



SafeZone-edge

FREQUENTLY ASKED QUESTIONS

Information for resellers
and installation partners

MAY 2013 | VERSION 1.0



Purpose of Document

This document is an introduction to SafeZone-edge. It covers the unique characteristics of the SafeZone video analytics engine, along with the specific features of the edge-optimised application. For technical specifications, please refer to the SafeZone-edge Product Sheet and for product operations, please refer to the SafeZone-edge Quick Start Guide and Setup Guide. Further details about SafeZone-edge can be found in the Technology Paper. Please note that some of the features in this document may only be available on future releases.

Contents

Introduction to SafeZone and 'Edge-Intelligent' Products	page 3
Characteristics and Advantages (FAQs)	page 4
Applications and Usability (FAQs)	page 7
Commercials and Support (FAQs)	page 8
Installation and Configuration (FAQs)	page 10

Further Information

For further information about SafeZone, please contact Digital Barriers or your reseller:

Digital Barriers | Edge-Intelligent Products

WTC, Business Center - Entrée J CS 50255, 1300, route des Crêtes,
06905 Sophia Antipolis Cedex, France | + 33 (0) 492 38 84 30

Digital Barriers | UK & Europe

Enterprise House, 1-2 Hatfields, London SE1 9PG, UK | +44 207 940 4740

Digital Barriers | North America

1400 Key Boulevard, Suite 720, Arlington, VA 22209, US | +1 703 567 1858

Digital Barriers | Asia Pacific

79 Anson Road, #15-03, Singapore 079906 | +65 6325 6018

Digital Barriers | Middle East

Office 902, Thuraya Tower 1, Dubai Internet City, Dubai, UAE | +971 4 421 8906

Copyright Notice

This document has been prepared by Digital Barriers Services Limited (DBSL) and, subject to any existing rights of third party, DBSL is the owner of the copyright of this work. Its contents may not be copied or disclosed to any third party without the written permission of DBSL. This document makes descriptive reference to trademarks that may be owned by others. This not an assertion of ownership of these trademarks by DBSL and is not intended to represent any association between Digital Barriers and the lawful owners of those trademarks.

Introduction to SafeZone and 'Edge Intelligent' Products

SafeZone-edge is a world-leading automated intrusion detection system that combines performance, simplicity, resilience and cost-effectiveness. It can be installed onto devices from leading manufacturers. This document addresses frequently asked questions on the product and the channel partner proposition. For more information on the SafeZone engine, please refer to the SafeZone-edge Technical Paper. For further information on the partner proposition, please refer to the Edge-Intelligent Partnerships brochure.

World-class automated intrusion detection

When selecting an automated intrusion detection system, organisations are often faced with an underwhelming choice: variable detection rates and persistent nuisance alarms; or complex camera calibration, costly licenses and server infrastructure? Not a situation to generate wholehearted enthusiasm for video analytics among operators or installers with the task of deploying and testing such automated intrusion detection solutions.

For both system installers and operators, SafeZone-edge offers a compelling alternative. Its exceptional detection performance is equivalent to server-based video analytics and is suitable for deployments on challenging external perimeters as well as internal sterile zones. An innovative, automated camera calibration function and simple approach to installation and setup is designed to minimise deployment effort, complexity and cost.

SafeZone-edge is certified by the UK Home Office i-LIDS® scheme as a primary detection system for operational alert use in sterile zone monitoring. This means it can be used as the sole system for monitoring sterile zones in critical sites. It also makes it one of the few video analytics systems to achieve this level of accreditation and one of even fewer truly edge-based systems to receive the global benchmark of primary certification.

The 'Edge-Intelligent' product proposition

Offered at a very affordable MSRP and highly competitive trade prices, SafeZone-edge also provides an exceptional offering for distributors and value added resellers (VARs). Digital Barriers works with distributors and VARs to make SafeZone-edge available to system integrators and installers worldwide – and the Edge-Intelligent Partnerships Programme enables partners to offer a compelling video analytics proposition.

Installers and system integrators have access to an affordable multi-channel intrusion detection system they can 'price to win' against more expensive and more complex server-based solutions. Edge-Intelligent products from Digital Barriers are designed for simple installation and operation with intelligent setup and configuration tools inbuilt. As such, support needs are minimal – and in most cases resolved on a self-service basis. This makes SafeZone-edge extremely simple to install and use – as well as sell and support.

