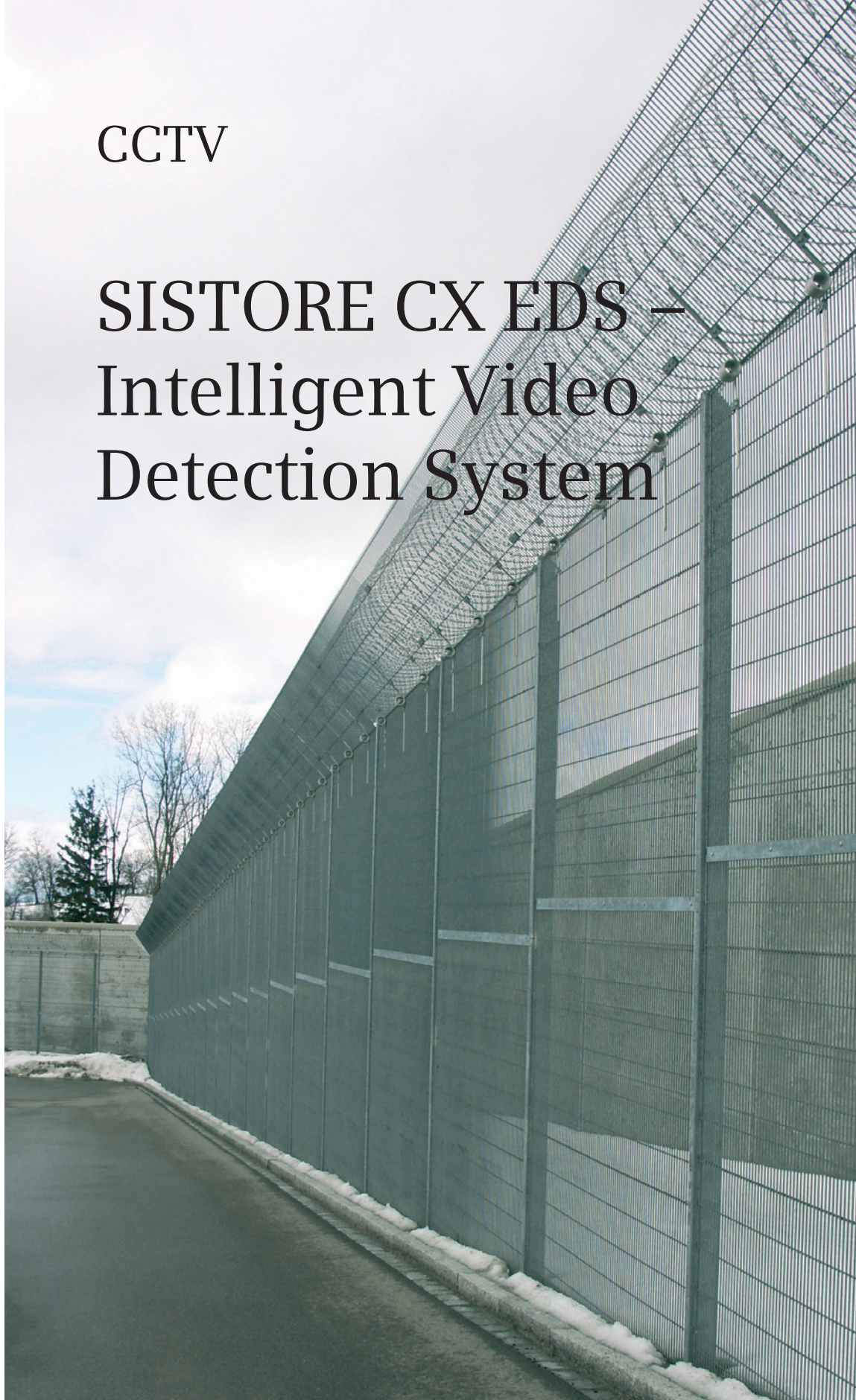


CCTV

# SISTORE CX EDS – Intelligent Video Detection System





## Professional outdoor video motion detection system with object tracking

SISTORE CX EDS is a radically new high-performance digital system. It is an intelligent embedded codec performing streaming, recording and operating as a professional outdoor video motion detection system with object tracking – suitable for external installations such as prisons, airports, military compounds, perimeter protection, etc.

