

APCO
International
exists to
continuously
enhance public
safety
communications
through
leadership,
professionalism
and service.



The Association of Public-Safety Communications Officials (APCO) International

Accessing 9-1-1 from Multi-Line Telephone Systems (MLTS) and Private Branch Exchanges (PBX)

The country's 9-1-1 centers and public safety responders rely on accurate automatic location information to be provided when callers cannot relay their location information. Traditional home (wireline) phones produce the address of a citizen to the 9-1-1 centers via a database listing the address of the caller (phone number and address are accurately maintained and linked). Multi-line telephone systems (MLTS), including private branch exchanges (PBX), usually provide 9-1-1 centers with only the phone number and location of the billing address. Technical solutions, including databases linking internal phone numbers (extensions) to more precise locations such as a suite/apartment number and/or floor level are available, but are not being used on a widespread basis. Without precise location information, emergency responders can be delayed while trying to find the location of the caller in need.

Many corporations (large and small), hotels, schools, universities and government agencies employ MLTS. These systems are characterized by a central switchboard connected to a number of either on-premise or off-premise extensions. Connection to an out-dial trunk on systems of this type typically require the dialing of an extra digit (such as nine) to reach an outside phone connection. Increasingly, residential complexes are turning to MLTS for their residents. It has been estimated that perhaps as many as half of the population is living, working or studying behind an MLTS or PBX each day.

Many facility owners that currently use MLTS or PBX systems are unaware of the problem. Those that are aware may believe they have little incentive to correct the problem. Therefore, many communities are relying on employee or consumer pressure and legislated mandates from some states to ensure this problem is corrected. Very few communities, and fewer states, have required MLTS or PBX owner/operators to install the available technological fix, keep the necessary databases up-to-date or even require awareness education to the many users of these imperfect systems.

APCO INTERNATIONAL
OFFICE OF
GOVERNMENT AFFAIRS
1725 DeSales Street NW
Suite 808
Washington, D.C. 20036
Phone: 202-833-2700

APCO INTERNATIONAL
HEADQUARTERS
351 North Williamson Blvd
Daytona Beach, Florida 32114
Phone 386.322.2500
Fax: 386.322.2501

The Federal Communications Commission (FCC) issued a statement in December 2003 advising that each state should address this through its respective regulatory processes. The FCC also indicated that, if individual states fail to take appropriate action, the FCC might have to step in and provide federal guidance. In December 2004, the FCC issued a 45-day public notice seeking comments on the progress states have made concerning this matter.

Currently, 9-1-1 callers using wireless devices may only provide a general location with Phase I enhanced 9-1-1 (E9-1-1) or a more accurate location with Phase II E9-1-1¹. The next generation of call-placement methodology, Voice over Internet Protocol (VoIP), will bring calls from satellite services, which could replace the current public switched telephone networks (PSTN) altogether, may or may not provide caller location information, depending on the origin of the call. The complexity of providing 9-1-1 services for the ever-increasing populace and the need for accurate 9-1-1 information have never been more important and are becoming increasingly difficult to obtain.

In the past, emergencies were considered local in nature, but that is changing. Incidents of greater significance across jurisdictional boundaries are becoming more prevalent. Significant measures have been taken to ensure adequate location information is provided to public safety answering points (PSAPs) with the deployment of wireless 9-1-1. However, little has been done for those 9-1-1 callers in commercial, educational, medical or other facilities that use MLTS. Thus far, only 13 states (listed below) have addressed this issue through either legislation or policy².

It is apparent that it is necessary for the FCC to take a stronger role either by regulation or other mandates. As wireline customers begin to convert to wireless and VoIP solutions, it is imperative that MLTS action to provide automatic location information to 9-1-1 centers be instituted now. Delaying immediate action may result in this issue becoming lost in the transitions that are already in progress and those which are on the horizon. The technology used in current wireless 9-1-1 has degraded the automatic location information (ALI) because the latitudes and longitudes that these systems send to 9-1-1 centers frequently are not as precise as static residential addresses. VoIP could further degrade the location accuracy.

In the meantime, location technology that solves the problem of providing more precise location information on 9-1-1 calls to PSAPs already exists for MLTS and is being used by some MLTS operators in the United States and elsewhere. Where the solutions have not been mandated, few organizations have been proactive in implementing them. ALI from MLTS can and should be universally provided in those environments, such as large, multi-floor or multi-building organizations, where public safety responders might be delayed by not knowing the precise location (building, suite, floor, etc.) of a 9-1-1 caller.

Some companies are stepping up to offer MLTS location-technology solutions that are increasingly cost-effective and efficient to maintain. For instance, one vendor's solution is designed to reside and operate within the framework of the existing telephone system. This upgrade prevents the labor-intensive task of building and maintaining a separate system.

In addition, others recognize and have taken action such as that suggested in a study on risk management, which found that for every dollar a company spends on safety they can expect a threefold savings. E9-1-1 systems help address a problem quickly so it does not turn tragic, potentially destroying people and property. It has been argued that the cost of implementing the technology as an add-on to an MLTS – generally less than five to 10 percent of the system's total expense – is of little consequence when litigation enters the fray. The statistics cited by the American Heart Association (AHA) state that the chances of survival for a heart-attack patient are reduced by seven to 10 percent for every minute that elapses between the attack and defibrillation and are also relevant to this discussion of the risk to life. The lack of an adequate E9-1-1 system is a potentially catastrophic financial and human risk. Past court decisions have held institutions and managers personally liable for safety and negligence. Knowing that MLTS without E9-1-1 capabilities are being used and could be corrected is risky.

