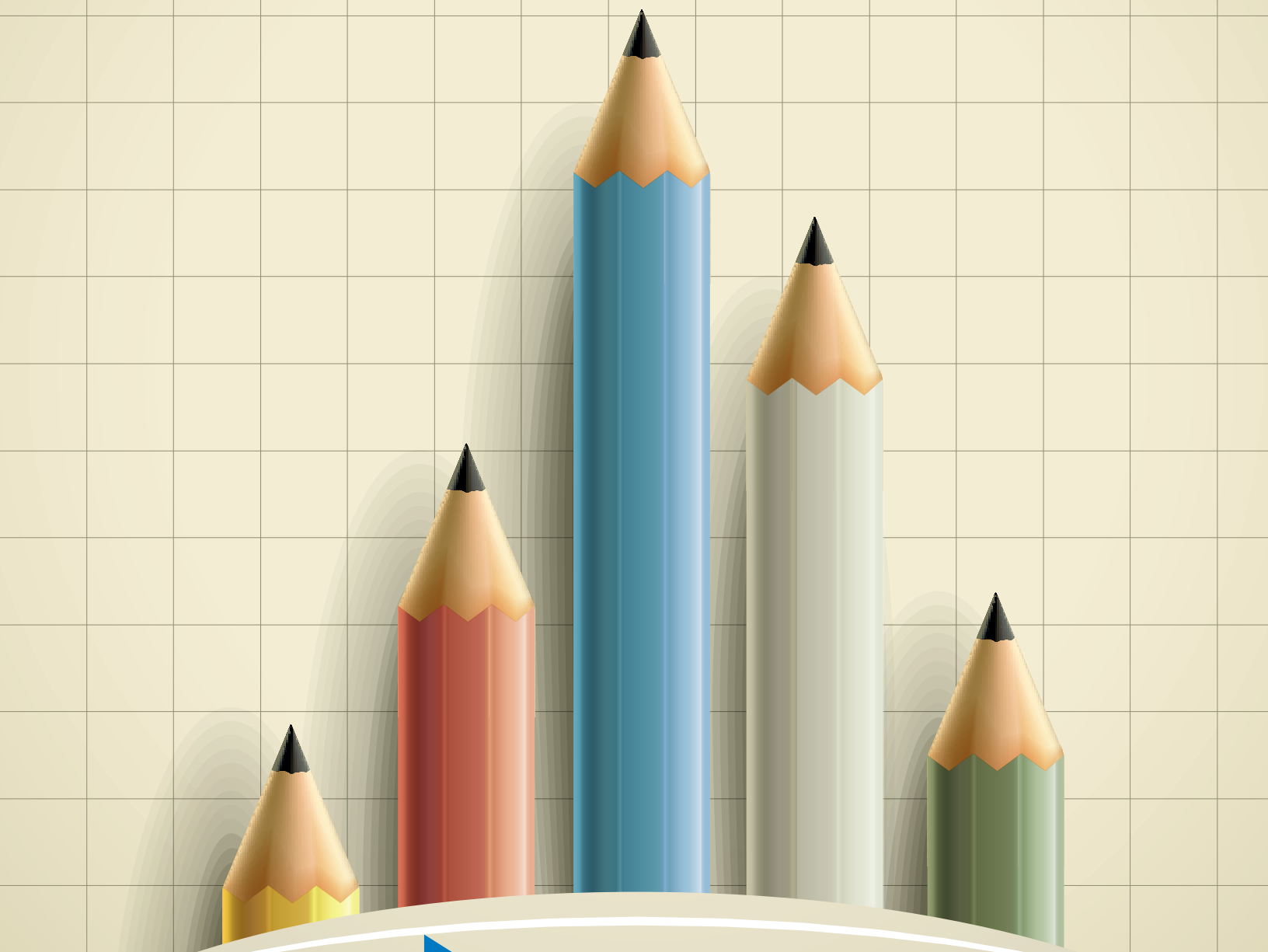
A SOUND SOLUTION IN SCHOOL SECURITY



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World Leader in Audio Monitoring Technology Since 1979

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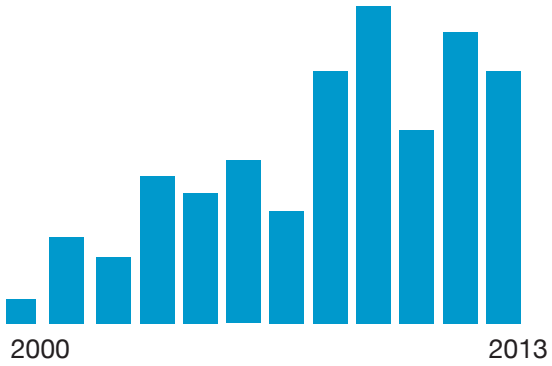
INTRODUCTION: THE NEED FOR AUDIO

From 2000-2013, the Federal Bureau Investigation (FBI) identified 39 active shooter incidents that occurred in educational environments*. As a result, 117 people were killed and 120 wounded.

