



Video Surveillance Systems (CCTV)





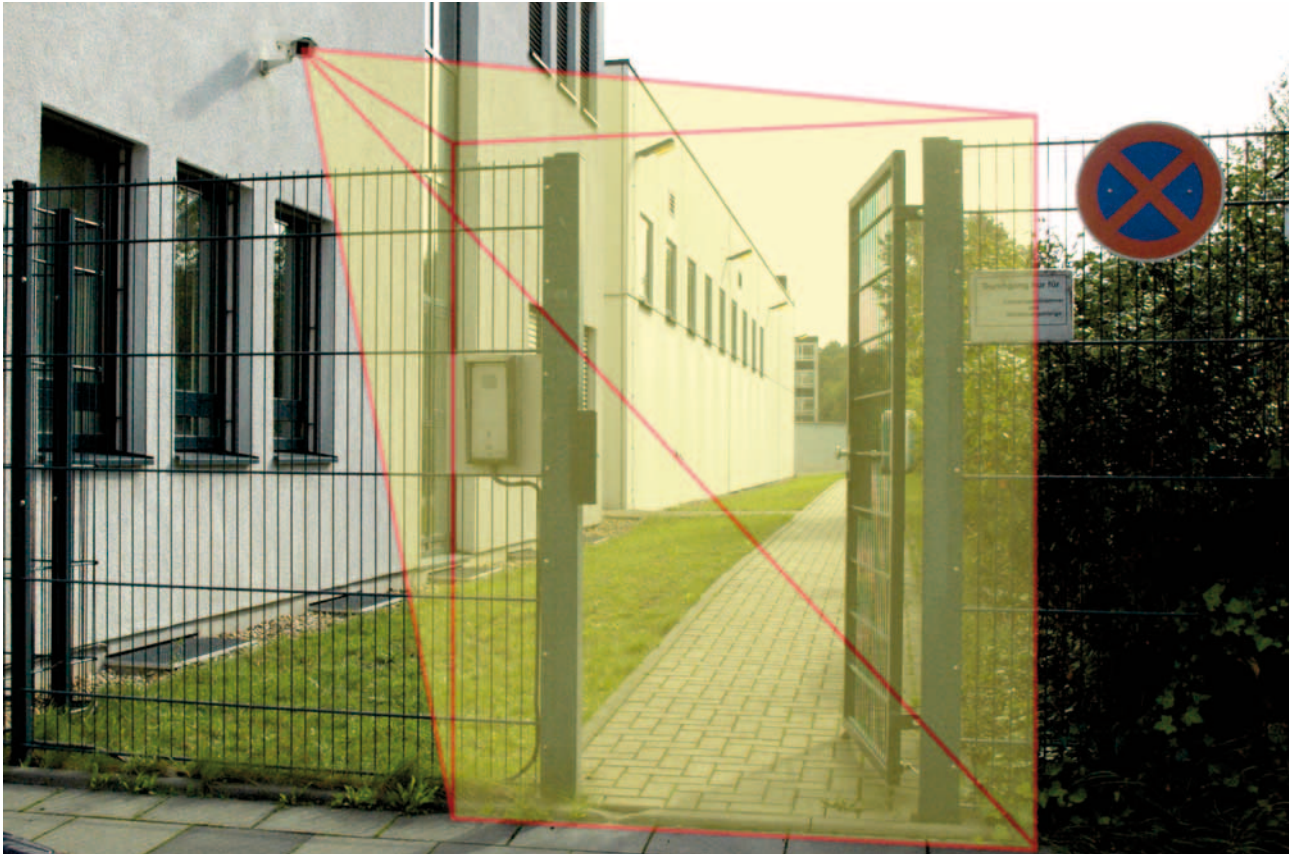
We wish to thank the Police, in particular the „Kommission Polizeiliche Kriminalprävention der Länder und des Bundes - KPK“ (German Police committee for crime prevention) for the good an constructive cooperation in producing this brochure.