A. Characteristics and Advantages

A1 What is the analytical engine behind SafeZone?

SafeZone is based on an advanced video analysis engine that was developed for sophisticated intrusion detection and sterile zone monitoring applications. This engine was specifically designed to overcome the limitations of conventional video analytics products by mitigating persistent nuisance alarms (caused by lighting and environmental changes) and ensuring more accurate detection. The original server based version of SafeZone was ported to edge devices by reducing the processing requirement by a factor of 400 – whilst preserving the intelligent scene analysis.

A2 What does 'edge-based' mean and how does it differ to other similar solutions?

Edge-based surveillance applications run on the processors of video cameras and encoders, outputting alarms and meta-data direct from these devices. This means they do not rely on servers to process information, eliminating the need for costly, complex and failure-prone back-end IT infrastructure. Because they run on a single processor, such applications are also simple to deploy. Since embedded processors on edge devices are typically much less powerful than servers (and often perform additional processing tasks), applications must be optimised for ultra-efficient processing – requiring advanced edge-intelligent software engineering.

A3 What features does SafeZone-edge include that make it unique?

SafeZone-edge uniquely combines accurate detection performance, false alarm mitigation, simplicity of deployment and low cost of ownership. In comparison to both server-based and other edge-based video content analysis (VCA) applications, SafeZone-edge excels in all of these aspects and the combination of benefits that it provides. For example, its detection performance is certified under the globally recognised i-LIDS scheme and it is the only VCA product to incorporate a unique single/multi-camera auto-calibration feature to reduce installation effort.

A4 What is i-LIDS and what does it mean for SafeZone-edge performance?

As a leading proponent of CCTV technology in response to crime and terrorism, the UK is a world-leader in the application of video analysis technology. The Imagery Library for Intelligent Detection Systems (i-LIDS) initiative is a UK Government initiative to facilitate the development and selection of video analytics systems that meet Government requirements for security operations.

i-LIDS offers a video library to benchmark video analytics performance against a number of security scenarios. The scenario that SafeZone-edge is designed for is 'sterile zone monitoring', with alarm events consisting of the presence of people in a sterile zone between two security fences. Its 'primary certification' qualifies it as it as the sole security measure – unlike systems with only 'secondary certification'.

For further details, visit: www.gov.uk/imagery-library-for-intelligent-detection-systems

A5 How does SafeZone-edge differ from server-based video analytics?

For typical security and sterile zone monitoring scenarios, SafeZone-edge delivers comparable detection accuracy to server-based VCA systems. Its processing engine retains the intelligent algorithms of the original server-based SafeZone product, whilst radically reducing the processing requirement. SafeZone-edge is a fully featured video content analysis system with multiple user-defined detection scenarios and the ability to interpret and process complex scenes.

It is able to process visible-band as well as thermal inputs and can be deployed on encoders as well as cameras to support the introduction of video analytics into legacy analogue camera environments. It is also integrated with leading VMS platforms (including Milestone and Genetec*) to provide on-screen overlays and meta-data. However, unlike server-based VCA systems, SafeZone-edge is simple to deploy and does not require the installation of any additional IT infrastructure, which typically requires several servers to support multi-camera installations. In addition, there is no potential 'single point of failure' associated with a server.

A6 How does SafeZone-edge differ from other edge-based video analytics?

Edge-based applications typically imply reduced capability, since they are designed to run on an embedded processor and lack the computing resources of a PC or server. Furthermore, the processors on many IP cameras and encoders tend to combine core-processing tasks (such as video compression) with additional tasks (such as video analytics) that can limit their capability. These edge applications are often limited to video motion detection (VMD or VMD+) and are often prone to nuisance alarms – particularly if introduced into outdoor environments.

In contrast, SafeZone-edge has been derived from an advanced analytical engine that was designed for server operation. This has subsequently been optimised for ultra-efficient edge operation – with the processing requirement reduced by a factor of 400. This has preserved the critical 3D scene configuration, trajectory analysis of objects and AI engine that underpin accurate intrusion detection and false alarm mitigation. Unlike many other edge-based systems, SafeZone-edge is also able to run multiple detection scenarios concurrently on a single processor.

A7 How does SafeZone-edge differ from 'distributed' video analytics?