Since 2013, there have been over 186 school shootings, according to the non-profit organization, Everytown for Gun Safety. United States schools have experienced nearly one shooting every week since the tragedy at Sandy Hook.



The number of active shooter incidents are on the rise in the USA.

This increase has created a nationwide necessity for increased security measures on our campuses. Security directors have moved to remedy lenient security measures on campuses by either upgrading security systems and installing state-of-the-art video equipment and other technologies to increase situational awareness. Traditionally, security personnel have relied on video as the primary method of monitoring, but this strategy presents a significant drawback. When a security team only uses video to evaluate a situation, the data gathered is limited and many times inconclusive.

Without audio, you are not able to fully understand the gravity of the situation nor are you adequately equipped to respond to the danger. A security solution is more effective when it uses multiple technologies that capture sight and sound.

* *U.S. Dept. of Justice, FBI, "A Study of Active Shooter Incidents from 2000-2013," September 16, 2013. Accessed June 23, 2016, https://www.fbi.gov/about-us/office-of-partner-engagement/active-shooter-incidents/a-study-of-active-shooter-incidents-in-the-u.s.-2000-2013.*

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THOUGHTS FROM AN INDUSTRY EXPERT

Many leaders in the education sector have begun to emphasize the importance of adopting audio in monitoring programs and security protocols. Real-time situation assessment, efficient surveillance and secondary verification are just some of the benefits experts are discussing.

An industry veteran, Guy Grace has over 31 years of security experience including 27 years of campus security experience. Grace is a Steering Committee Director for PASS, the Partner Alliance for Safer Schools, and is also the Director of Security & Emergency Preparedness for Littleton Public Schools. He has worked with numerous security technologies and for him, integrating audio and video is a logical choice.

“When I train people for lockdowns,” said Guy Grace, “I actually say you have to use your hearing, and your vision, and your smell– anything that tells you that there’s something wrong, you have to use it. So hearing is absolutely critical of the senses.”

Grace experienced this first hand when responding to the 2013 shooting at Arapahoe High School in Colorado. According to Grace, some students and staff initially reacted to the sight of an individual running on to the campus with a firearm. However, after Grace followed-up with the individuals, he realized that many more protected themselves and others when they implemented the lockdown protocols by reacting to the sounds of the shooting. According to Grace, audio plays a vital role in emergency response and being able to analyze the threat at hand.

The security director also affirmed that audio monitoring, especially when conducted through two-way solutions like intercoms, is a great tool to provide accountability.

“All of your first customer service interaction between your office staff and your visitors starts there at that intercom. Sometimes in very rare situations, it can get volatile,” Grace explained. “So it’s good to have, for those types of situations, the ability to hear and record what’s going on at your key customer service points.”

In one instance, Grace recalled a verbal confrontation in which a parent was disrespecting a school resource officer. When the conflict continued to escalate, Grace was able to intervene and respond using the intercom. He got on the intercom and said the conversation was being recorded.

His statement instantly diffused the situation and the parent left the school grounds immediately. Grace referred to the strategy of using audio to resolve disputes as “de-escalation through technology” and has found it to be successful.

“Sound and sight are the new dynamics in school surveillance so to say,” Guy Grace said. “I look at it as we need both.”

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IMPLEMENTING AUDIO ON CAMPUS

When audio is paired with video, security needs are met, monitoring gains achieved and cost-savings earned. Expanding on the advantages Grace mentioned above, here is a guide to the key benefits of installing audio-video solutions.

1. ADDITIONAL EVIDENCE

Integrating microphones with cameras gives staff access to more details about a suspect or scene. Voices, names, languages spoken and directives are just a few examples of what information can be aggregated. This additional data is crucial for first responders as they assess the suspect's intentions and threat level.

Recommendation: All zones under video surveillance should have audio monitoring coverage as well. To achieve this, deploy audio equipment external to video cameras and placed as close as possible to the area to be monitored.