Via the sophisticated detection algorithm, SISTORE CX EDS minimises false alarms and maximises detection rates, providing a highly reliable and unique system to the market place.

Airports



# Advanced algorithms to maximise detection rates

## ■ Extensively field tested

With a history developing digital products for the last 25 years, Siemens has spent the last fifteen of those developing outdoor video motion detection systems. These systems have been installed all over the world and many of those first systems are still operational today, protecting prisons, airports, government facilities, etc.

## ■ Based upon SISTORE CX platform

SISTORE CX EDS (Enhanced Detection Solution) is the first software module to be based upon the SISTORE CX platform. This high-performance hardware platform has been developed with superior technology that allows further functionalities to be added via software modules, such as EDS. The EDS software is a retrofit upgrade via software licence to enable a standard SISTORE CX to have the additional functionality of a reliable outdoor video motion detection and object tracking system.

## ■ Highest detection rates

Instead of simply putting a block of zones to cover the scene, often causing false alarms, the system works in a far more intelligent way. A combination of trip wires, the setting of target object direc-

tion, speed and size with tracking, and perspective compensation, ensures objects are detected, tracked and if fulfilling alarm criteria, then an alarm occurs.

## ■ Suppresses false alarms due to environmental factors

False alarms are often caused by environmental factors such as snow, wind, rain, shadows, animals, trees and leaves blowing, etc. Via the sophisticated algorithms of SISTORE CX EDS, these should be greatly minimised, whilst still maximising detection rates.

## ■ Reliable object tracking

Object tracking and alarming is made very simple. Objects are tracked in green to show the source direction of the object, and when fulfilling alarm criteria (for speed, size, distance travelled, etc), turn red and put the system into alarm.

## ■ Simple to operate

SISTORE CX EDS is logically presented on screen and when operating part of a networked system, gives the operator a complete overview of the system and its status. Should a camera go into alarm, the operator is notified immediately and can then follow security procedures.

## Highlights

- Extensively field tested in various environments and applications
- Suppresses false alarms due to environmental factors
- Reliable detection of objects with tracking
- Simple to set up
- Offers easy system use
- Highest detection rates

Building façades and perimeters



Prisons



# Siemens – leaders in detection algorithm technology

Having received feedback from customers who were concerned about the general reliability of outdoor video motion detection systems and the costs that are associated with high false alarm rates, Siemens developed SISTORE CX EDS, a ground breaking solution forged by customer requirements.

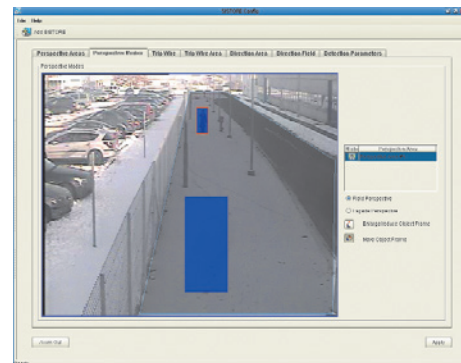
This next generation embedded platform uses the experience that Siemens engineers have built over the last 25 years, resulting in the most sophisticated hardware platform and detection algorithm available. It enables processing power that has never been seen before in the security industry, with over 30 billion computations being processed every second. This type of processing power has created a unique system with multiple functions, suitable for a whole range of applications.

Rather than using the traditional methods of motion detection systems on the market today, SISTORE CX EDS uses a new “patent-pending” statistical method analysis that actually monitors an object

to build intelligence, continuously analysing the video to ensure the object being tracked fulfils the exact criteria for a true alarm.

