as suites or floors or zones. AT&T may also choose to develop services that will facilitate the customer’s ability to support additional location data. Either way, considerable training will be required for all AT&T personnel in the chain responsible for selling and provisioning these network-based MLTS in order to make more detailed caller location information a reality.

Out of region, AT&T subsidiaries may need to analyze all of their current service order provisioning processes to ensure the processes can incorporate mechanisms to automatically place and work external orders intended to provide newly augmented location data. Costs associated with provisioning processes will also include costs associated with working with third parties, such as other local exchange carriers, VoIP providers, and the applicable E911 SSPs. Each link in the E911 chain that must be analyzed and upgraded and all personnel that must be retrained will generate upfront and ongoing costs for AT&T subsidiaries.

As a provider of VoIP services, AT&T is concerned that the current industry best practices for local number portability (LNP) may not be sufficient when a VoIP Position Center (VPC) service is used for 911 call routing and for providing station-specific detail.<sup>11</sup> Current LNP best practices were developed and implemented in support of traditional circuit-switched 911 call routing and ALI display. Existing ALI databases and their respective provisioning

---

<sup>10</sup> NENA Model Legislation, Section 1, Definitions, p. 14.

<sup>11</sup> A VoIP Position Center is technology similar to Mobile Position Center that locates a 911 caller by using the temporary assignment of an Emergency Services Routing Key (ESRK) number.

processes provide the PSAP with the service provider NENA ID number, identify if a third-party vendor has been used for providing station specific detail, and allow for telephone numbers to be ported with no impact to the existing ALI record. If station-specific 911 call detail is ultimately required, AT&T anticipates that there would be a significant increase in the number of subscriber records requiring modification and AT&T is concerned that current industry best practices may not be in place for VPC services. In addition to the costs surrounding this increase in record modification and to address these concerns, industry best practices need to be developed, documented, and implemented to support the provisioning process (*i.e.*, unlock, migrate, insert, delete) and service-provider record identification (*i.e.*, service provider and/or data provider) for VPC services.

Absent more detailed information on requirements and absent undergoing the actual analysis, AT&T is unable to provide even an order of magnitude for these potential costs. Suffice it to say that there will be real costs that, after initial system upgrades, will include ongoing training of affected personnel and maintenance of related systems and databases. If mandates, however, requiring more location specificity for MLTS result in additional costs to service providers, legislators and/or regulators should provide a cost-recovery mechanism as part of their statute or ruling.

***c. E911 System Service Provider (SSPs)***

As discussed above, AT&T favors applying new MLTS location information requirements on a going-forward basis to new IP-based services and excluding circuit-switched services. One reason is that the costs associated with upgrading these circuit-switched systems are not justified in light of fact their useful life expectancy is extremely short. Briefly the expenditure of these costs is not offset by any real benefits.

This cost-benefits analysis is obvious with respect to E911 SSPs equipment. As legacy E911 SSPs, AT&T ILECs would be required to upgrade ALI databases and related equipment to meet any new location-specificity requirements. Although AT&T cannot presently cite a dollar figure associated with these upgrades, AT&T believes that such upgrades will be costly, and will

almost certainly be short-lived. With the industry migrating to NG911 systems, it makes no sense to expend time and capital upgrading legacy databases and related systems only to abandon them in favor of the new and more efficient IP systems that will replace them. Clearly it would be unduly burdensome to all concerned to waste resources re-engineering legacy systems whose productive life is coming to an end.

*d. MLTS Manufacturers*

It would seem self-evident that the adoption of laws requiring more detailed MLTS-caller location information would be a business opportunity for most, if not all, MLTS manufacturers, of which AT&T and its subsidiaries are not included. Indeed, AT&T believes that IP-based MLTS equipment may already be capable of including more precise indications of a 911 caller's location. Consequently, insofar as any new requirements might apply to IP-based solutions, the burden on manufacturers is not expected to be great.

The same cannot be said for equipment associated with circuit-switched systems, however. Here, there would be little business opportunity to create and sell such equipment, much less desire to provide post-sale support. The future is in IP. That being the case, the burden is significantly greater on all concerned if the plan for more detailed MLTS-caller location information were to apply to legacy systems.