2. MONITORING EFFICIENCY

Video cameras are effective surveillance tools, but they are not able to capture everything. A small school may only have a few cameras installed throughout their grounds, creating surveillance blind spots for select buildings or areas. Meanwhile, a large entity, such as the Los Angeles Unified School District, which has over 900 schools, has hundreds of cameras. These cameras cannot be monitored at all times. In both cases, deploying audio solutions would automatically flag incidents not caught on camera, as well as alert central station guards of what surveillance zones need to be closely monitored.

Recommendation: To compensate for blind spots or limited staffing, install audio equipment in school common areas and around the perimeter, particularly in the areas that lack cameras. The sound solutions will capture any suspicious noises, during and after school hours, and will give staff an early warning sign of any suspicious
activity.

3. CRIME DETERRANCE

Beyond detection, audio monitoring creates opportunities for prevention. In a situation where a rowdy teen walks onto school property after hours, a two-way audio unit allows security to speak to an individual remotely in real-time. Having the ability to communicate in real-time can be a powerful warning that dissuades a trespasser from vandalizing the property or committing other offenses.

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IMPLEMENTING AUDIO ON CAMPUS

Recommendation: Mount a two-way audio solution at all main entry and exit points on campus. Train staff on how to respond to various incidents, including vandalism and burglaries. Additionally, record a warning message that will play automatically whenever audio or video sensors detect suspicious activity.

4. DISPUTE RESOLUTION

Bullying is one of the most prevalent issues concerning school communities today. According to the National Center for Education Statistics, about 22 percent of students ages 12-18 reported being bullied at school.*

Installing microphones at a school's key traffic or interaction points provides accountability by documenting what is said, which can then be used to resolve disputes or placate verbally hostile individuals.

Recommendation: For all high traffic campus areas under surveillance, ensure that cameras are paired with external microphones. Make sure to mount the microphones close to the desired area or object for optimal performance.

5. COST-EFFECTIVE UPGRADE

Adding audio to your security system yields a high return on investment (ROI) with minimal cost and installation. Sometimes, configuring audio capability for your security solution is as easy as connecting microphones to your existing cameras. In other cases, audio solutions can be easily integrated to work with existing cameras or access control systems.

Recommendation: When preparing to pitch your school district's financial officers on investing in audio monitoring security equipment, illustrate the ROI. Determine the cost-savings by calculating the labor and fees associated with investigating a bullying claim, a vandalism incident, etc. Compare the number with the cost of installation for the audio equipment.

** "Fact Facts: Bullying," National Center for Education Statistics, accessed June 23, 2016, https://nces.ed.gov/fastfacts/display.asp?id=719.*

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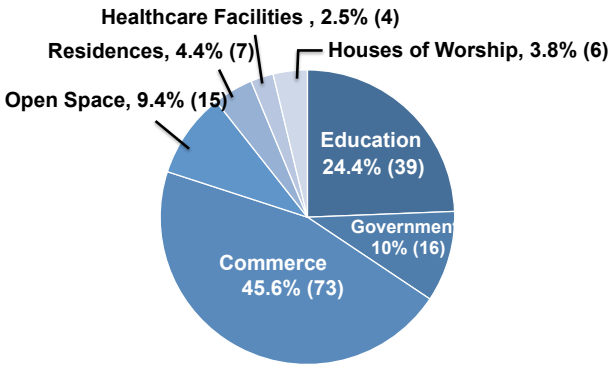
ADDING AUDIO ANALYTICS TO YOUR SECURITY PLAN

Once basic audio monitoring equipment has been evaluated and adopted into a security plan, education decision makers should also consider the deployment of audio analytics solutions; here's why.

Education institutes have had to increasingly deal with a variety of risks, attacks and breaches that have threatened the wellbeing of students and staff alike. Prevalent issues among schools today are vandalism, burglaries and assaults. According to a study provided by the U.S. Office of Justice Programs, college and university campus police recorded 92,695 crimes in 2010.*

Active Shooter Incidents in the United States Between 2000-2013



Schools face serious security threats everyday, and a major problem they encounter is that video alone does not provide a high enough rate of incident detection. Although the capabilities of security cameras have improved significantly over the years, video is still mainly used to review footage after an event has occurred. This is where audio analytics come in to fill the gaps of existing security solutions.