Distributed architectures are designed to overcome the limiting characteristics of server-based or edge-based systems. In particular, they aim to reduce the number of servers required in large multi-camera installations and share the processing load between embedded edge processors and a centralised server capability. This approach still requires a server infrastructure to be installed and maintained, making it unsuitable for smaller to medium sized sites. It also ignores the growing availability of improved processing power on newer edge-based devices. There is also an inherently more complicated installation when a server is involved.

* Some VMS integration features are only available in forthcoming product releases

A8 How does SafeZone-edge compare against competing VCA offerings?

Many alternatives exist in the video analytics market, whether they be video motion detection (VMD and VMD+) for edge-based operation, video content analysis (VCA) on edge-based devices or premium server-based or distributed VCA. In short, SafeZone-edge outperforms competitors across all these categories with its unique combination of detection accuracy, simplicity and cost-effectiveness.

In comparison to VMD and VMD+ products, SafeZone-edge is simply operating at another level of performance in terms of detection accuracy and nuisance alarm mitigation. For simple internal monitoring requirements, VMD and VMD+ can offer a cost-effective option – but for serious applications and perimeter security, the only practical option is a VCA solution. While some edge-based VCA systems will be certified as an i-LIDS® secondary detection system, it is extremely rare for an edge-based system to be certified as a primary detection system. SafeZone-edge is currently one of just three edge-based VCA systems to receive i-LIDS approval as a primary detection system. However, unlike SafeZone-edge, the other systems do not feature ultra-simple, multi-camera auto-calibration modes.

Server-based and distributed VCA offer relatively reliable detection accuracy with both i-LIDS secondary and primary approved systems available. However, these do not offer the simplicity of deployment of SafeZone-edge and typically cost more (sometimes significantly more) in terms of initial licence, installation and long-term cost of ownership. In addition, no server based or distributed VCA system has the level of automated camera calibration (or multi-camera setup) of SafeZone-edge. Of course in some instances, a server-based system maybe an appropriate option; for example where very long distance detection is required or there is a need to retrofit VCA to IP cameras that are not compatible with SafeZone-edge.

A9 For which devices is SafeZone-edge currently available?

The launch device platform for SafeZone-edge is the world-leading AXIS range of network video cameras and encoders. This currently includes devices based on the AXIS ARTPEC-4 processor and the AXIS Camera Application Platform (ACAP), which spans around 30 devices – including encoders. Specific models are detailed in the SafeZone-edge prerequisites information sheet and are subject to change. Support for ARTPEC-3 thermal devices will be provided in v1.5 of SafeZone-edge onwards.

A10 What future developments and improvements can be expected?

The v1.0 of SafeZone-edge packs in a lot of functionality and features to improve the user experience. The forthcoming v1.5 release will introduce a number of additional features at no charge – including extension of the automatic calibration assistant to multiple cameras, setup of alarm outputs and previewing of the live stream from within the native Setup Interface view, plus availability of meta-data within VMS applications. Details of product updates will be sent to partners.

B. Applications and Usability

B1 For which operational applications is SafeZone-edge most suited?

SafeZone-edge features four intrusion detection scenarios to address typical perimeter security and sterile zone monitoring requirements. It is designed for medium-range detection and is capable of operating in a range of challenging environments, including harsh weather and other demanding conditions.

Typical outdoor sterile zone monitoring applications might include: perimeter security at small/medium size commercial properties, industrial facilities/storage sites; the loading bay of a retail unit; high-value asset location e.g. car dealerships; other vulnerable or secure sites e.g. education campuses and sports facilities. It is also suitable for internal sterile zone monitoring applications, such as controlled zones in transportation hubs, hospitals, commercial facilities and other sites.

B2 How easy is it to incorporate SafeZone-edge into existing security setups?

SafeZone-edge is designed for seamless incorporation into existing security and surveillance setups. It supports full integration into Milestone and Genetec video management systems (VMS) and a range of alarm output formats can be used, depending on the native alarm outputs of the cameras or encoders. For example, SafeZone-edge is able to issue notifications via the AXIS electrical alarm output.

B3 What objects and situations SafeZone-edge is able to detect?

SafeZone-edge offers four security scenarios, based on detection of a person or vehicle (subject with a maximum length of 12m) in one or more defined zones. The scenarios include: intrusion (alarm on a subject entering a zone); passage (alarm on a subject passing through two or more zones in a given sequence); loitering (alarm on a subject remaining in a zone for longer than a pre-defined time); and zone-crossing (alarm on a subject entering zones without passing through others).

