



## ShotSpotter Respond™ Q&A

### 1. What is ShotSpotter?

Police rely on the community to call 911 if gunshots are fired, but only 20% of incidents are ever reported on average. This creates a situation where police departments have a large data gap that makes it difficult to be able to effectively “serve and protect” when it comes to gun violence. ShotSpotter fills the gap with a network of acoustic sensors that can detect, locate and alert police to nearly all gunshot incidents. The system is in operation in more than 100 cities and is used by police to: 1) be able to respond to a higher percentage of gunfire incidents; 2) improve response times to crime scenes to better aid victims and find witnesses; and 3) help police locate key evidence to identify and prosecute suspects.

### 2. How does ShotSpotter work?

ShotSpotter uses an array of acoustic sensors that are connected wirelessly to ShotSpotter’s centralized, cloud-based application to reliably detect and accurately locate gunshots using triangulation. Each acoustic sensor captures the precise time and audio associated with impulsive sounds that may represent gunfire. This data is used to locate the incident and is then filtered by sophisticated machine algorithms to classify the event as a potential gunshot. Acoustic experts, who are located and staffed in ShotSpotter’s 24x7 Incident Review Center, ensure and confirm that the events are indeed gunfire. They can append the alert with other critical intelligence such as whether a fully automatic weapon was fired or whether there are multiple shooters. This entire process takes less than 60 seconds from the time of the shooting to the digital alert popping onto a screen of a computer in the 911 Call Center or on a patrol officer’s smartphone or mobile laptop.

### 3. What types of cities use ShotSpotter?

ShotSpotter is used in more than 100 cities and is highly regarded by law enforcement as a critical component of gun violence prevention and reduction strategies. ShotSpotter protects a wide range of city types and sizes ranging from urban metropolitan cities such as Chicago and New York City; to medium-sized cities such as Boston, Denver, and Oakland; and small cities with populations less than 50,000 such as Richmond, CA and Pleasantville, NJ. A list of all ShotSpotter cities can be found [here](#).

### 4. How effective is ShotSpotter?

Gunshot detection by itself is not a panacea for gun violence, but if used as part of a comprehensive gun crime response strategy, it can contribute to a reduction. The vast majority of cities that have adopted ShotSpotter have done so as part of an overall strategy and have seen great value and experienced positive outcomes such as reduced gun violence, an increase in arrests, and an improvement in police-community relations. Please visit [Results](#) for more details.



## **5. How accurate is ShotSpotter's gunshot detection solution?**

The ShotSpotter system is highly accurate at detecting outdoor gunshots. In 2019 the system had a 97% aggregate accuracy rate across all of our customers including a very small false positive rate of less than 0.5% of all reported gunfire incidents.

## **6. Has the system always been this accurate?**

ShotSpotter's gunshot detection process has undergone many improvements over the years. Two notable changes that have significantly improved accuracy include the creation of the Incident Review Center (IRC) in the early 2010s as an additional step of human review after machine classification. The IRC is a 24x7 facility staffed by acoustic experts who review the incidents provided by the machine classifier prior to sending alerts to police. The second advancement was a more recent technological breakthrough that converted multiple features of an audio event into a set of visual displays that are combined into a single image mosaic. This [patented](#) approach enables the system to leverage "deep learning" neural networks that typically identify and classify images, not sound. This has resulted in significant improvements in machine classification accuracy and improve the ability of the system to distinguish between gunshot and non-gunshot sounds such as fireworks, construction work, and car backfires.

## **7. Does ShotSpotter listen in on private conversations?**

ShotSpotter has developed its technology and policies to enhance public safety while respecting individual privacy. The system has been reviewed by NYU's Policing Project in an independent [audit](#) where they had full editorial control of the publication and concluded there is "very minimal risk for human voice surveillance."

Please visit our privacy protections [page](#) to learn more about what ShotSpotter does to protect the public and a more comprehensive discussion of this important topic.

