



# CASTING A WIDER NET:

**Jim Viscardi** explains how ferromagnetic detection provides more effective and efficient ways for mass screening

**L**ive events at large venues like arenas, stadiums or convention halls – whether they involve wrestlers breaking chairs over each other’s heads, Axl and Slash letting bygones be bygones and reuniting Guns ‘n’ Roses, your favourite soccer team annihilating the opposition 5-1, or a convention involving anything from politics to food to technology – are exciting affairs that channel the camaraderie of the crowd into a powerful

collective energy. But they are also extremely vulnerable to threats.

Terrorists and other malefactors have known for centuries that any large gathering of people has inherent vulnerabilities in which they can prey: Crowds make it hard for security to keep track of any single person or spot unusual behaviour, and the number of people congregated in one space amplifies the impact of any attack.

In the last couple of years alone, we have seen ill-

intended individuals and terrorists attack mass events, such as the Route 91 Harvest Festival in Las Vegas, Nevada and the Ariana Grande Concert in Manchester, England, which killed over 100 people combined and harmed several more. According to a 2016 terrorism report by the National Consortium for the Study of Terrorism and Responses to Terrorism (START), there were more than 13,400 terrorist attacks that took place around the world, which resulted in more than 34,000 total deaths, including more than 11,600 perpetrator deaths. In North America there were a total of 72 attacks killing 73 people, which included the Pulse night club attack in Orlando, Florida. In the Western Europe regions, there were 269 terrorist attacks that took the lives of 238 people.

## SCREENING MASS GROUPS

Terrorist attacks have been a scary reality in our society, yet there are new methods that can prevent these individuals from causing harm and creating safety for event attendees. A way to prevent damage from these terrorists and any ill-intended individuals is a change in the way security personnel use some of the current technologies. For example, there are still many outdated security methods being used that are no longer as effective when screening mass groups of people at events like concerts, sporting events, etc.

## SCREENING CAN BE AS OBVIOUS OR CONCEALED AS PERSONNEL PREFER FOR EACH SITUATION

In recent years, organisers of large events have augmented the security methods they use to protect a venue, using both walk-through metal detectors and hand wands, and deploying dog and police units to patrol the lines to enter security. But these current methods share a universal flaw: to be caught, evildoers have to be on the verge of actually entering the venue with hundreds of other people, which means they can still cause a massive amount of destruction.

With music festival, travelling and big sporting event season coming up this summer, security experts and event organisers will need to keep in mind the different security methods available for more efficient and effective screenings. Realistically, some of the current methods are no longer enough and there are new ways to expand reach that can help prevent terrorists from attacking innocent people.

Conventional walk-through metal detectors are a compromise between effective screening and high throughput, as they successfully detect metal objects, but only can screen about five or six people each minute. They are generally placed 10 to 20 yards from a venue’s front façade, either just outside or just inside, to screen people as they enter the facility. Hand wands are used for anyone that sets off the walk-through detector as a secondary screening method for confirmation.

Many facilities also use observational methods to screen, such as drones, CCTV, security officers or police patrols looking for suspicious behaviour and explosives-sniffing dog units patrolling the area.

Each of these methods has intrinsic limitations. Observational security methods are just that – observation based, not detection based. They rely much more heavily on human factors that introduce greater degrees of error and chance, and positive visual identification of a suspicious threat requires a relatively close proximity to observe the threat. They’re also slow and laborious.

Walk-through detectors and wands will catch someone trying to enter a facility with a weapon, but by the time they do, it may be too late – a terrorist will already be well within proximity to do a lot of damage. Bad guys don’t need to actually enter the venue; they just need to get close enough to injure or kill a large number of people. That can happen – and has happened, such as with Manchester Arena bombing in 2017 – right at the security point, where a terrorist will be surrounded by dozens or hundreds of people and 10 to 20 yards away from the critical asset: the interior of the venue.

Security personnel are aware of these pre-security-screening vulnerabilities around the perimeter of the venue. What they haven’t had until recently is a way to screen mass amounts of people for weapons of mass casualty as far away from the critical asset as they can, and as far away from densely populated areas as they can, all while not impeding throughput resulting from the requirement for patrons to divest their possessions.

