



National Protective
Security Authority



An Introduction to NPSA Gunshot Detection System (GDS) Evaluations

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Introduction

This document presents an overview of the NPSA evaluation process for Gunshot Detection Systems (GDS).

This document does not cover Military or Police use of GDS.

This document is primarily focussed on indoor GDS's as part of NPSA's wider Marauding Terrorist Attack programme of work.

This document should be considered in conjunction with NPSA's guidance on Marauding Terrorist Attacks.



NPSA Evaluation Programme

NPSA began investigating the use of Gunshot Detection Technology in April 2016. This programme was setup to conduct research into what systems were commercially available. Initially this work was to determine if such a technology could assist in the early minutes of a marauding terrorist firearms attack. Engagement was made with several US manufacturers, primarily because the US market is the largest in the world for GDS.

A decision was made to focus on indoor GDS as this was the initial locality where most benefit could be seen to be achieved in the event of a marauding firearms attack.

There was no known standard for GDS systems (indoor or outdoor), so NPSA have created the first indoor GDS standard. This standard follows NPSA's detection philosophy of high detection rates, whilst maintaining low false alarm rates.

The standard is made up of 3 main elements:

Soak Testing

A manufacturer is asked to commission their system into a suitable commercial site (there is suitable footfall of traffic and day to day on goings to make it as close to a normal working building as feasible) following the same install and commissioning procedures they would if a commercial agreement for installation was in place for a site.

The system is then monitored for false alarms or system failures for that 3 month period. This provides a level of assurance that a) the system does not issue false alarms induced by normal office ambient noise and b) does not have fundamental stability issues requiring intervention from IT or manufacturer support staff.

Induced false alarm testing

Different sources of sounds and light are introduced to the system in an attempt to create a false alarm.

While there is a strict definition of false alarm that would limit a GDS to only detecting a live gunshot, NPSA has made allowance in the testing programme to allow for the detection of significant threats, such as the detonation of an IED or the discharge of a blank fire weapon. However, the system should explicitly NOT detect common items such as the sound of gunfire on TV, party poppers, construction equipment or fireworks used outdoors.

Live fire testing

A varied selection of weapons, proven to be available in the UK and likely to be used in a marauding terrorist firearms attack, are discharged within the manufacturers advertised range of sensor detection from differing distances and angles. This determines the true detection rate of the system being tested.

Only on successful completion of the entire programme and after relevant reports are analysed will the product be eligible for entry into the NPSA CSE (Catalogue of Security Equipment).