## ■ Trip wires

Unique to SISTORE CX EDS is the use of “trip wires” – these are quick and easy to set within the field of view of the camera, usually along a perimeter or an area where objects should not cross. Multiple trip wires can be set if required. Motion arrows are added to ensure movement is detected in the direction of the arrows set. Further setup also allows the length of these arrows to be set, thereby ensuring that an alarm can be triggered only when an object has travelled the full distance of the arrow. For example, if a trip wire is along a fence that is regularly patrolled, no false alarm would occur, as the direction of the patrol is parallel with the fence. For an alarm to occur, an object would have to travel towards the fence from a secure area either side of the fence, thereby travelling the full distance set by the arrow and in the direction of the arrow.



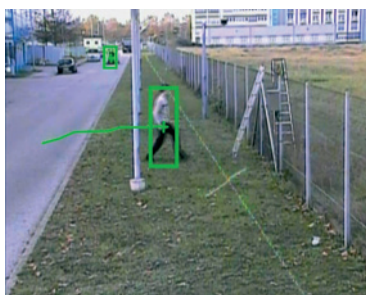
Perspective compensation

## ■ Perspective compensation

Used in conjunction with trip wires, perspective compensation can be applied to take into account the perspective view of the camera. When a fence is being monitored, persons appear smaller as they move further away from the camera, although their height does not change. A simple walk-test allows the system to compensate for this perspective and learn what a person’s height looks like at different distances from the camera – this ensures that objects in the distance, that would have otherwise been ignored for being too small, are tracked as they may fulfil the criteria to cause an alarm.

## ■ Dynamic trip wires

“Dynamic trip wires” are used in addition to standard trip wires, usually in areas where standard trip wires cannot be set, normally when the camera is viewing the façade of a building, or the grounds of a property. In these cases objects can appear anywhere, as in the case of prisons, where a prisoner can come through a prison wall, or come up through the



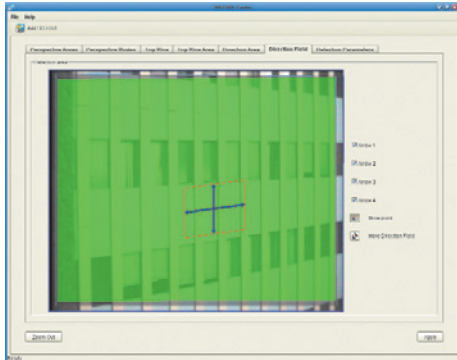
Two objects are tracked in green (a car and a person)



As the person crosses the trip wire next to the fence, the alarm is raised

Dynamic trip wires showing a jail-break attempt





Dynamic trip wire setting direction & distance

ground. In these instances, as with trip wires, the length and direction of detection can be set – these properties are then applied to the whole view of the camera, no matter where an object appears. If the dynamic trip wire is set with movement to occur in any direction up to two metres, then anything further than this distance would be treated as a potential alarm. Any object appearing anywhere in the view of the camera would be allowed to travel in any direction for two metres – after this distance, an alarm would occur. This is particularly useful in prisons with open windows, where objects are often swung from these windows – an object moving (either swung from these windows, or perhaps a jail-break attempt) further than two metres would trigger an alarm.

**■ Sabotage detection**

Offering the highest system security, once set, should a camera be covered, defocused, repositioned, or the lens sprayed, then a sabotage alarm will trigger.

