Command helps test new gun shot location system

A capability under evaluation by U.S. Joint Forces Command uses the sounds of gun and mortar fire and triangulation to help warfighters locate hidden enemy combatants.

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USJFCOM Public Affairs

(NORFOLK, Va. – June 21, 2007) –- A technology tested by U.S. Joint Forces Command (USJFCOM) designed to locate enemy combatants by the sound of their weapons is ready for testing in a combat environment, according to USJFCOM officials.

ShotSpotter, a technology that could help locate insurgents by zeroing in on the sound of their gunfire is making great strides, according to the USJFCOM Joint Intelligence Directorate's Ted Ferrazano.

The ShotSpotter system is an acoustic gun and mortar detection system that uses sound triangulation to detect and locate the origin of weapons' fire from a variety of small arms and crew-served weapons, added Ferrazano.

On the battlefield, ShotSpotter works by combining input from individual sensors worn by troops, sensors on mobile units, and sensors in fixed locations to triangulate the origin of small arms fire. The information is conveyed to a laptop or PDA, which will show the location of the shot on a digital map in near-real time.

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In today's battlefield, ShotSpotter can prove invaluable, Ferrazano added.

"Especially in an urban environment where you have all types of noise and it may not be clear in the heat of battle where the shots are coming from, ShotSpotter will tell you so you can react accordingly to the direction of the gun fire," said Ferrazano.

Originally designed for use in law enforcement, military use of the product has come about only recently and with the help of USJFCOM, who has been evaluating ShotSpotter since 2004, said Ferrazano.

After initial evaluation, USJFCOM suggested some improvements to ShotSpotter. One improvement, integration of the 'Cursor on Target' data interoperability schema, allows ShotSpotter data to be shared better and faster with other dissimilar sensors over a network, said Ferrazano.

USJFCOM also prompted development of a number of filters that allows ShotSpotter to distinguish between small arms fire and the copious amount of background noise that exists in an urban environment.

"ShotSpotter is currently being evaluated by the Army Research, Engineering and Development Center" and vetted by the Army Counter-sniper Integrated Concept Development Team, said Ferrazano who also said the system will be further tested during Empire Challenge, an exercise designed to demonstrate and evaluate intelligence gathering techniques and technology for joint and coalition warfighting operations, at China Lake, Calif. in July.

Earlier tests by law enforcement agencies showed a 90 percent accuracy rate for ShotSpotter, said Ferrazano.

The ShotSpotter system is currently in use with the police forces of over a dozen U.S. cities and with federal agencies such as the FBI and U.S. Attorney's office. On the military side, U.S. Air Force security forces are employing ShotSpotter in a forward operating base defense role.

"We want to leverage the flexibility of the ShotSpotter system, to broaden its target detection aperture," said Ferrazano. "Integrating the ability to detect not just the sound of a gun shot, but also the muzzle flash as well, as the next near term improvement to the system."