Shooter Detection Systems, LLC

GUARDIAN
INDOOR ACTIVE SHOOTER DETECTION SYSTEM

School Campus Overview
• **12.5 Minutes:** Average duration of an active shooter incident

• **18 Minutes:** Average response time of emergency response/law enforcement

• **Fact:** In the majority of active shooter incidents, emergency response time greatly exceeded the incident duration – could not stop the shooter or prevent further deaths or injuries

• Decreased response time and incident duration yields a *reduction* of deaths and injuries.
Guardian Indoor Shooter Detection
Alert Model Success

• Conference on Fire Prevention Action Program in 1947 resulted in fire alarms and response policies and procedures

• Drastically reduced response time and incident duration of fires in educational institutions – zero fire casualties in these facilities

• An alert system is the only realistic means of reducing response time and incident duration for active shooter scenarios

• Indoor gunshot detection system can immediately notify internal security command and local authorities – regardless of jurisdiction - while simultaneously containing the threat (facility lockdown and mass alert protocols)
Guardian Indoor Shooter Detection
Product Introduction - Features and Specifications

- **Guardian Introduction**
  - Active shooting incidents are on the rise
  - Mature, low-cost system
  - Developed from military technology
  - Immediate notification
  - Near zero false alerts

- **Guardian Features**
  - Alerts within a second of a gunshot detection
  - Simple integration into camera/security networks
  - Built-in test provides continuous feedback loop
  - Simulation and training modes available
  - Anti-tamper features included

- **Guardian Specifications**
  - Fits into standard 4-inch electrical box
  - System Integration Kit (SIK) for third-party product integration
  - **Optional** automated microphone activation allows first responders to monitor shooter location(s) inside the building.
  - Wireless configuration
  - Ceiling and wall-mounted design
Guardian Indoor Shooter Detection
Proven History

- Guardian technology based on the most widely used military gunshot detection system in the world
- Over 11,000 systems deployed
- $45M of IR+D invested in product
- Developed in conjunction with Defense Research Projects Agency (DARPA)
- Original prime contractor team members are founders of SDS
Guardian Indoor Gunshot Detection
Guardian Evolution

World’s Most Fielded and Proven Gunshot Detection family of Sensors

Boomerang System Military Grade System

Boomerang protecting US Power Grid

Boomerang protecting Helicopter

Warrior X Mobile Unit

Guardian Indoor Gunshot Detection System

$45 Million of Research and Development Investment

$350 million in systems deployed worldwide

Lowest False Alarm Rate – Near Zero-Over 11,000 Systems in Use
A Study of 160 Active Shooter Incidents in the United States Between 2000 - 2013:

Location Categories

- **Education, 24.4% (39)**
  - Schools (Pre-K to 12), 16.9% (27)
  - Institutions of Higher Education, 7.5% (12)

- **Commerce, 45.6% (73)**
  - Businesses, Open to pedestrian traffic, 27.5% (44)
  - Malls, 3.8% (6)
  - Businesses, Closed to pedestrian traffic, 14.4% (23)

- **Government, 10.0% (16)**
  - Other Government Properties, 6.9% (11)
  - Military, 3.1% (5)

- **Open Space, 9.4% (15)**

- **Residences, 4.4% (7)**

- **Health Care Facilities, 2.5% (4)**

- **Houses of Worship, 3.8% (6)**

Source: Federal Bureau of Investigation, 2014

fbi-releases-study-on-active-shooter-incidents#disablemobile
<table>
<thead>
<tr>
<th>Event</th>
<th>Date/Location</th>
<th>Casualties</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emanuel African Methodist Episcopal Church</td>
<td>June 2015, Charleston, SC</td>
<td>9 Killed, 1 wounded</td>
</tr>
<tr>
<td>Charlie Hebdo Magazine</td>
<td>January 2015, Paris, France</td>
<td>12 Killed, 11 Wounded</td>
</tr>
<tr>
<td>Washington Navy Yard</td>
<td>September 2013, Washington, DC</td>
<td>12 Killed, 8 Wounded</td>
</tr>
<tr>
<td>Sandy Hook Elementary School</td>
<td>December 2012, Newtown, CT</td>
<td>27 Killed; 2 Wounded</td>
</tr>
<tr>
<td>Cinemark Century 16 Theater</td>
<td>July 2012, Aurora, CO</td>
<td>12 Killed, 58 Wounded</td>
</tr>
<tr>
<td>Ft. Hood Readiness Center</td>
<td>November 2009, Ft. Hood, TX</td>
<td>13 Killed, 32 Wounded</td>
</tr>
<tr>
<td>Virginia Polytechnic Institute</td>
<td>April 2007, Blacksburg, VA</td>
<td>32 Killed, 17 Wounded</td>
</tr>
<tr>
<td>Columbine High School</td>
<td>April 1999, Littleton, CO</td>
<td>13 Killed, 20 Wounded</td>
</tr>
</tbody>
</table>

Guardian Indoor Shooter Detection
Operational Aspects

Acoustic Gunshot Detection Sensors

Audio Microphone (Optional)

