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The Two Major Roles of Public Safety Recording Systems

Recording systems for public safety agencies may be viewed from two different perspectives: their performance during an event and their performance after one.

During an emergency, the protection of lives and property eclipses all other needs. Recording systems must meet special demands, improve performance, and make a tough job easier for police, firefighters, air-traffic controllers, and other public safety officials.

After an event, a precise analysis can be equally crucial because it can help streamline procedures and improve response times, thus ensuring superior capability into the foreseeable future.

PERFORMANCE DURING AN EVENT

During an event, public safety officials experience an effect best described as compression of time. They perceive their environment in a different way when their rigorous training kicks in, and they are capable of amazing feats.

When this happens, their support tools must function flawlessly for a speedy and efficacious resolution of the situation. Recording systems, one of

these essential support tools, must meet certain basic requirements.

The most important requirement involves 100% reliability during rapidly changing circumstances in a high-performance, high-quality environment. Whether it's a hostage situation or a mother worried about a sick child, recording systems must work flawlessly with no room for error. Every single word must be preserved and integrated with time stamps accurate to one-hundredth of a second.

This reliability can be achieved in a number of ways. System architecture can use a modular design to avoid unnecessary equipment and complexity, thus decreasing the likelihood of a malfunction. Of course, this capability also saves money so public safety organizations, often strapped for cash, can purchase other life-saving equipment.

A second way to ensure reliability involves the operating system used by the communications recorder. Some of the best recording solutions offer Linux as an option because this operating system provides a very stable recording environment, essential for mission-critical applications.

Its open-source structure allows con-

tinual improvement, and it is not as vulnerable to viruses as Windows. Linux provides all standard UNIX tools, excellent networking, and an advanced graphical user interface (GUI) integrated into the operating system.

This advanced GUI helps the recording system operate in a transparent manner during an emergency. For example, dispatchers faced with a burning building should not have to think about the recording equipment; it should become part of the background so they can focus on the situation at hand.

In addition to reliability, recording solutions for public safety agencies must provide an all-encompassing approach. They should cover traditional telephony, Voice over IP, trunked radio communications, and screen activities. For companies switching from standard phone systems to VoIP, hybrid recording solutions should cover both transmissions using the same server.

Recording systems should span local centers, networks, and distributed environments without sacrificing the security of the transmission. A police station in an Orange County locality, for example, may need to monitor the latest reports to firehouses on spreading wildfires in nearby communities. Recording solutions may be used to interconnect emergency centers to improve coordination while protecting privacy with the highest level of security.

One particularly useful feature is called Last Call Repeat. It lets the dispatcher replay a call even while it is still in progress. Because callers in an emergency situation may panic or become incoherent, this feature can help the dispatcher filter out essential details.

Though bulk recording is the norm, agencies using selective recording need to consider other features, too. One of these, a keep/delete option, is often used

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for another public safety function, threat-call recording. In selective recording environments, the ability to record a call from the beginning at any time during the conversation can prevent the loss of key evidence because the operator may not realize a call is threatening until a later point in the conversation.

This capability also protects against invasion of privacy. The option may be toggled on and off to either store an entire phone call from the beginning or completely delete it. The last selection determines how the call will be treated.

PERFORMANCE AFTER AN EVENT

Analyzing an event after it occurs incorporates an important facet of communications recording, quality monitoring. Dispatchers and other responders need constant, rigorous training. Shaving a few seconds off the response time can literally save lives. Quality monitoring helps supervisors train their staff by examining best practices.

Sophisticated quality monitoring solutions often let the supervisor append comments to recorded calls for later review. Recordings should be easily emailed back and forth, and features such as a "call collection box" allow the grouping of recordings from the same event for easier retrieval and analysis.

Interactions with the public may be retrieved for analysis using call-index information such as the incoming or outgoing phone number, and the time or duration of the conversation. New speech processing capabilities also let investigators search the archives for discussions containing a keyword such as "bomb." Voice recognition and emotion detection have been used to aid investigations.

Public safety agencies may also need to protect themselves from liability by collecting evidence admissible in a court of law. Recordings should be time stamped and provide tamper-proof data, free from manipulation both during and after an event. Encryption algorithms are used by high-end recording systems to provide solid evidence for any occurrence.

Archiving also represents a key feature to consider for post-event recording needs. Today's solutions allow nearly unlimited storage of recordings online as well as the employment of diverse archiving devices using optical disks and network-attached storage.

Of course, communications backup must also include redundancy as an essential feature both during and after an event. Recording systems should offer mirroring devices such as RAID 0, 1 and 5 hard disks, or hot-swap hard disks, as well as backup power supplies.

Recording systems play an essential role for emergency personnel in their valiant efforts to help people in distress. They should be evaluated carefully for their contributions both during and after an event. **9-1-1**

Vendor's Corner is a guest column about product and vendor issues and solutions. Michael Sauer is Vice President Operations, ASC telecom AG, a leading global provider of innovative solutions to record, analyze and evaluate multimedia-based communications. First responders and public safety organizations enhance reactivity in emergency situations; therefore, ASC provides an important contribution to public safety. For more information, visit www.asctelecom.com.

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