Audio analytics, or sound detection software, analyzes and identifies a sound in real-time without a monitor or guard needing to evaluate it. Similar to how the human ear processes audio, the detection software analyzes sounds through advanced algorithms and classifies them into predetermined categories. While video alone generally captures information from a single angle, audio analytics has the ability to analyze sound from 360 degrees and notify security personnel in seconds. Once a sound is identified, the system sends an immediate alert to school personnel and law enforcement, providing an early warning notification. School staff can then use the mapping interface within the VMS software to post alerts and activity in real time. Alerts are sent via text messages and email, which can also be shared with local police, creating a coordinated effort among first responders.

Over the years, glass break and car alarm detectors have been widely used in a variety of sectors. However, the technologies that have emerged as the leading audio analytics in campus safety are aggression and gunshot detection.

** "School and Campus Crime," accessed June 23, 2016, http://www.victimsofcrime.org/docs/ncvrw2013/2013ncvrw_stats_school.pdf.*

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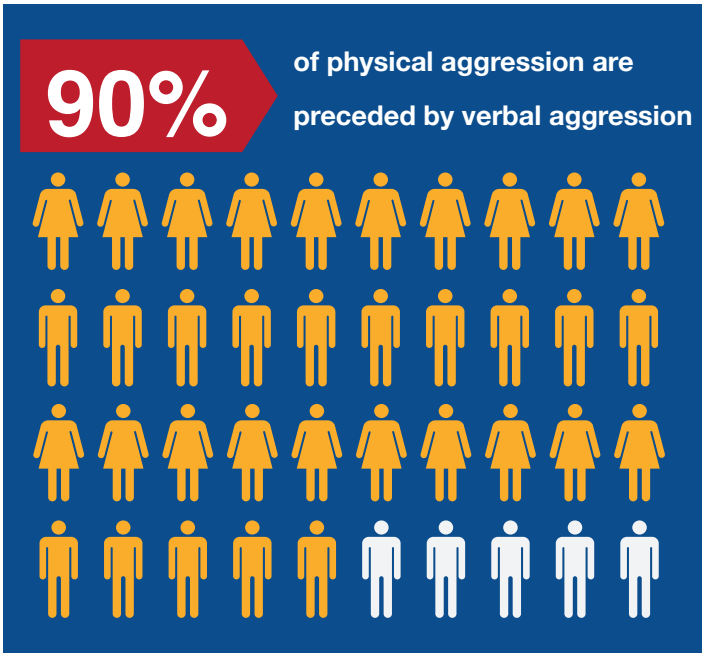
ADDING AUDIO ANALYTICS TO YOUR SECURITY PLAN

Aggression detectors are capable of accurately recognizing duress in a person's voice. The software automatically and objectively detects the presence of rising human aggression, anger or fear, and subsequently warns staff by a visual alert or alarm trigger. As a result, end users can identify high-risk situations in real-time and prevent acts of physical aggression before they happen. Aggression detectors can provide additional evidence for areas such as classrooms, hallways, school buses and parking lots where unaccompanied video tends to fall short.



A gunshot detector recognizes firearm discharge from various firearms in different settings. Within seconds of a gunshot, the software accurately classifies and triggers an immediate notification through a designated VMS. Security staff can then verify the alert, effectively reducing the reaction time of first responders. Schools can utilize this technology in high-risk zones including hallways, common areas or quads, main entrances and classrooms.

Aggression and gunshot detection are some of the best security tools in the campus security market when it comes to detection, intervention and deterrence. They are the next generation of monitoring; equipping security teams with critical information and enhancing perimeter security.

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AUDIO MONITORING: PRIVACY BEST PRACTICES AND FAVORABLE LEGISLATION

The benefits of integrating audio monitoring and sound detection into a school security solution are clear, but before any administration implements these systems, they need to understand the correlation between monitoring and privacy. The common question security personnel have is whether audio monitoring infringes upon privacy and whether it is acceptable on school grounds. To determine when and where audio is permitted, security professionals first need to understand what constitutes as privacy.

The United States Code, specifically Title 18, Section 2510, 2, defines private communication as that which is "uttered by a person exhibiting an expectation that such communication is not subject to interception under circumstances justifying such expectation."* Simply put, the right of privacy arises when there is an expectation, such as when two individuals are having a conversation in their home.

However, if people are congregating in an area where other individuals may overhear their conversation, there is no expectation of privacy. Therefore, in public places, such as schools, sports arenas and town squares, monitoring is permitted.