IR Sensors
• Microphones listen for bullet and muzzle blast (bullet not required to pass sensor)
• IR sensors look for muzzle flash signatures
• Once muzzle is detected, the sensor validates muzzle blast & IR flash using proprietary algorithms
• A shot detection message is sent to central location
• The security system can cue cameras, contact emergency personnel, lock doors, etc.
SHOT DETECTED (9:23:19)
Guardian Indoor Shooter Detection
Sample System Layout
Guardian Indoor Shooter Detection
Installations

Current Installations
- Corporations
- Manufacturing
- K-12 Schools
- Utilities

Pending Installations
- Airports
- Data Centers
- Hospitals
- Malls
- Sports Franchises
- Universities
- Vocational Schools

July 28, 2015
Guardian Indoor Shooter Detection
Installations – Educational Institutions
Guardian Indoor Shooter Detection
Installations – Educational Institutions
Guardian Indoor Shooter Detection
Installations – Corporations
Guardian Indoor Shooter Detection
Installations – Police Department Dispatch
Guardian Indoor Shooter Detection
PSIM/VMS Integrations / Dry Contact Outputs

- SDS has partnered with Sealevel Systems and has integrated their Ethernet-controlled Reed Relay output devices (Sealevel 140E, Sealevel 440E and Sealevel 440N) into the Guardian solution.

- The Guardian system can interface to other systems: Monitoring, Notification, VMS, etc., through the use of Dry Contract Relays (DCRs), also referred to simply as Relays.

SEALEVEL 440E

Honeywell Pro-Watch
Guardian Indoor Shooter Detection
Sensor Layout – School Environment
Guardian Indoor Shooter Detection
Guardian Gateway Software

- **Guardian Gateway Software (Required)**
  - Provides Guardian Sensor Interface
    - Connects to all Guardian Sensors
    - Provides low level control and maintenance for sensors
    - Isolates sensors from Corporate or External LAN/WAN
  - Provides 3rd Party Application Interfaces
    - Provides 1-N data ports for 3rd Party applications to receive all Guardian Sensor Information
      - Shot Detections
      - Health / Status / Degraded Performance Warnings
      - Offline (unplugged / network outage, etc.) Warnings
      - Tamper Detections
    - Integrations include (but not limited to)
      - Monitor Companies
      - Dry Contact Drivers
      - Mass Notification systems
      - SA / Command & Control systems
      - PA Systems

- **Guardian Situational Awareness Application**
  - Provides or augments existing solution
  - Floorplans and Alarm Status Graphic User Interfaces (GUI)
  - Email / SMS Notification
Guardian Indoor Shooter Detection
Streamline of Information – Mass Notification

Guardian Sensor

School Occupants
Police Department
Fire Department
Hospital/EMS Responders

Optional

Active Shooter

Immediate SMS/Email Alerts

Pinpoint Shot Location

Guardian Shot Detection

Alert - Guardian Shot Detection

To: me

GUARDIAN SHOT DETECTION ALERT

BUILDING: ABC MIDDLE SCHOOL
AREA/ROOM: ABC MAIN LIBRARY
SENSOR IP/LOCATION: 123456790/Location 5
ALERT TIME: 3:13 PM EDT

SDS Alerts
alerts@shooterdetection.com

Shooter Detection Systems LLC Proprietary
"The world has changed and we have to think outside the box; its all about protecting the students and faculty. As soon as a shot is fired, within a second a notification comes to my phone telling me which school and the location of the shot.”

- Judith A. Scannell, Superintendent of Schools, Methuen, MA

“The good thing about this system is that it is unobtrusive, it’s in the walls, it doesn’t scare anybody as opposed to metal detectors and surveillance cameras.”

- James Allen Fox, Professor of Criminology, Law and Public Policy, Northeastern University

“SDS is Professional, Knowledgeable, Focused and Willing to Spend Time to Ensure Success. We had five sites up and running in less than three days.”

- Tom Rohr Sr., CPP, Worldwide Corporate Security, Carestream Health, Inc.

“Our most important asset is our employee, that and the $50 million in precious metals that we hold in daily inventory. SDS’s uncomplicated installation and intuitive user interface helps us all sleep a little better at night.”

- Jewelry Manufacturer, CEO, Providence, RI

“After recent gunfire attacks on the power grid and downtown retail locations, we felt that putting in an immediate alerting system was an invaluable part of our new Active Shooter Training Protocols.”

- Exec. VP Security, $10b Utility Corporation
**Experience:** With 11,000 systems deployed in the toughest environments on the earth, we stand by our best in class performance which is based on this real world experience.

**Alerting Response Time:** The Guardian system alerts in one second, is completely automated (no human in the loop required due to superior technology) and has a near zero false alert rate.

**Total cost of ownership:** Guardian is simple to install and has a low recurring fee that covers automated alert messaging, first year on site replacement of sensors, health and status reporting and software upgrades.

**Privacy:** Customized gunshot detection microphones do **NOT** have the ability to discern human conversation and record only 1.5 of seconds of gunshot information that are used for engineering purposes only.
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