## **8. Does ShotSpotter have video monitoring capability?**

No. ShotSpotter is an acoustic-based system, but it is designed to integrate with widely used video monitoring systems. ShotSpotter can integrate by sending an alert to a video management system, which can then use the information to pan, tilt and zoom an IP addressable camera in the appropriate area or direction.

ShotSpotter has an optional API that [integrates](#) gunfire data with devices like cameras to instruct them to turn in the direction of detected gunfire. The company has integrated with VMS, LPRs, real-time crime center software, CAD and other systems.



## 9. Does ShotSpotter replace police officers?

Today's police departments need both manpower *and* technology. ShotSpotter is a tool that augments the existing personnel to improve police response time and quality of response. By pinpointing the precise location of gunshot incidents and tracking geographic patterns of gun violence, law enforcement resources can be deployed more effectively and more proactively.

## 10. How much does ShotSpotter cost and what does it include?

ShotSpotter is an affordable, cloud-based service with an annual subscription fee that covers valuable services, as well as licenses and maintenance. The subscription fee varies based upon the scope and complexity of a customer's targeted coverage area. There is a one-time fee for service initiation and customer onboarding. A ShotSpotter subscription includes:

- **Gunshot Alerts** – delivered 24/7/365 to desktops, mobile phones or patrol car MDTs within 60 seconds of trigger pull. Alerts uniquely provide precise location of incident, number of rounds, audio of gunfire, and tactical intelligence such as “multiple shooters” or “automatic weapons”
- **Apps for Dispatch and Patrol Officers with Unlimited Number of Users** – to receive and review alerts
- **Incident Review Center** – Staffed 24/7/365 by trained acoustic experts who review and classify gunfire to minimize false positives or negatives and add tactical data
- **Investigative Lead Summary (ILS)** – provides useful details about the location, timing and sequence of each shot fired during an incident immediately after it happens. Helps to find shell casings and arm officers with powerful data to conduct witness interviews and confront suspects on scene.
- **Insight** – software application that provides details about prior gunshot incidents useful for investigation and analysis. View, filter, sort, report, and transform historical gunshot data into meaningful insights, ultimately informing strategies for reducing gun violence.
- **Detailed Forensic Reports** – court-admissible evidence for trial that includes the location and sequence of each shot fired during a gunshot incident.
- **End User Training, 24/7/365 Technical Support and Software Upgrades**
- **Customer Success Program** – a team of former law enforcement executives, analysts and trainers are available as part of the ongoing subscription to assist the agency in utilizing the full potential of the system.

## 11. How is ShotSpotter data being used in court?

District attorneys and federal prosecutors rely on ShotSpotter evidence to assist them in prosecuting gun crimes. ShotSpotter provides Detailed Forensic Reports (DFR) as evidentiary documents which include precision positioning calculations of each gunshot, exact timing of shots, and map placements of firing locations for every shot fired. This evidence has received favorable rulings in Daubert and Frye challenges, and as a result has been used in trials at both



the local and federal level. There is no additional charge for ShotSpotter DFRs. ShotSpotter also provides expert witnesses to present the data at trial which is an optional fee-based service. Details on these services are available on the Forensic Services [page](#).

## **12. What other products does ShotSpotter have?**

In the last few years, ShotSpotter has taken its market-leading gunshot detection technology and adapted it to help protect America's campuses and universities with [SecureCampus™](#) as well as corporations, government buildings, hospitals and highways with [SiteSecure™](#).

In addition, the company offers [ShotSpotter® Connect™](#) patrol management software that strategically directs patrol units on a shift-by-shift basis to the areas of highest crime risk based on AI-driven analysis. The service also gives command staff better information about the location and activities of their patrol resources.

## **13. Is ShotSpotter available outside the U.S.?**

Yes. ShotSpotter is currently operating outside the U.S. in Cape Town, South Africa and in Nassau on the Island of the Bahamas. The technology can be adapted to work in many international locations and the company has stated plans to expand into Latin America.