B4 What environments is SafeZone-edge suitable for?

SafeZone-edge is suitable for a wide range of environments and conditions. It is designed to overcome the many challenges associated with outdoor surveillance, including adverse weather effects, movement from background foliage, variable illumination and rapid changes in lighting (such as car headlights). It is also suitable for indoor environments with limited congestion (a person must be fully visible in the image when passing in a monitored zone) and where the zone to be monitored is not too close to the camera (>3m). SafeZone-edge is suitable for day/night use, automatically compensating for the passage from day to night.

C. Commercials and Support

C1 How is SafeZone-edge sold and distributed?

SafeZone-edge is available through a network of leading distributors and value added resellers (VARs). These organisations are members of the Digital Barriers 'Edge-Intelligent Partnerships Programme', which provides a range of tools for effective pre-sales support. The product is not available direct from Digital Barriers and channel distribution is a central principle of the SafeZone-edge proposition.

C2 Are trial licences available to evaluate SafeZone-edge?

Absolutely. The best way to appreciate both the performance and simplicity of SafeZone-edge is to trial the product – and compare it side-by-side against other video content analysis products. Trial licences are available from most distributors and resellers in the Edge-Intelligent scheme – or on request from Digital Barriers.

C3 How is SafeZone-edge priced and how does it compare to the market?

End user pricing to system integrators and installers is set by individual resellers. However for guidance purposes only, the product has a manufacturer suggested retail price (MSRP) of £169/€199. This is significantly below most conventional server-based VCA products – and is also lower than or comparable to edge-based VCA products. The combination of performance and ease of installation at this price point is a compelling proposition for both end customers and resellers.

C4 What is the Digital Barriers 'Edge-Intelligent Partnerships Programme'?

The Edge-Intelligent Partnerships Programme is designed to support distributors, resellers and installers of SafeZone-edge and other products. It includes a range of resources to aid sales and delivery – for projects both large and small. The key principles of the scheme are simplicity and inclusiveness with practical support. The programme is designed for leading trade organisations and installers across the security and surveillance industry. Edge-Intelligent products are designed for specialist system integrators with mission-critical requirements, through to more commercial installers that require effective, simple and affordable products.

C5 How does an organisation become a member of the Programme?

Unlike some channel partnership schemes, the Edge-Intelligent Programme is designed to be simple and inclusive for its members. The objective is to provide practical promotional backing, product updates and support resources to any organisations that are actively selling or seeking to promote SafeZone-edge or other edge-intelligent products from Digital Barriers. Basic registration is all that is required to become a member of the programme – and unlike many other similar schemes, there is no upfront training requirement or recurring certifications.

C6 How is SafeZone-edge installed and licenced?

Initial installation and licencing of the SafeZone-edge product is dependent on the device platform but the process is designed for simplicity. Since the application is embedded on a camera or encoder, there is no server-based processing capacity involved in installing, preparing or maintaining the application. For example, when deploying the application on the AXIS platform, software installation and licence key activation is performed through the SafeZone-edge Setup Interface.

Once the licence files have been installed, SafeZone-edge can be calibrated and setup. The SafeZone-edge Setup Interface incorporates a multi-camera installation feature that allows an installer to deploy the application onto several devices in a single click. For details on downloading and accessing installation and licence files, please refer to the Quick Start Guide that is appropriate to your device platform.

C7 What product support is available for SafeZone-edge?

SafeZone-edge is designed for extremely simple configuration and operation with an intelligent automated Setup Interface to minimise manual effort and input. As such, support needs are kept to an absolute minimum. Most questions or issues can be resolved through online self-service resources and FAQs – available to all registered members of the Edge-Intelligent Programme. In addition, a credits based system allows users to submit support questions and issues for investigation and resolution. A support site provides access to the latest product information.

C8 How does the support credits scheme work for SafeZone-edge?

Edge-Intelligent products, such as SafeZone, are designed to be simple to use as well as affordable. For many organisations, the freely available self-service support resources will be sufficient to troubleshoot typical issues or questions encountered during installation or operation. For others with more bespoke support needs or complex deployments, the credits based systems allows for 'metred' access to a team of product support engineers. This ensures that only the organisations that require this support level are required to pay for it, ensuring that the product price remains extremely competitive with no recurring maintenance or support fees.

D. Installation and Configuration

D1 How is SafeZone-edge configured for operation?