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Video Surveillance Systems (CCTV)



Application: Process and control technology

A video surveillance system (short VSS) offers the possibility of visual surveillance while the observer is not directly on site. Surveillance may be performed not only directly but may also be stored, evaluated and repeated as often as necessary.



Video technology may be used among others for control and regulation purposes (traffic regulation, production control, quality assurance).

Application: Security technology

A further field of application of VSS is security technology, e.g.

- Verification of alarms (intrusion, hold-up, fire);
- Detection of criminal offences (theft, defalcation);
- Documentation of security-relevant events;
- Monitoring of open-air grounds;
- Deterrence of offenders (arson, tamper, vandalism and hold-up);
- Localisation of offenders (and tracing of movements of offender in the object);
- Diminishing of accident consequences (prompt intervention);
- Documentation of events (e.g. money transfer at an ATM);
- Interaction with access control systems (ACS).

Components of a VSS

A VSS basically comprises the following components:

- Camera (and lighting)
- Control/recording unit
- Output interface (e.g. monitor)

Each single component as well as their connections (cables, junction box, switches, etc.) have an influence on the image quality and shall therefore be compatible in order to ensure successful interaction.

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VSS for the prevention of hazards

If used properly, video surveillance systems may be applied effectively for the prevention or decrease of hazards.

Protection is not given by the mere presence of VSS

A positive security effect may be achieved as VSS offer the possibility of suitable counter measures once a hazard has been detected and acknowledged. If such counter measures are abstained from, the use of the VSS will be restricted to the collection of means of evidence and the deterrence of offenders, which unfortunately cannot be verified.

Description of objectives

Each user of a VSS (also called operator of the VSS) has special expectations on his particular system. These individual expectations as well as the given risk and realised security measures shall be known in order to develop a balanced concept. For planning a VSS the following questions should be answered:

- What risks are there?
- To what amount is the risk evaluated (subjectively)?
- Where is the system installed – what do the surroundings look like?
- Functional safety of the VSS – can isolated faults of the system be tolerated?
- Is special protection against tamper and vandalism necessary?

- Under which environmental conditions is the system operated? Are there special weather influences and lighting conditions?
- Which interfaces to other systems shall be applied?
- Which task does the VSS have in the overall security concept?

In order to ensure successful operation of the system, it should be designed in co-operation with a professional installer taking into consideration the above-mentioned items.

The design of a VSS is thus divided into four main sections:

1. Definition of the system purpose – what exactly shall the VSS be able to do? What systems shall the VSS co-operate with?
2. Determination of an installer of the VSS.



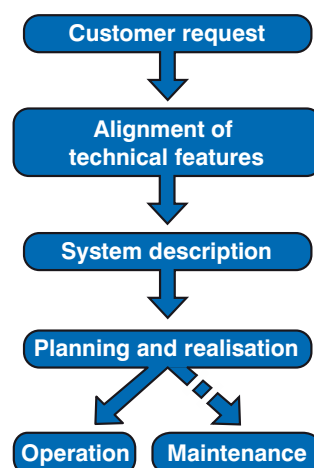
3. Detailed description (definition) of the individual system characteristics – in co-operation with the installer.
4. Installing and commissioning the VSS and keeping it in operation (e. g. regular maintenance).

Important note: The Data Protection Act of the German Bundesländer – and of other countries - is not uniform. There are individual regulations as to the use of VSS in business shops and enterprises. Please contact your installer on this item. He will surely help you in the practical realisation as well as in theoretical questions.

Technical realisation

As you have now specified what the system shall be able to do, the technical requirements are to be identified, e. g. the parameters of image reproduction, such as

- image resolution;
- contrast;
- colour reproduction.