What school administrations need to focus on as they deploy new security surveillance solutions, is removing the expectation of privacy. Here are few best practices.

1. Post Clearly Visible Signage. This first method is by far the most common and important. There should be a clearly visible sign communicating audio and video surveillance is taking place on the premises. Typical places for mounting these signs include school fences, main entrances and the main office.

2. State Monitoring Practices in Student Code of Conduct. Administrators can also notify students that the school is under surveillance by stating it in the student code of conduct. This practice increases awareness and reduces a school's liability should an individual claim he did not see a sign on campus saying the area is being monitored.

3. Be Cognizant of Microphone Placement. When determining where to integrate audio on campus, consider where previous security equipment has been installed. Use acceptable camera placement as a guide for where a microphone should and should not be placed. If a camera would never mounted inside a public restroom, neither would a microphone.

* *18 U.S.C, Section § 2510 (2012).*

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AUDIO MONITORING: PRIVACY BEST PRACTICES AND FAVORABLE LEGISLATION

4. Assure Staff of the Purpose of Monitoring. Reiterate that security personnel will only use audio to investigate and resolve wrongdoings so as to enhance the safety of staff and students. In the case of aggression detection or gunshot detection, it is important to note that the software listens to sound patterns and not words or speech.

As more schools have shown interest in deploying audio monitoring, more policymakers have introduced legislation that require the increased adoption of audio to protect students. In 2014, Pennsylvania Governor Tom Corbett signed a law that permitted audio monitoring on school buses. The statue was recently put into practice. In April 2016, The Washington Times reported an incident that occurred in Jeannette, PA in which audio was used to confirm that a bus driver had asked an 11-year-old student to move an active power line out of the road. Since that time, the driver has been charged with endangering the welfare of a child. In this instance, audio was used to provide accountability and justice to a student.

Likewise, in the wake of several high-profile cases across the United States where school staff reportedly abused students with disabilities, Texas senators proposed a bill that requires schools to install audio and video monitoring equipment in self-contained classrooms, or other settings offering special education. The bill's intent was to provide technology that would deter inappropriate behavior. Governor Greg Abbott signed the bill into law in November 2015 and it is to be implemented for the 2017-2018 school year.

These examples showcase the true purpose of audio monitoring, which is to increase security and deter crime, and why campuses should consider it.

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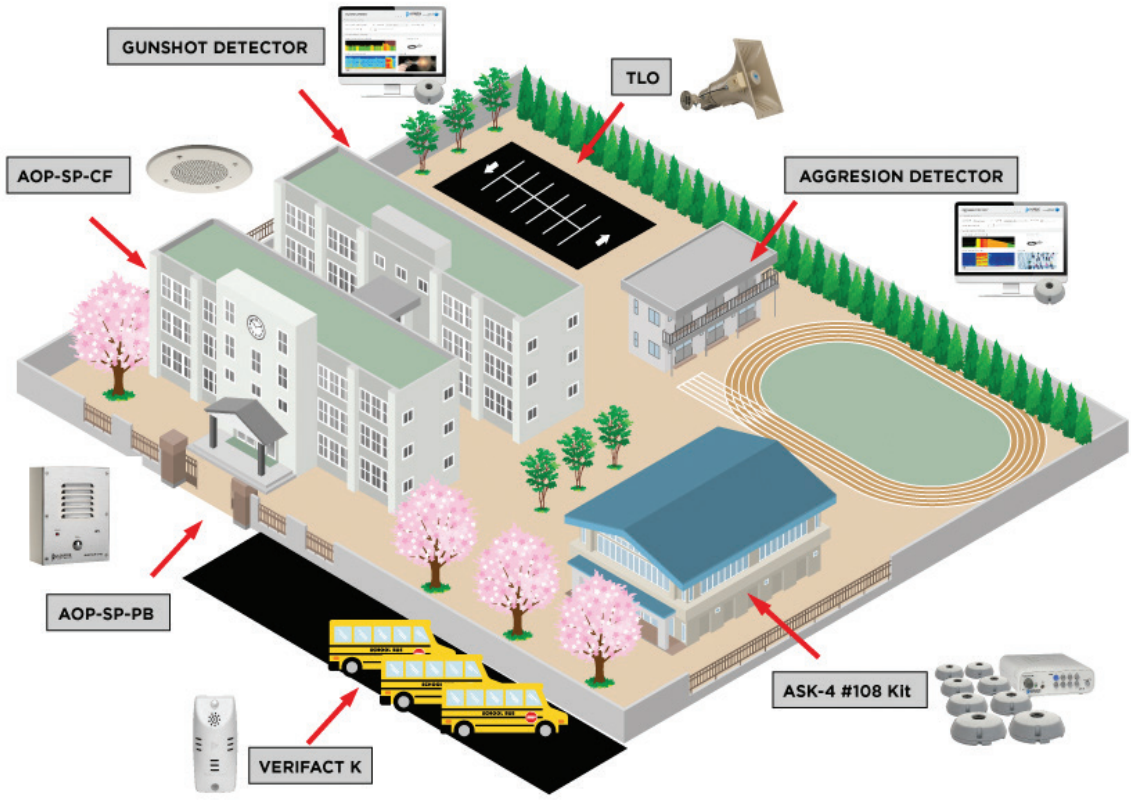
SECURE YOUR CAMPUS WITH LOUROE ELECTRONICS

