



## **BS EN 62676 Series**

*Guidance for customers about  
grading and other important matters*

## 1. Introduction

This guide is intended to help purchasers of video surveillance systems (VSS) understand the requirements of the BS EN 62676 series of standards for VSS. This guide does not describe all the requirements of a VSS. The standards do not fundamentally alter how a VSS works but they do affect which features need to be considered for any claims of compliance to be made against the standard.

The BS EN 62676 series of standards introduced some new concepts including, for the first time, the impetus to use security grading. It is important to understand that most requirements given by the BS EN 62676 series of standards are not grade dependent but, as this is a relatively new concept in VSS, this guide pays particular attention to the subject. It explains the benefits of grading and how it would be expected that an installer will describe this to the customer and document the grade(s) that have been chosen.

## 2. What are the Benefits of using the BS EN 62676 standards?

These standards were developed using best practice guidelines from several organisations including BSIA and the UK Government's Centre for Applied Science and Technology. These international standards also incorporate ideas from British Standards. So, for the first time a single set of standards includes a wide range of best practice ideas to improve the quality of VSS.

These standards have been embraced within the standards framework developed by the Surveillance Camera Commissioner's team.

## 3. In summary the new standards:

- Define best practice - the use of the standards will ensure:
  - that the needs of the customer are properly specified and understood.
  - that the system is designed, installed, operated and maintained to meet the needs of the customer.
- Enable comparison between suppliers' proposals
- Enable consistent application of features
- Give a simplified method of specifying a system.

## 4. What is an Operational Requirement?

In recent times there has been increasing use of a form of documentation called an Operational Requirement (OR). BS EN 62676 encourages this use.

The OR is intended to document the purpose of the VSS starting with the wishes of the system owner/operator. The OR should state what threats the system should address and how the system is to be used. This means it is clearer to all parties what is desired and easier to check whether the design will meet the needs of the owner.

## 5. What are the Benefits of the Grading System?

It simplifies the specification process and helps to ensure consistency of design and proposals.

## 6. Grading – Key points

A summary of the key points about grading are:

- There are four Grades. Grade 1 has the lowest requirements (and introduces very little above the common requirements, see table).  
**Note:** *Grading of VSS is not the same as the BS EN 50131 series of standards for intruder alarms and confusion may arise if the differences are not understood.*
- The standards allow for flexibility, but it is recommended that system designers should choose the simplest approach that will work. This could be one grade applied throughout the system.
- Grading will affect the protection level and restriction of access to the system and should be assigned according to the risks and their possible effect on the VSS.
- Grading of a system does not determine the quality of the images captured by the system. Elements such as image quality, screen occupation and similar are specified separately under BS EN 62676-4 and BS EN IEC 62676-5.
- The chosen grade(s) should be recorded in the OR, see above, or System Design Proposal (SDP).
- Rather than each component (e.g. camera, DVR, NVR) it is the functions of the VSS that are graded.
- Where use of a single grade for all system functions is not practical the standard permits the grading to be divided up by function. The standard describes 18 functions (see table).
- Additional flexibility can be obtained by documenting specific requirements in the OR or SDP.
- Typically, each function will have a consistent grade throughout the system. One exception to this is the tamper detection and protection where different parts of the system may have different levels of exposure or vulnerability to attack.



















## 7. Summary

Making use of the BS EN 62676 series of standards will be of great benefit to customers and enable a clear understanding of the requirements of a system to be developed by all interested parties. This is assisted by creation of the OR. Customers should ensure they discuss the application of grading to simplify the documentation and comparison of systems but should note that a higher grade does not imply better video quality.

## 8. Further detail

The BSIA has published a guide giving more detailed information about the grading of VSS. This has been written for VSS installers, specifiers and specialists. It includes details of how to document system grading as applied to a system. This guide is Form 218 – “Graded requirements under BS EN 62676 Standards for VSS” and can be found on the BSIA website: [www.bsia.co.uk/publications/video-surveillance/](http://www.bsia.co.uk/publications/video-surveillance/)

The following table shows the effect of choosing a different grade for each of the 18 separately graded functions.

