Gunshot Detection: A Public Safety And Security Resource For Smart Cities And Beyond

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The potential is huge for vendors in the security and technology industries that have gun detection-related services & products.

Gunshot detection systems are a fast growing trend that helps police and security guards to protect the public, capture criminals and collect forensic evidence for investigations. Gunshot detectors use digital microphones installed on (or in) buildings or along streets that listen for evidence of gunshots, provide near instantaneous notification, triangulate the location of shooters and direction of a shot, detect the type of gun and ultimately aid in catching fleeing suspects and solving crimes.

Gunshot detection is just one technology playing a role in the larger trend by city agencies to improve core city services. Cities are turning what are referred to as “smart city” solutions – new, innovative technologies that improve and maintain a high quality of life and “liveability” for citizens. Another top technology trend in public safety and security is body worn cameras which require a number of innovative systems and services for the data that is collected. The overall smart city marketplace that includes both gunshot detection systems and body worn cameras is
experiencing rapid growth worldwide and is predicted to grow from $8.1 billion globally in 2010 to $39.5 billion in 2016.

Expansion Of Use

Gunshot detection technology is moving into hundreds of cities across the U.S., such as Fresno, CA, that recently started a pilot program and Peoria, IL, that is ready to expand its current system. Onvia’s Project Center provides additional insight into recent bids and RFPs issued by agencies requesting gunshot detection systems.

City Of San Antonio In Texas

Issued a bid in April 2015 for the implementation, management and operation of a gunshot detection technology system (GDTS) to be used by the police department. The bid says the GDTS will be a law enforcement tool to improve officer response time to incidents involving illegal gunfire within the detection area. The city intends to develop two pilot programmes for two separate areas within San Antonio in FY 2016.

City Of Lowell In Massachusetts

Issued a bid in July 2015 for a vendor to install a gunshot detection and location system. This proposal is intended to acquire a system that will assist the police department to accurately detect/locate the source of the gunfire in an urban environment.

The dominant outdoor gunshot detection solution used by police in cities is the ShotSpotter system by SST, Inc., which is installed in 90 U.S. cities. News around gunshot detection and ShotSpotter has generally been positive, but the company had some early challenges around generating too many “false alerts” that required extra police time to investigate. In response, the company introduced a “final review/check” feature that incorporates a team of analysts available 24/7 to quickly weed out false alarms initially flagged by the system. Recent news seems to point to the overall effectiveness of their improved solution.
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Camden, NJ

In Camden, NJ, police have found that using this system reduced gun incidents by 49%. According to ShotSpotter’s own tracking methodology, in the first half of 2014 gun incidents were reduced across 31 cities with this solution by an annual rate of 20.6%.

SST Retains Status As A Leader In The Industry:

New York City In New York

Awarded SST, Inc. $1.5 million in October 2014 to provide a gunshot detection and location system to the police department. The proposed system will use specially placed sensors to pinpoint the precise location of gunfire within specified coverage areas.

In 2009, the NYPD tested a system from Safety Dynamics, but found that the technology yielded too many false alarms. In March 2015, the City announced the roll out of this pilot program with ShotSpotter; in real-time, ShotSpotter’s analysts will determine whether the noises were gunshots or something else like backfiring cars or slamming doors.

“This new gunshot detection system is going to do a world of good in going after the bad guys,” said New York City Mayor Bill de Blasio.

City Of East Palo Alto In California

Awarded SST, Inc. $29,850 in April 2015 for maintenance and support services for a citywide gunshot detection and location system.
District Of Columbia

Awarded SST, Inc. $499,588 in May 2015 a one-year contract starting in October 2015 for maintenance and support of gunshot detection services.

One detractor to gunshot detection systems is the price. Onvia’s database suggests the average purchase order amount for all cities is $169,400 and the single largest buyer has been Washington D.C. ($3.4 million). This can be a hefty price tag for many smaller municipalities.

Beyond The Streets

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While city-wide installations have drawn the most focus of this new technology, there are many other applications for public and private security use – entities whose budgets are either not as limited by price or they have been provided federal or private funds to implement the detection systems. For instance, Raytheon’s Boomerang military system was adapted for domestic uses in protecting U.S. power plants from terrorist attacks.
Additionally, schools have been an extremely vulnerable place for deadly shootings and this currently under-served market will likely be a primary target for vendors in the next few years. School districts are laser focused on student safety and are willing to invest funds to achieve the goal of creating a truly safe learning environment for students. One hesitation to implementing the technology, particularly on campuses, is privacy. But the technology may be sophisticated enough that this won’t be a deterrent: In June 2015, Newark Memorial High School in California announced it will be the nation's first high school to install gunfire detection technology: ShotSpotter's SecureCampus system will alert police, the principal and the superintendent, informing them exactly where gunshots were fired. Police Commander Michael Carroll says, "It won't have false alarms because it can distinguish between a gunshot and a firecracker or a door slamming. And it doesn't record conversations because they aren't loud enough to trigger a recording."

In Massachusetts, a recent proposal by Senator Michael Rush would require all new schools to install the gunshot detection system provided by locally-based Shooter Detection Systems, which has already donated the system to one local elementary school. The company, founded in 2013, spent a year commercialising shooter detection systems originally meant for the military. In a 2014 interview, CEO Christian Connors said the company's shooter detection system would be implemented in schools across the country, as well as airports and shopping malls. Connors said, "The goal is to reduce lives lost in active shooter incidents and immediately alert people inside the building and outside the building. It's basically a smoke alarm for gunfire."

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In Reynoldsburg, Ohio, another locally-based firm is piloting Batelle’s $75,000 SiteGuard Active Shooter Response system for free in one of Reynoldsburg’s high schools. The innovative system sensors will work with other security technology. For example, if a shooter fires in the school lobby, the sensors there would register that shot, alert 911 and begin to map the shooter’s movements. If the shooter moves down a hallway, fires, then goes upstairs and fires again, the sensors can inform
the police of the shooter’s movements and location and help provide the quickest, safest and most efficient response. The system can be tied into the school’s cameras and provide first responders with a video feed of the shooter and can also lock down the school, protecting students and isolating the shooter. Joe Begeny, a school board member, said that, especially with all of the school shootings that have happened since Columbine, a district can never be too careful. “It’s about student safety,” he said. “You hope that nothing bad happens, that there is never a situation of an active shooter in a building, but you want to be prepared if it does.”

A Smarter, Safer Future

Smart cities have raised the bar by investing in gunshot detection. In San Jose, CA city leaders hope that their new pilot program provided by locally-based anyCOMM will give them “smart city” status. They want to give residents confidence that the public safety resources are sufficient to deal with any threats or problems. anyCOMM reached out to city decision makers to share its technology that might help improve city operations and as a result, the agency will install nodes that can sense the blast of a gunshot, among other possible dangers. Teri Kilgore, assistant to the San Jose City Manager said, that they took an opportunity to look to the future and see what technologies are emerging and how those technologies can help complement city services: “We’re definitely interested in becoming a smart city.”

The potential is huge for vendors in the security and technology industries that have gun detection-related services & products. Vendors should begin outreach to city agencies, school districts and security firms to educate them on the necessity for services, products and systems designed to improve public safety, help save innocent lives and prosecute criminals. Due to the number of high profile gunshot incidents in city streets, the security threat of terrorism and the increased rate of mass shootings, an uptick in contracting opportunities appears imminent. Onvia recommends vendors to keep a close eye on upcoming public safety projects and agency fiscal budgets & capital improvement plans. Staying alert to upcoming opportunities will give contractors and subcontractors a chance to win more government business and do their part to help police and security firms create an overall safer environment.
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