As specified, after 2 metres the system alarms

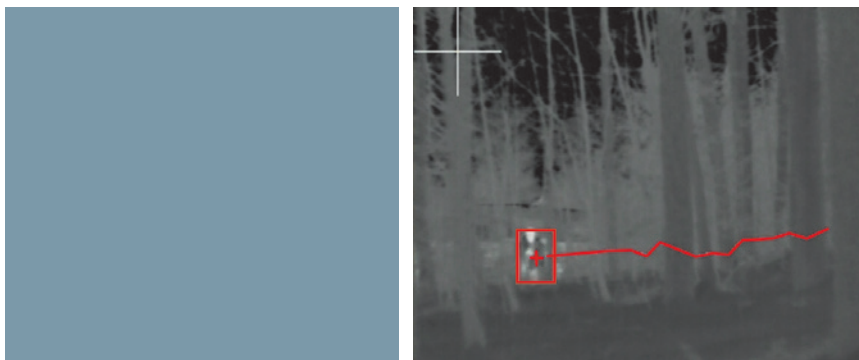


**■ Specialist high security installations**

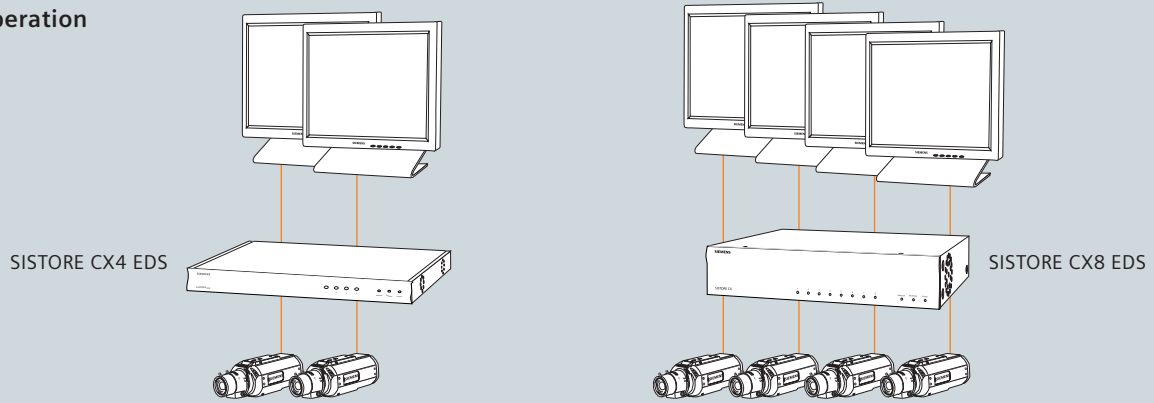
Prisons or perimeter monitoring often use infrared lighting in conjunction with day-night or monochrome cameras, and these are fully compatible with SISTORE

CX EDS. For the highest security installations such as military compounds, thermal imaging cameras are used and these are also compatible.

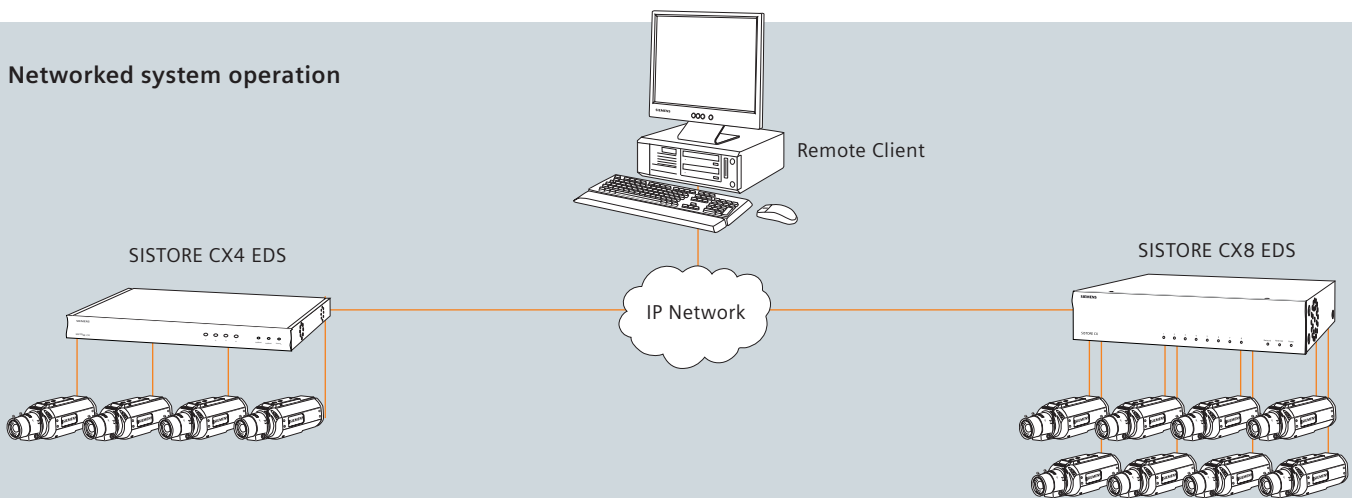
EDS operation with thermal imaging camera