Louroe Electronics' signature line of Verifact® of microphones are characterized for their sensitivity, omnidirectional capability, durability and design. Louroe has a microphone for every type of installation surface including the ceiling, high ceiling, wall, table-top, outdoor exterior, and vandal-resistant area.



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A SOUND SOLUTION IN SCHOOL SECURITY

Here is a snapshot of how Louroe's audio and audio analytics solutions can improve security on your campus.

Main Entrance – Install the AOP-SP-PB intercom for a two-way audio unit that will allow staff to verify a guest's purpose for visiting the school.

Classrooms – Deploy the AOP-SP-CF, with the speakerphone in the classroom, so that administrators can call students to the office over the speakerphone or host a virtual classroom.

Hallways – Monitor hallway activity with the ASK-4® #108, which is an eight zone audio monitoring system that is compatible with most recorders.

Commons Areas – Set up audio analytics solutions, such as the Gun shot, Aggression, Car Alarm or Glass Break Detectors, with any network camera that is integrated with a Louroe Verifact® microphone. Use these solutions to identify threats to students and provide early detection and shorten response times.

School Bus – Place the Verifact® K, a directional microphone specifically designed to capture sound in areas with high levels of background noise, in a school bus.

Parking Lot – Utilize the TLO, powered by an AOP-SP70, in the parking lot. Give security staff the ability to monitor/listen and disseminate important messages over the loudspeaker across large areas.

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CONCLUSION

Audio monitoring is quickly on its way to becoming a standard of security solutions across the education sector. However, that does not eliminate the reality that there is a general lack of knowledge on the value of audio security. It is time for school staff, security personnel and integrators to come together to increase awareness and deployment of a solution that can enhance existing security systems and student safety.

If you are a school administrator, consider talking to your integrator partner to assess your current system's audio capability. Together, you can determine where microphone placement and sound detector installation could improve situational awareness and remedy camera blind spots.

If you are an integrator, ask, how many cameras need audio? The answer can help your team identify more business opportunities with existing customers in education. Offering audio can also diversify your product and service portfolio, distinguishing your company from competitors.

Optimizing and installing new audio solutions can be a little daunting. However, there are resources available that can make the assessment and installation process easier. Consider reviewing a guide to the latest audio technology and where to best implement it on campus. Additionally, review industry approved best practices, such as the U.S. Department of Homeland Security's K-12 School Security Checklist, to identify the highest priority areas of a school's ground and find a synopsis relative to your current security solution.

Useful Resources for School Security

1. U.S. Homeland Security K-12 School Security Checklist: https://www.illinois.gov/ready/SiteCollectionDocuments/K-12SchoolSecurityPracticesChecklist.pdf

2. Partnership Alliance for Safer Schools: http://passk12.org/

3. U.S. Department of Education, Campus Safety and Security: http://ope.ed.gov/campussafety/#/

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ABOUT LOUROE ELECTRONICS

Located in Van Nuys, California, Louroe Electronics® has been the world leader in audio monitoring technology since its inception in 1979. Recognized globally, Louroe Electronics' products are used in over 52 countries and are utilized by both the private sector and government.

The company's Verifact® line of microphones, complementing base stations, and communication accessories, provide line level output to interface with various digital electronics. For over three decades, Louroe Electronics has maintained rigorous standards to ensure their products provide reliability, durability, and excellent performance for their customers' needs.

For more information about Louroe's audio solutions, visit www.louroe.com or call 800-927-6498

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