PHOENIX POLICE REDUCE GUN VIOLENCE

New FLIS gun-shot detection system catches criminals fast.

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(December 15, 2021 - Phoenix, AZ) Today, the City of Phoenix Police Department launched a new, low-cost, open-source, gun violence reduction system - the Firearm Location and Interdiction System (FLIS). FLIS combines acoustical and visual sensors, data analytics and omni-channel data access to help Phoenix police officers and citizens identify perpetrators of gun crimes. FLIS is designed to help the police and community collaborate to reduce gun violence across Phoenix communities.

Over 2,000 gun incidents occur in the City of Phoenix each year and the rate of gun violence is increasing according to EveryStat for Gun Violence. Annual gun violence is estimated to cost Arizona taxpayers $263.2 million. According to the CDC, 1,136 people died of firearm injury in Arizona in 2019. Getting the right information to the right officers at the right time is critical to identifying, catching, and prosecuting offenders. Existing gunshot detection systems have a delay between the time a gun is fired and when patrol officers receive the alert. By the time responding officers get to the scene, the offenders have fled. The cost of other systems prevents the wide scale deployment and limits effectiveness. These issues prevent police from apprehending offenders.

With FLIS, Phoenix PD uses a new approach. Using acoustical sensors with an algorithm, the police are able to generate more information with greater accuracy and timeliness. Then by layering on advanced data analytics, the police are able to access a universe of location, cell-phone, social media and meta-data to quickly identify clues, trends, and relationships. Lastly, FLIS leverages a digital operations center to share information across departments and the community to identify and locate suspects. Because of FLIS's low cost, it is easy to deploy in larger areas than traditional systems making it even more effective and equitable in the fight to reduce gun violence.

"Gun violence happens in an instant, can impact people forever and can be hard if not impossible to solve", said Commander Tom Jones of Gun Crimes Intelligence Bureau. "For the first-time in my twenty years on the force, I feel like I have the upper hand, like I have new super powers to find bad guys and girls and get them and their guns off the streets of Phoenix. The intelligence FLIS provides our patrol officers and investigators is quick, accurate and effective. This is a game changer for reducing violence."

Phoenix deployed FLIS by installing low-cost, low maintenance acoustic and visual sensor arrays across the city and connecting them to a long-range LoRa communications network. Officers then installed the FLIS application on their mobile phones, tablets and computers. FLIS notifies officers when a gun-shot is fired and provides audio, video and associated location data to the application. Investigators are able to use the application to access the universe of data associated with the incident location and other evidence like license plates, forensics, and known associates.

"Before FLIS when I responded to a report of shots fired, I had no idea what I was getting into - how many people, what types of guns. All of that," said Patrol Officer Maria Lopez. "The first time I got an

alert it had video of the car the perps were in and the direction they were headed. They were so surprised when we got them. We got the gun and everything."

For more information please visit www.FLISgunshot.com

FLIS Frequently Asked Questions (FAQ)

1. What are we building and why?

The City of Phoenix Police department is building FLIS - a low cost, open source gunshot detection system. FLIS solves problems with existing gunshot systems by making it possible to deploy citywide and reduce the time it takes for officers to receive alerts.

2. How does FLIS work?

FLIS uses acoustical sensors that are deployed on street poles, on buildings, bridges and other infrastructure. The sensors use a LoRa network to transmit signals to the Internet and to a software application used by officers. When a firearm is discharged, the sensors register the time and location of the activity which is then shared with officers.

3. What types of sensors does FLIS use?

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4. What type of network does FLIS use?

FLIS can be deployed using different typologies from LTE to WiFi. The PHX deployment uses a LoRa network.

5. How big of an area is FLIS deployed in?

FLIS is deployed all across the city of Phoenix.

6. How many sensors are required per square mile?

Every deployment is different due to housing density, built environment and geography, but the standard deployment is one sensor per quarter mile or sixteen per square mile. The sixteen sensors report back to one gateway.

7. Can the community access any FLIS information?

The information is under a strict security policy and is not available to the public. However, the Phoenix Police Department will publish a report on its use and effectiveness in order to provide transparency to the public. Ideally the system will be used to develop new community collaborations.

8. What does the FLIS application do?

FLIS monitors Phoenix and identifies the sound of gunshots. When a FLIS sensor identifies a gunshot the location is sent to the Phoenix Police Department.

9. Where is FLIS data stored?

FLIS data is stored securely in a Phoenix PD controlled cloud account.

10. What data sets does FLIS use?

FLIS uses mapping and location data along with sensor data.

11. What laws, regulations and conditions are applicable to FLIS?

FLIS must respect the privacy of citizens and fall under state guidelines.

12. What products and services does FLIS use?

FLIS uses a variety of products and services, ranging from several types of sensors and cloud services.