

SoundThinking, Inc., is developing a new gunshot detection and location system targeted for critical infrastructure facilities such as utility substations. We are seeking your agency's assistance in supporting a live fire test (LFT) of this system. The LFT will include firing live rounds from a few different firearms into a bullet trap at multiple positions in relation to a small acoustic sensor array to be temporarily installed on site. We are asking that the agency provide range master, firearms, ammunition, bullet trap, and any additional patrol units that may be needed to secure the area for the test.

We would like to conduct this test at Cooper Stadium (1155 W Mound St, Columbus, OH). We would like to reserve two consecutive days for testing, though testing may be completed on the first day. The second test day may not be needed. It is estimated that the fire team will only be needed on-site for a few hours each test day. A proposed schedule is provided below. We are available as early as the week of September 11th to conduct this test, and ask that the agency confirm this week or provide an alternate week shortly after.

Draft schedule:

- Travel day: SoundThinking team arrives in Columbus
- Test day 1 (support from agency):
 - Morning: Install sensor array at Cooper Stadium and confirm system is ready for testing
 - Afternoon (support from agency): Conduct LFT and determine if second day of testing is needed
 - Evening (support from agency): If second day of testing is needed, leave sensors installed over night (patrol watch requested)
- Test day 2 (support from agency):
 - Morning: Confirm system is ready for testing.
 - Afternoon (support from agency): Conduct LFT.
 - Evening: De-install sensor array and ship back to HQ
- Travel day: SoundThinking team leaves Columbus

The agency range master will be responsible for firing live rounds into the bullet trap at each firing position. It is currently requested we use the following or similar calibers for the LFT: (rifle) 7.62 mm or 5.56 mm, (handgun) .45 Cal, 9 mm, and .22 Cal. At each firing position, each firearm will be fired multiple times in discrete firing events. The SoundThinking LFT manager will direct the range master when we are ready for each firing event. The firing schedule for each firearm at each firing position is below. Estimate a minimum of 12 rounds per firearm per firing position for 5 total proposed firing positions (60 round total min per firearm).

- Multiples:
 - 3 rounds fired in sequence
 - 3 rounds fired in sequence
 - 3 rounds fired in sequence
- Singles:
 - 1 round fired
 - 1 round fired
 - 1 round fired

The firing sequence above must be done for each firearm at each firing position as the method to test the primary goals of the LFT. In addition, it would be beneficial to do limited testing to meet secondary goals of the LFT. This would include firing 3-round bursts or fully automatic bursts for a single firearm at one or two (near / far) firing position(s). If possible, we would also like to fire into the side of a sand-filled 55-gallon steel drum to be placed in the center of the sensor array to detect bullet impact. This could be done with a single firearm (rifle) at a single firing position (far).

The bullet trap should safely contain fired ammunition without reducing the amplitude of the muzzle blast. Bullet traps requiring the muzzle to be placed into a chamber will not work. The trap must allow the range master to fire in a parallel or near parallel relation to the ground. The range master will stand 15' back from the bullet trap, firing in the direction of the sensor array.

Screenshot of requested test location. Yellow box represents on-site sensor array. Labelled (FP) red pins represent each firing position. Direction of fire needs to be toward the sensor array. We can change the location of the array and orientation of firing positions to better suite safety concerns as needed. The sensor array will occupy 2 acres. Firing positions will be from 25 m out to 225 m away from the perimeter of the sensor array.