## KEEP YOUR DISTANCE

The far perimeter of a venue is an ideal place to screen for weapons of mass casualty. Most of the time, a terrorist is trying to get closer to the immediate perimeter of the venue, to inflict the most damage to large groups of people waiting to get in; farther away, event attendees are walking towards the entrance and thus are more dispersed, not standing in clusters or lines. This advance screening is possible using ferromagnetic detection systems (FMDS).

In the most basic terms, FMDS uses passive sensors that evaluate disturbances in the earth’s magnetic field made by something magnetic moving through its detection zone. Everything else is invisible to it; it doesn’t see people, clothing, backpacks, purses, etc. Nothing can be used to shield the threat, because FMDS doesn’t detect metallic mass; it detects a magnetic signature, down to a millionth of the earth’s magnetic field.

It is also highly accurate – there is no false alarm rate, because it is programmed to find only what security personnel need to find (eg, a weapon). Although it is a passive technology, it is more effective and reliable than using observational methods to screen a perimeter as the technology will never miss something the way a human might.

An important point is that the system only works on moving objects. This makes it immune to environmental conflicts such as rebar that would trip up conventional metal detectors, and allowing people to be screened quickly and unobtrusively without stopping to divest their possessions as they walk toward a venue – up to 50 or 60 people a minute. FMDS does not need people to be organised into lines or groups; it simply detects a magnetic signature on anything that passes.

**A commuter walks through a security screening system being tested at the World Trade Center Transportation Hub PATH Train station**

It runs on batteries – there is no need for an electricity source, as with a walk-through detector – and can be placed on just about any form factor (a pole, a stand, etc.). This gives security personnel flexibility when deploying FMDS, allowing them to create a wide perimeter around a venue without worrying about portability or a power source. Screening can be as obvious or as concealed as personnel prefer for a particular situation, based on the form factor they select.

**AN EXTRA LAYER OF SECURITY**

All of these combine into a solution that creates a way to close a gap in mass screenings at large events, by expanding the secure perimeter and creating a highly accurate way to detect weapons of mass casualty farther away from a critical asset and large crowds. It does not replace screening for smaller items necessarily, and all large venues should use a layered security solution that also deploys tactics like roving security guards, walk-through metal detectors and hand wands. FMDS simply gives the opportunity to add a layer of security where there currently is not an effective solution.

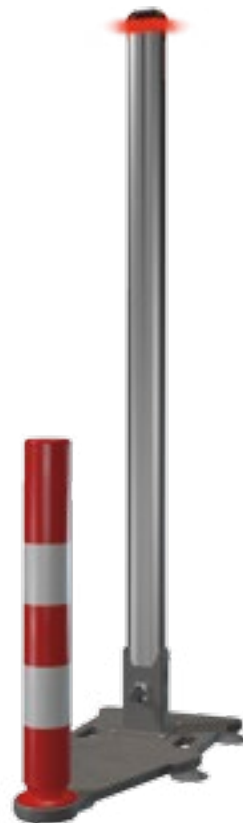
Pessimists sometimes muse the world is getting more dangerous with each passing year, and that technology is at least partially responsible for both the breadth and depth of the increasingly creative

ways bad guys harm people. There are hundreds of mass events that occur throughout the year all over the world that require new and creative ways to increase security initiatives that help protect citizens from any potential harm. Fortunately, we live in a time where new and advanced technology is consistently being created and implemented in order to help prevent terrorist attacks from occurring in some of the most vulnerable places.

**FMDS IS PROGRAMMED TO FIND ONLY WHAT SECURITY PERSONNEL NEED TO FIND, FOR EXAMPLE: A WEAPON**

But some technologies are also responsible for helping to fight against those threats and make the world safer, and FMDS is one of those. By providing a foolproof method of detecting weapons of mass casualty before terrorists get too close to an event venue, FMDS gives event security personnel a way to better protect large events, making them less dangerous and keeping people safe. As security experts, we must continue to work hard towards finding and creating the best technology to protect our communities from any harm ●

**Jim Viscardi** – Metrasens Vice President, Global Security – has 20 years of experience in the Homeland Security and Protection industry, with expertise in security for events, correctional facilities, federal and military sites and mental health facilities.



**FMDS can be used to expand the security perimeter and quickly highlight any concerns**