There would be benefits to IP-based MLTS customers in having these systems provide more detailed 911 caller information. Correspondingly, there would be additional costs associated with purchasing, installing, and training for new MLTS systems. Under the NENA Model Legislation, the effective date of compliance would be six months after enactment "where MLTS support service is available." Then 12 months after the effective date, new MLTS must be compliant. Owners of existing systems are required to be compliant within five years of the effective date. Manufacturers of affected equipment will have to opine on the feasibility of this proposal. Whether five years is appropriate for MLTS customers with existing systems is another question. The NENA Model legislation five-year proposal is a consensus position and may be reasonable under most circumstances. Nevertheless, the product life of some equipment

may easily exceed five years, meaning that, were the proposed five-year deadline to be imposed on all owners of existing systems, certain owners would not only have costs associated with buying new or upgraded equipment, but also potential costs associated with not fully recovering the value of their prior capital investment. The Commission might consider whether the five-year proposal is sufficient time for owners of existing systems to recoup their capital investment.

## 2. IP-Technology

The introduction of IP-based MLTS has been a double-edged sword. On the one hand, IP-based MLTS are incredibly flexible, allowing customers to easily and quickly implement MAC-D changes as their business needs expand and contract and otherwise react to market pressures.<sup>12</sup> Being newer, such systems also are more readily adaptable to transmitting any new and more detailed location information. On the other hand, the flexibility and adaptability of IP-based MLTS allow more creative uses of CPE allowing business systems users to be *fixed* or *nomadic* within the business's facilities, as well as being *mobile* on or off campus or having a *virtual* presence.<sup>13</sup> This location flexibility presents real challenges to providing accurate and specific location information when the user dials 9-1-1.

---

<sup>12</sup> The ability of business users of IP-based systems to change locations—say, to move from one assigned cubicle to another or to work from home temporarily—can all be handled without formal in-office administrative intervention.

<sup>13</sup> As understood in these comments, *fixed* means that the user's location is essentially static and within the business facilities of the MLTS customer; *nomadic* means that, within those facilities, a user can basically plug and play at any available on-campus port; *mobile* means that the CPE is used similarly to a CMRS mobile phone by using a broadband Internet connection, usually a third-party WiFi connection, to make calls back to and through an IP-based PBX located at the business's facilities; and *virtual* means that the user may work from a regular off-campus location, like his or her residence or distant office, yet have the same NPA-NXX (*i.e.*, area code and central office switch prefixes) of the business's main facilities where the communication equipment is located. These terms are not mutually exclusive, however. For example, a *mobile* device can be used to provide a *virtual* office. A *mobile* device can also be *nomadic* by using the business's own on-campus WiFi to roam from floor to floor or from cubicle to cubicle. And a *virtual* location doesn't have to be *off campus* per se; rather, a business could combine several facilities (*i.e.*, distributed workforce) and give the impression that all users are making calls from the same place because one IP-based PBX serves all of them using the same NPA-NXX.

The ability to change locations easily and freely, whether on or off campus, creates challenges with keeping ALI databases current. Putting aside the issue of truly mobile devices that employ third-party broadband Internet connections, solutions are already available to business MLTS customers to address these challenges. Typically they involve the use of upgraded equipment and/or hosted solutions—both of which can be a significant cost of doing business. These solutions are capable of handling traditional 911 calls transmitted over Centralized Automatic Message Accounting (CAMA) trunks or Integrated Services Digital Network/Primary Rate Interface (ISDN/PRI) circuits, as well as providing location-based routing for multi-site IP-based systems and designating call locations by work groups or building floors or desk tops. What’s more, vendors offer ways of easily and quickly updating server databases to detect and register IP phone relocations, even temporary ones.

As for mobile use, vendors have developed solutions that employ a variety of mechanisms. Off-campus calls using third-party WiFi Internet connections are the most challenging and often require unique third-party interventions, like using location information servers to properly route the call to the correct PSAP. The ability to pass along detailed location information automatically for these mobile devices and IP-based systems is presently unavailable, and regulators, providers, and equipment manufacturers need to work together to develop comprehensive and effective solutions and nationwide standards.

