Gunfire Detection Cloud-Based Architecture

A Key to Total Protection

The Safe Zone Gunfire detection system continuously monitors indoor spaces and quickly sends accurate electronic alerts to first responders in the event of a gunshot. Housing the processing in the cloud streamlines the physical packaging to just over 2 inches on a side, yet still provides the needed power for smarter and faster alerts.

The cloud-based processing allows automated software updates and continuously improves the machine-learning system (ML/AI) performance. Additional benefits include detector health checks and reliable connectivity. In short, complete cloud-based architecture for a gunfire detection system makes the performance more accurate, advanced, and accessible.

Rapid Data Processing

Each room's Safe Zone Detector is equipped with state-of-the-art sensors that capture data from acoustic, infrared, and concussion signatures at the moment of a gunshot. The nonintrusive wall- or ceiling-mounted sensor compiles all three data sets into one gunfire signature file.

The gunfire signature file is delivered immediately to the cloud where the Safe Zone proprietary machine-learning system is analyzed to determine 1) number of shots fired 2) shooter location and 3) the type of firearm used. The Safe Zone system then pushes a notification—including a floor plan with the shooter's location—to supervisory and safety personnel via the Safe Zone app.

The user can then immediately initiate the transmission of this critical info to 911 (via an exclusive RapidSOS link), as well as connecting via a voice call. At this point, the Safe Zone system also sends SMS text messages to an unlimited size contact list selected by the user (i.e. students, staff, coworkers, etc.).

Because every Safe Zone detector installed globally connects to the same cloud-based machine-learning system, each signature file reported by a sensor updates the system's knowledge base automatically causing the Safe Zone system to grow smarter for all users.

No Computer Fails or Hangs

While other gunfire detection systems rely on additional computer hardware and 3rd party software running on-site, Safe Zone does not. The small, self-contained detectors easily mount on a wall or in a corner and connect to existing WiFi or PoE networks.

Utilizing the cloud for the machine-learning system and data processing eliminates added expense and reliability concerns inherent in the update/maintenance requirements of on-site servers. With both the gunfire classification and system notification handled natively, there will never be a third-party hardware or software malfunction with Safe Zone. This is truly integrated robust connectivity.

Integrated Device Health Check

The Safe Zone devices report their own health every minute of every day. The cloud-based infrastructure means monitoring is automatic and built into the system itself with no need for maintenance technicians. Every 60 seconds, each detector transmits a "heartbeat" which reports back to the cloud service. If a device doesn't report, the system processes that sensor as offline and immediately sends a health check alert to the supervisory users.

Reduced Cost

The cloud-based architecture of Safe Zone means the system is easy-to-install with low voltage power, standard network connectivity, and no extra hardware. Simplified state-of-the-art hardware designs and no onsite maintenance needs or updates make the installed total cost price point 5-10x less than competitors.

SAFE ZONE
Gunfire Detection

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