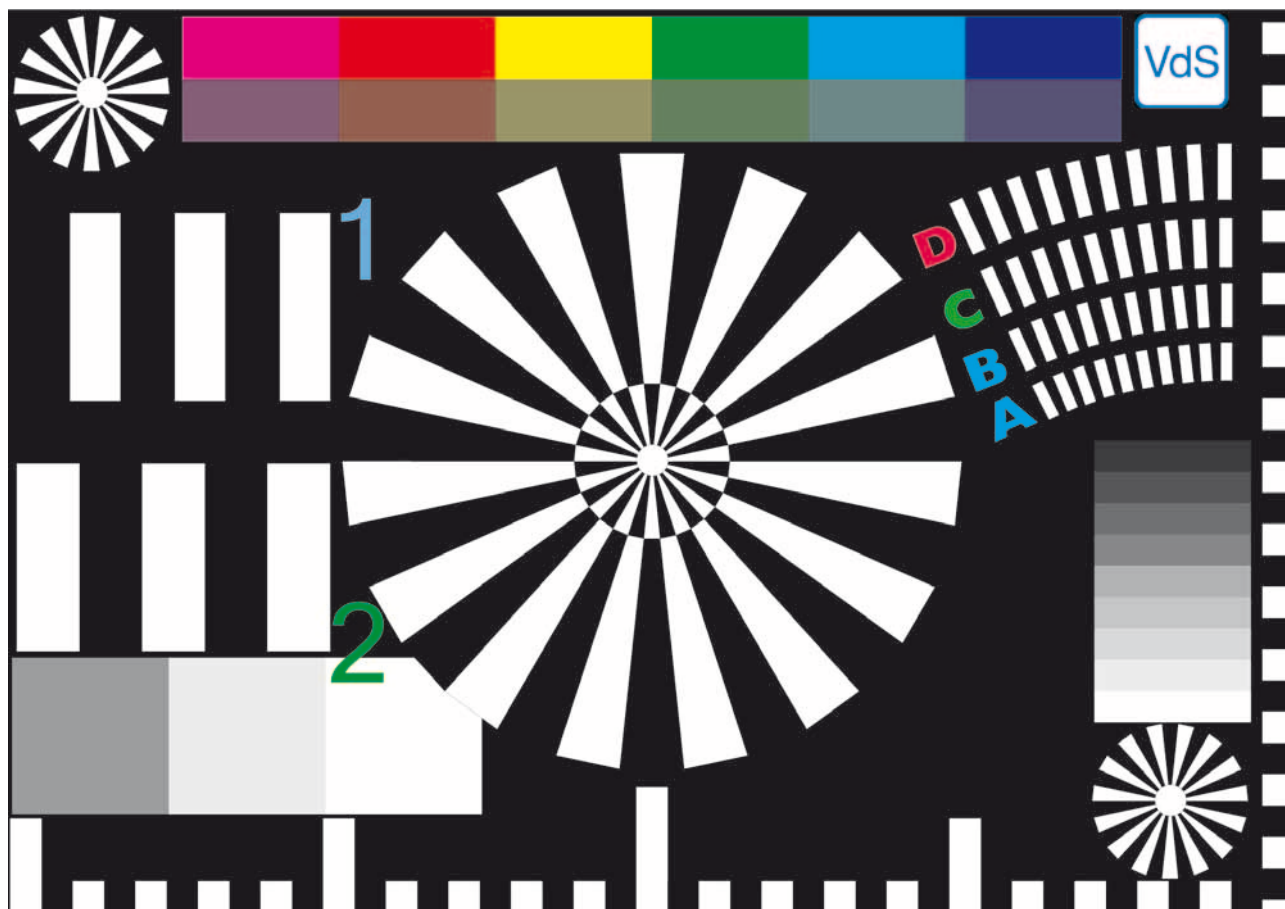
The camera

The camera is the eye of the system: it converts incoming light (visible or infrared) into electrical signals, which are then processed by the system.