MLTS is something that can be acted upon now and fixed with current technology. It is important to have this in place before the next generation of technology is deployed. It is absolutely essential that national and state policy makers exert stronger pressure to ensure all jurisdictions move forward with some form of effective regulation regarding the provision of the location of 9-1-1 callers from within an MLTS. As technology advances, 9-1-1 ALI is moving backwards. It is apparent with wireless E9-1-1 and is becoming prevalent with the use of VoIP. The measures needed for MLTS should be deployed now so that they can be carried forward with the new technology. Otherwise, it could become more difficult and costly, and become lost with the technology that will be unleashed in the not-too-distant future. The unfortunate result could be loss of life. As with wireless E9-1-1, it will take a government mandate for businesses to fully implement location-capable MLTS. A major tragedy should not be the impetus for change.

It is the position of APCO International that:

- 9-1-1 services should be universal.
- 9-1-1 services should be transparent to the caller whether they are calling from a home or a business.
- The needs of public safety transcend the issues with employing the technological fixes for MLTS/PBX.
- The business community and public safety should work together to address the needs of public safety as they relate to MLTS/PBX.

APCO INTERNATIONAL
OFFICE OF
GOVERNMENT AFFAIRS
1725 DeSales Street NW
Suite 808
Washington, D.C. 20036
Phone: 202-833-2700

APCO INTERNATIONAL
HEADQUARTERS
351 North Williamson Blvd
Daytona Beach, Florida 32114
Phone 386.322.2500
Fax: 386.322.2501

- Location information is one of the most critical components of information that can assist in appropriate response to a request for service.
- By effectively addressing the issues with MLTS/PBX, lives and property can be better protected and public expectations regarding 9-1-1 responses can be met.
- It is incumbent upon the public safety community to heighten the awareness of the issues with MLTS/PBX and work toward effective resolution to the problem.

The Association of Public-Safety Communications Officials (APCO) International has established a committee to assist its members with guidance and promote policy development on this issue. The committee is comprised of APCO International members from across the United States and Canada. The committee members represent many different entities including PSAPs, government and telephone companies. The committee can advise entities preparing to enact legislation or act as a resource for those seeking further information.

**APCO INTERNATIONAL
OFFICE OF
GOVERNMENT AFFAIRS**
1725 DeSales Street NW
Suite 808
Washington, D.C. 20036
Phone: 202-833-2700

**APCO INTERNATIONAL
HEADQUARTERS**
351 North Williamson Blvd
Daytona Beach, Florida 32114
Phone 386.322.2500
Fax: 386.322.2501

End Notes/Examples

1. Phase I refers to the FCC requirement that wireless telephone-provider companies must provide the callback number and cellular tower-site locations to 9-1-1 centers for wireless callers dialing 9-1-1. Phase II requires both callback number and the approximate location of the 9-1-1 caller.
2. The chart below outlines the current state E9-1-1 legislation (regarding MLTS/ALI).

Current State E-911 Legislation (regarding MLTS/ALI)

Arkansas

Broad Interpretation; May Require Compliance by Statute
AR Code §12-10-317

Colorado

HB 1084 (2001) - Notification Only
Will Amend §29-11-100.5

Connecticut

Broad Interpretation; May Require Compliance by Statute
CT Gen. Statutes § 28-25b

Florida

Mandatory Compliance by Statute
365.175 F.S.

Illinois

Mandatory Compliance by Statute and Regulation
50 ILCS 750/15.5-15.6 83 IAC 726-727

Kentucky

Statute - Residential Only
KRS §65.752-754

Louisiana

ACT - Compliance for PBX Systems
SENATE BILL NO. 878 R.S. 33:9110

APCO INTERNATIONAL
OFFICE OF
GOVERNMENT AFFAIRS
1725 DeSales Street NW
Suite 808
Washington, D.C. 20036
Phone: 202-833-2700

APCO INTERNATIONAL
HEADQUARTERS
351 North Williamson Blvd
Daytona Beach, Florida 32114
Phone 386.322.2500
Fax: 386.322.2501

Maine

Mandatory Compliance by Statute
House Bill 1056 (LD 1444)

Minnesota

Business and Residential MLTS
CHAPTER 282-S.F.No. 653

Mississippi

Service Suppliers and Shared Tenant Services
§19-5-359

Texas

Tarrant County - Business, Multi-tenant Services
House Bill 802, amends Section 772.218 of the Health & Safety code

Vermont

All Businesses
30 VSA §07057

Washington

Business and Residential MLTS
RCW 80.36.555-560

For More Information Contact:

Yucel H. Ors

Director of Legislative Affairs
202.833.1997
orsy@apcointl.org

**APCO INTERNATIONAL
OFFICE OF
GOVERNMENT AFFAIRS**
1725 DeSales Street NW
Suite 808
Washington, D.C. 20036
Phone: 202-833-2700

**APCO INTERNATIONAL
HEADQUARTERS**
351 North Williamson Blvd
Daytona Beach, Florida 32114
Phone 386.322.2500
Fax: 386.322.2501