### Standalone operation



### Networked system operation



#### Simple to use

The implementation of sophisticated technology and advanced algorithms is seamless to the operator. The user-interface is very logically presented, showing cameras on one side and monitors on the other – just dragging a camera and dropping it onto a monitor produces the video. Upon an alarm, simple on-screen

identification alerts the user with the alarm sequence able to be played with a single click of a button!

#### Reliable and high tolerance to false alarms

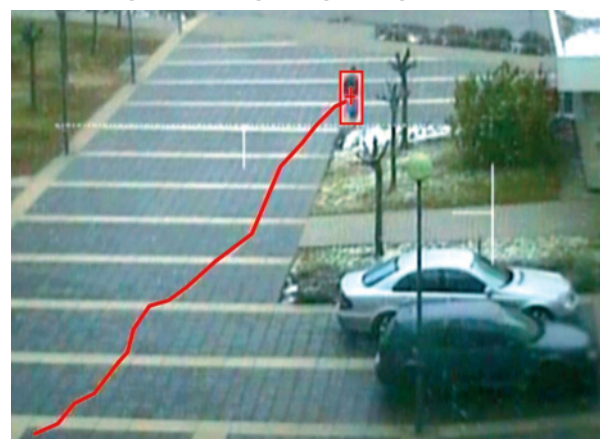
Most important is the tolerance to false alarms. SISTORE CX EDS and the detection algorithm were designed with this in

mind – environmental factors, such as snow, wind and rain are processed via the advanced algorithms, greatly reducing false alarms – SISTORE CX EDS is definitely an outdoor motion detection system “suitable for all seasons”.

Easy on-screen identification of alarms



Clear tracking and alarming through falling snow





SISTORE CX EDS runs on both SISTORE CX4 and CX8 systems

	CX4 EDS	CX8 EDS
<b>Standard tracking mode</b> Encoding 4CIF / 2CIF / CIF	2 video inputs: 6.25 / 12.5 / 25 ips 4 video inputs: 1 / 3.12 / 6.25 ips	4 video inputs: 6.25 / 12.5 / 25 ips 8 video inputs: 1 / 3.12 / 6.25 ips
<b>Enhanced tracking mode</b> Encoding 4CIF / 2CIF / CIF	2 video inputs: 3.12 / 6.25 / 12.5 ips	4 video inputs: 3.12 / 6.25 / 12.5 ips
<b>Motion detection</b>	100,000 zones	
<b>Detection parameters</b>	Speed, direction, distance, size, time, area masking	
<b>Standard static trip wires</b>	8 per input	
<b>Dynamic trip wires</b>	1 per input	
<b>Video loss detection</b>	■	■
<b>Sabotage detection</b>	repositioning, defocusing, covering, spraying	
<b>Illumination changes</b>	Auto-adaption	
<b>Compatible with thermal imaging cameras</b>	■	■
<b>Compatible with infrared illuminators</b>	■	■
<b>Software activation</b>	via licence key	

# Welcome to the world of innovative thinking

## ■ Innovation

Siemens invests a great deal in both manpower and research and development. This results in a steady stream of new insights, technologies and inventions that enable us to improve the reliability of our products and systems, ensuring the securest products and making our systems even more simple and convenient to operate.

Advances in digital technologies are creating a whole new world of possibilities. Siemens is at the leading edge of progress in this field and continues to redefine both current and future technologies.

## ■ Reliability

With a history of over a hundred years, if you need an established, reliable partner you are in the very best of hands with Siemens. System expansions and upgrades can be continuously made over a period of years, which ensures your investment for the future.

## ■ Security

Siemens products and systems provide you with security. Today, tomorrow and for decades to come. That's why countless customers around the world place their trust in Siemens.



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The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.

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