The choice of the right camera requires a high level of expert know-how. Only professionals are able to coordinate the different parameters optimally. For this purpose the following shall be considered:

- resolution (resolution increases in general with the number of pixels);
- light sensitivity (natural or artificial, visible or infrared light, etc.);
- colour reproduction (important for person and property tracing);

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- exposure times (relevant for the recording of moving objects);
- image reproduction at backlight (glaring);
- focal length.

Also the lighting in interaction with the right objective is of major importance.

Only if all technical adjustments and settings of the equipment software are correct, an optimal image reproduction may be expected. The image quality is tested a. o. by filming special test images (see figure above) in determined distances to the camera. The higher the resolution of the VSS, the better the fine structures of the test image. This is important as in video surveillance technology differences are made between detection, recognition and identification; different reso-

lution levels are required for each of these features.

Control and recording unit

Most video surveillance systems have more than one camera. In order to ensure proper interaction of all cameras within the VSS, further components are necessary, such as special wires for the transmission of video signals and so-called video cross bars (junctions for video signals).

All images captured by the cameras are formatted by the control unit (a special personal computer) for further use.

Output interfaces

The output of image data may be performed in different ways. Among others monitors are used for this purpose. The output may also go directly to a printer. A special variety of the monitor image output is a transmission of images to a display of mobile phones. This may be of help for a direct intervention even if the images are not very detailed.



The VdS installer

For all questions regarding video technology the VdS-approved installer will be your competent contact.

The VdS-approved installer has given proof that he has the necessary technical know-how as well as the necessary skills to plan and install VdS-approved VSS – and also to maintain the systems, of course.

Listings of VdS-approved installers are available in printed form to be ordered from VdS Schadenverhütung or to be downloaded free of charge on the VdS homepage under www.vds.de.

Certificate of conformity

Proper planning and installation of the VSS on site is as important for its proper functioning as the chosen technology. The certificate of conformity describes in a tabular form all the essential

components and features of a VSS. At the same time the proper planning and installation is documented with this certificate of conformity.

The certificate of conformity serves as a description of the system and thus as an assurance for all parties that the system fulfils all the requirements.

The certificate of conformity enables the operator of the system – should there be any problems – to quickly check what services the installer had promised and performed and, if so, with which deviations.

Tested and certified technology

Video surveillance systems shall function reliably. In a lot of cases the system components of the installed system are permanently exposed to the weather. Nevertheless the system shall capture, transmit, process, display and – if so – store the images in the decisive moment.

VdS Schadenverhütung test all system components of a VSS down to the bit.

For this purpose – besides the “weather resistance” (the expert speaks of the resistance against environmental influences) – it is ensured that products function in all possible combinations of application and have sufficient protection against manipulation (tamper). Furthermore a multitude of individual technical tests are performed. These individual tests shall not and cannot be described here – they are specified in the respective product and procedure guidelines. These guidelines are available for manufacturers on request.

A VdS approval is granted only after all the tests have been performed with a positive result. The VdS approval is confirmed by the characteristic VdS mark together with an individual approval number.



The VdS approval is an important and especially independent quality statement which cannot be influenced by the manufacturers' advertising and which should be part of each VSS.

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VdS publications and listings

Video surveillance systems (VSS) are part of a balanced protection concept. VdS Schadenverhütung have also published a variety of helpful information material for other kinds of protection aspects.

Guidelines

VdS 691en Security guidelines for households

VdS 2333en Security guidelines for shops and businesses

VdS 2364en Guidelines for video surveillance systems, System requirements, Category I

VdS 2366en Guidelines for video surveillance systems, Planning and installation

Brochures

VdS 5476en Locking cylinders

VdS 5477en Key deposit boxes

VdS 5478en Windows

VdS 5479en Doors

VdS 5480en Intruder and hold-up alarm systems

VdS 5483en Safe storage units and strongrooms

Listings

All listings and further information are also available on the Internet under www.vds.de.



Please visit us on our website.