Function	Grade 1	Grade 2	Grade 3	Grade 4
<i>Shaded areas mean no extra requirement specific to this grade. Each Grade lists extra features compared to lower grade except where indicated.</i>				
	<b>Common interconnections</b> (e.g. sharing of several cameras to multiple operators)			System design should show how the bandwidth will cope with multiple simultaneous streams of images
	<b>Storage</b> (i.e. short term - e.g. overwritten after 30 days)		• Fast reaction time	<ul style="list-style-type: none"> <li>• Data backup</li> <li>• Faster reaction time</li> <li>• Fast live replay</li> </ul> <ul style="list-style-type: none"> <li>• Fastest reaction time</li> <li>• Faster Live replay</li> </ul>
	<b>Archiving and backup</b> (i.e. long term - e.g. needed after 30 days)			<ul style="list-style-type: none"> <li>• Manual backup</li> <li>• Verification of backup</li> </ul> <ul style="list-style-type: none"> <li>• Auto backup</li> <li>• Image authentication</li> </ul>
	<b>Alarm related information</b>			Display of alarm information with origin, type, time and date.
	<b>System logs</b> - to include...		<ul style="list-style-type: none"> <li>• Alarms</li> <li>• Power Loss</li> <li>• System Reset</li> <li>• Export &amp; hardcopy</li> <li>• User log-in &amp; out</li> </ul>	<ul style="list-style-type: none"> <li>• Tamper</li> <li>• Video Loss</li> <li>• Essential function failure</li> <li>• Authorization code changes</li> <li>• Search &amp; replay of images</li> <li>• Changes to recording parameters</li> <li>• Alarm Acknowledge</li> <li>• System config change</li> <li>• Date &amp; Time Change</li> </ul> <ul style="list-style-type: none"> <li>• Fault messages</li> <li>• Diagnostic Actions</li> <li>• Control of Functional Cameras (PTZ)</li> </ul>
	<b>Backup and restore of system data</b> (i.e. configuration)			Capable of backup and restore of all system configuration
	<b>Repetitive failure notification</b>			Detection and handling of repetitive failures
	<b>System Power Supply monitoring</b>			Monitoring and handling of Power Supply Failures
	<b>Image buffer holding time</b> (i.e. time before images are written to storage media)			Images not held in buffer for >5 seconds
	<b>Essential function device failure notification time</b>			Indication of failure of an essential function within 100s
	<b>Monitoring of interconnections</b> (between equipment on site)			<ul style="list-style-type: none"> <li>• Verify Interconnection &lt;30s</li> <li>• Retries before notifying user: 5</li> <li>• Max time before notifying user: 180s</li> </ul> <ul style="list-style-type: none"> <li>• Verify Interconnection &lt;10s</li> <li>• Retries before notifying user: 2</li> <li>• Max time before notifying user: 180s</li> </ul>
	<b>Authorisation code requirements</b> (e.g. Password)		<ul style="list-style-type: none"> <li>• Min 10,000 codes, or</li> <li>• Min 3,000 keys</li> </ul>	<ul style="list-style-type: none"> <li>• Min 100,000 codes, or</li> <li>• Min 15,000 keys</li> </ul> <ul style="list-style-type: none"> <li>• Min 1,000,000 codes, or</li> <li>• Min 50,000 keys</li> </ul>
	<b>Time synchronisation</b>			Time automatically corrected to UTC (GMT) (display time can show local time, e.g. BST)
	<b>Data authentication</b> (e.g. Watermarking)			Authentication of images and alterations to video stream reported to user
	<b>Export/copy authentication</b> (e.g. verifying watermarks)			Method of verifying authenticity of exported images
	<b>Data labelling</b> - to include...	• Date & Time	<ul style="list-style-type: none"> <li>• Location (Site)</li> <li>• Source (Camera)</li> </ul>	• Labelled with UTC (GMT) + local time offset
	<b>Data (manipulation) protection</b> (e.g. encryption)			<ul style="list-style-type: none"> <li>• Provide method to prevent unauthorized viewing and copying</li> <li>• Encryption</li> </ul>
	<b>Tamper detection</b> (can be applied according to risks associated with individual cameras or other system parts)		<ul style="list-style-type: none"> <li>• Video Loss</li> <li>• Detection of loss: 8s</li> </ul>	<ul style="list-style-type: none"> <li>• Detection of loss: 4s</li> <li>• Check of field of view</li> <li>• Detect obscuring and blinding</li> <li>• Cameras have tamper protection</li> </ul> <ul style="list-style-type: none"> <li>• Detection of loss: 2s</li> <li>• Detect substitute video data</li> <li>• Detect significant Contrast reduction</li> </ul>

## About the BSIA

The British Security Industry Association (BSIA) is the trade association representing over 70% of the UK's private security industry. Its membership includes companies specialising in all sectors of security. For security buyers, BSIA membership is an assurance of quality, with all member companies required to adhere to strict quality standards.

This document was created by the technical groups and committees of the British Security Industry Association (BSIA). The technical groups and committees encourage debate on new developments and concerns within the security industry. In doing so it seeks to ensure that all stakeholder interests are represented including security companies, users, the police, inspectorates and insurers.

As a security company, BSIA membership will raise your company profile and ensure that your business is at the heart of influencing the future of the security industry. You will become part of a unique group of high quality and professional companies which are well-respected and well-represented to government, end users, specifiers, standards and legislative bodies. For more information contact the BSIA.

The information contained in this document was correct at the time of publication, however if you are relying on the information contained in this document for contractual purposes, you should check that the information remains correct.

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