

Who Dialed 911?

A look at the issues surrounding Enhanced 911

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Executive Summary

Providing a safe and secure environment for employees and visitors at your facility is one of your primary obligations and responsibilities. How will emergency services locate a 911 or 9911 victim caller? This is an issue often overlooked.

In a typical PBX (Private Branch eXchange) environment, the local PSAP (Public Safety Answering Point) identifies a 911 call by the trunk telephone number and the associated main billing address. This information may not be accurate enough to efficiently locate a victim caller (in a campus or a multiple floor environment) who cannot speak or properly identify his or her own location.

Who Dialed 911?

Legislation is in place In Colorado, Illinois, Kentucky, Mississippi, Texas, Vermont, and Washington, that requires various degrees of compliance to E9-1-1¹. Enhanced 9-1-1 requires accurate location information along with the telephone number for campus and corporate environments. For example Washington State code **RCW 80.36.560** mandates that all businesses “exceeding twenty-five thousand square feet, or businesses on more than one floor of a building, or businesses in multiple buildings” provide ALI (Automatic Location Identification) information to Enhanced 9-1-1 PSAPs. In other legislation, the phone has to be dialable from the PSAP, thus suggesting that all telephones require a DID number. To address these issues, a number of products have emerged that solve many of these issues.

There are at least three major components to a complete solution: (1) passing the PBX Station’s unique ANI information, (2) updating the ALI database, and (3) notifying on-site security and staff.



The most important component, and the one that in most cases satisfies legal requirements, is passing the PBX station's unique ANI (Automatic Number Identification) information to the PSAP. This may involve either the PBX or a third-party application terminating CAMA (Centralized Automatic Message Accounting) trunks. These special trunks deliver the 911 call to the E9-1-1 Tandem CO or Selective Routing switch. This will include either sending the DID number of that PBX station or inserting the telephone number of the nearest DID-serviced telephone to the victim caller.

If employees and telephones always stayed in the same location, this would be an acceptable solution. However, as you well know, at many companies the telephone directory is highly dynamic and requires multiple moves, adds and changes (MACs). As each MAC takes place, the PBX owner is obligated to send the new location information to the ALI database located in the Central Office (ALI database locations may vary depending on Local Exchange Carrier). In other words, operating as the telephone company, which is an enormous task.

There are a variety of products that automate this process by providing an integrated solution to the PBX and public E9-1-1 network. In these cases, the telephone and associated location information is sent to the third-party system, which in turn provides that information to the telephone company or directly to the ALI database via modem or the Internet. This process is commonly referred to as private switch ALI (PS/ALI) upload or ALI update.

The first two components may satisfy the PBX owner's legal obligations in the aforementioned states. However, there is a moral obligation to the organization and its people and property. For this reason a small number of products offer many types of event notification methods. The options vary from product to product; however, popular methods include radio pager, LED board, local alarm, remote printer and in a few cases, network broadcast or instant message-type notification that 911 has been dialed. These notification methods typically include information such as telephone number, building,



floor and office. Event notification provides awareness and allows security and other staff members to assist EMS with whatever means necessary for that emergency.

There is yet another lesser-known feature that has recently been offered in conjunction with a third-party system. This feature, called real-time monitoring, takes the handling of a 911 call one step further by allowing the security staff to monitor the audio of a 911 call in progress. Since it is illegal to interfere with the transmission of a 911 call, this feature is a listen-only pathway.

As complicated as providing private switch E9-1-1 may appear, protecting people and mitigating liability are the two most important issues an organization faces. In the seven states listed, there are specific guidelines in place to help the PBX owner in their decision-making process, and there may be hefty fines and lawsuits for law violators. In other states, the decision remains in the hands of the organization. In either case, there are now products available to address these issues.

¹ Specific state information can be found at:
<http://www.nena.org/9-1-1TechStandards/state.htm>