Configuring and operating SafeZone-edge is simple with the SafeZone-edge Setup Interface. This provides an automated, optimised workflow that allows an installer to carry out: application/licence installation; calibration of the camera to work with the analytics; definition of detection zones and scenarios; and alarm setup.

Unlike the complex and time consuming manual calibration associated with other VCA products, SafeZone-edge incorporates an advanced auto-calibration feature to significantly simplify and speed deployment – particularly when installing onto multiple cameras. This function automates the capture of information required to calibrate as well as the calibration processing itself, providing a single workflow. The minimum detection area is also automatically defined along with a default sterile zone. This creates a basic intrusion detection scenario with very minimal intervention and effort from the installer – and will be sufficient for many security situations. More advanced scenarios can be defined using an intuitive editor tool.

D2 What makes the SafeZone-edge calibration assistant unique?

In short, SafeZone-edge has redesigned the critical task of calibration around the installer. Instead of multiple screens and manually defined parameters, the Setup Interface incorporates an intelligent calibration assistant and workflow. This uses a brief video clip, recorded from each camera, to extract and process the necessary calibration information. This simply requires an installer to walk through the field of view of the camera, with the system able to detect the presence of the installer to trigger the start/stop of the recording and the subsequent processing step.

What is more – and what really marks SafeZone-edge out as unique – is its ability to automatically queue and calibrate multiple cameras using video captured from a single installer walkabout. Any cameras that for any reason fail auto-calibration are queued automatically for repeat capture, or are else manual calibrated using a simple, intuitive editor. This is the closest thing to ‘one click’ setup that is available on multi-camera VCA deployments – making SafeZone-edge truly class leading...

D3 How long does it take to install SafeZone-edge and configure it?

Installation and setup of SafeZone-edge is very simple and is performed through the SafeZone-edge Setup Interface. This enables the intuitive and quick setup of multiple cameras – typically taking around 7-10 minutes per camera, depending on the amount of time required for the installer to undertake each walkabout.

D4 Who can install and configure SafeZone-edge?

No prior expertise in video content analysis is required to install SafeZone-edge. Any system integrator or installer with experience in deploying video surveillance systems will be able to deploy the system easily using the setup assistant and the simple to follow Setup Guide. Additional references and training materials are freely available on the SafeZone-edge support site, following registration.

D5 Is there any special equipment required to deploy SafeZone-edge?

SafeZone-edge runs embedded on the compatible camera or encoder device – so there is no need to deploy server-based or PC-based processing capacity. A laptop or PC is required to run the SafeZone-edge Setup Interface (currently a client app). The minimum specification for the laptop or PC to run the Setup Interface is a Windows operating system (XP or Windows 7 or Windows server 2008 R2); an Intel Core 2 Duo processor (or better); and at least 1GB RAM of memory.

D6 What is the maximum range of detection for SafeZone-edge?

The maximum detection distance of SafeZone-edge depends on two criteria. The first is the focal length of the camera lens – where a higher focal length will allow a longer detection distance. The second is the minimum pixel size a human must be in the image in order to be detected, which broadly equates to a pixel height for a standing person of at least 10% of image height. Based on compatible cameras, this equates to a range of around 30-50m for a typical camera. For encoders, the maximum range is up to around 250m but depends on the camera lens.

D7 How does SafeZone-edge report alarms?

SafeZone-edge provides a number of alarm output formats to ensure support for a range of operational security setups. The first version of SafeZone-edge for AXIS exploits native alarm outputs and is also integrated with Genetec and Milestone VMS platforms. AXIS alarm outputs that can be utilised include: user-configurable text notifications via TCP; sending of http requests with user-configurable content to a URL address; saving of images (before and after alarm event) to an FTP server; sending a video clip of alarm event in an email; and activation of electrical output.

B1 What are the limitations of SafeZone-edge?

Despite its resilience to a range of external effects, SafeZone-edge may not always be suitable in certain environments or situations. This is typically where false detections or missed detections may result from: vegetation that is moving close to or immediately in front of the camera; a plastic bag or flag that is moving in the detection zone; inadequate scene lighting; or insects in front of the camera.

B6 What updates and upgrades will be made available for SafeZone-edge?

During the support life of each generation of SafeZone-edge product (e.g. v1.x), product fixes are free and simple to download, prior to uploading onto the camera or encoder. Upgrades to the next generation release of the product (e.g. v2.x) require the purchase of a full licence and reinstallation of the product.