## **B. NENA Model Legislation**

### **1. Part 68**

The NENA Model Legislation proposes and the Commission seeks comment on whether the Commission should amend its Part 68 rules to include E911 requirements for MLTS.<sup>14</sup> Apart from AT&T’s comments above on the cost-benefit analysis of re-engineering legacy circuit-switched systems, AT&T acknowledges that, if it is to comply with any future requirements to

---

<sup>14</sup> NENA Model Legislation, pp 11-12 (“The FCC should also take action to incorporate into Part 68 requirements for MLTS that will facilitate the implementation of Enhanced 9-1-1 on MLTS i.e. PBX, Key, Hybrid, VoIP and Centrex systems.”). *See also* Public Notice, p. 4.

provide more location specificity for MLTS 9-1-1 calls, AT&T will need to rely on equipment manufacturers to supply the necessary hardware and software—as well as ongoing equipment support—to make compliance possible.

Having said that, however, AT&T notes that the Commission has previously stated that the Part 68 rules were devised “to ensure that terminal equipment and wiring may be connected to the [public switched telephone] network without causing harm” and that these rules “should be no greater than that necessary to ensure network protection.”<sup>15</sup> Consequently, it is hard to see how regulations pertaining to more location specificity for MLTS E911 calls fall into this part of the Commission’s rules. Plus, AT&T is presently unaware of any authority under Title II of the Act that the Commission might have in regard to regulating manufacturers. If the Commission were to move forward with any plan to amend its Part 68 rules for E911 requirements, the Commission should articulate its authority under Title II of the Act to do so.

## **2. MLTS Standards**

In the Public Notice, the Commission asks a series of questions concerning the development and implementation of standards. From the position of a company with nationwide operations, both as an MLTS Operator and MLTS Manager as those terms are used in the NENA Model Legislation, AT&T prefers a nationwide approach to standards development and implementation. National standards are the most cost-effective approach to meeting this public safety concern.

National standards are best developed in a collaborative process involving all the critical entities—manufacturers, service providers, regulators, and public safety personnel. Different forums exist in which to develop these standards, such as ATIS Emergency Services Interconnection Forum. As a regulatory body, the Commission’s participation would be welcome and helpful. Indeed, by participating, the Commission would most directly be kept

---

<sup>15</sup> *Review of Section 68.104 and 68.213 of the Commission’s Rules Concerning Connection of Simple Inside Wiring to the Telephone Network; etc., Order on Reconsideration, Second Report and Order and Second Further Notice of Proposed Rulemaking*, 12 FCC Rcd 11897 ¶ 4 (1997).

apprised of the conduct and progress of these standards-setting bodies. AT&T recommends that formal regulations—if any are needed—await the results of this process. As discussed above, the parties are adequately motivated to achieve good results and to make the standards easy and cost-effective.

AT&T does not believe that deadlines or timetables are needed at this time. The Commission should begin with a wait-and-see attitude, allowing the marketplace and standards-making process to unfold, and only take steps to impose a deadline or timetable if progress is not being made. Likewise, the Commission should defer any regulatory action until standards are developed through this collaborative process. The Commission may discover that adoption of state laws using uniform model legislation is sufficient and that further regulations are unnecessary. Or the Commission may discover that a light regulatory touch will be more than adequate to address any gaps in the law to bring about complete compliance with newly developed state laws requiring more specific MLTS 9-1-1 caller location information.

### **III. CONCLUSION**

AT&T respectfully requests that the Commission consider these comments in its deliberations on this matter.

AT&T Inc.

By: /s/ William A. Brown

William A. Brown  
Gary L. Phillips  
Peggy Garber

AT&T Services, Inc.  
1120 20<sup>th</sup> Street, N.W.  
Suite 1000  
Washington, D.C. 20036  
202.457.3007 - Telephone  
202.457.3073 - Facsimile  
[William.Aubrey.Brown@att.com](mailto:William.Aubrey.Brown@att.com)

July 5, 2012