AS/NZS 62676.4:2020

Australian/New Zealand Standard™

Video surveillance systems for use in security applications

Part 4: Application guidelines (IEC 62676-4:2014, MOD)

currently in preview, click buy full versi

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

AS/NZS 62676.4:2020

This Joint Australian/New Zealand Standard™ was prepared by Joint Technical Committee EL-031, Intruder Alarm Equipment and Installations. It was approved on behalf of the Council of Standards Australia on 18 March 2020 and by the New Zealand Standards Approval Board on 5 February 2020.

This Standard was published on 24 April 2020.

The following are represented on Committee EL-031:

Australian Digital & Telecommunications Industry Association
Australian Federal Police
Australian Industry Group
Australian Security Industry Association
Engineers Australia
Fire Protection Association Australia
Insurance Council of Australia
New Zealand Security Association
NSW Police Force
Queensland Police Service
Security Providers Association of Australia
South Australia Police
Victoria Police
Victorian Security Institute

This Standard was issued in draft form for comment as DR AS/NZS IEC 62676.4:2019.

currently in preview, click buy full versi

Keeping Standards up-to-date

Ensure you have the latest versions of our publications and keep up-to-date about Amendments, Rulings, Withdrawals, and new projects by visiting:

www.standards.org.au

www.standards.govt.nz

ISBN 978 1 76072 827 4

Australian/New Zealand Standard™

Video surveillance systems for use in security applications

Part 4: Application guidelines (IEC 62676-4:2014, MOD)

First published as AS/NZS 62676.4:2020.

COPYRIGHT

© IEC 2020 — All rights reserved
© Standards Australia Limited/the Crown in right of New Zealand, administered by the New Zealand Standards Executive 2020

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher, unless otherwise permitted under the Copyright Act 1968 (Cth) or the Copyright Act 1994 (New Zealand).

currently in preview, click buy full version

Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-031, Intruder Alarm Equipment and Installations.

The objective of this Standard is to give recommendations and requirements for the selection, planning, installation, commissioning, maintaining and testing video surveillance systems (VSS) comprising of image capture device(s), interconnection(s) and image handling device(s), for use in security applications.

The objectives of this part of AS/NZS IEC 62676 are to —

(a) provide a framework to assist customers, installers and users in establishing their requirements

(b) assist specifiers and users in determining the appropriate equipment required for a given application; and

(c) provide means of evaluating objectively the performance of the VSS.

This Standard is an adoption with national modifications, and has been reproduced from, IEC 62676-4:2014, *Video surveillance systems for use in security applications - Part 4: Application guidelines*. The modifications are additional requirements and are set out in Appendix ZZ, which has been added at the end of the source text.

Appendix ZZ lists the variations to IEC 62676-4:2014 for the application of this Standard in Australia and New Zealand.

As this document has been reproduced from an International Standard, the following applies:

(i) In the source text "this part of IEC 62676" should read "this Australian/New Zealand Standard".

(ii) A full point substitutes for a comma when referring to a decimal marker.

Australian or Australian/New Zealand Standards that are identical adoptions of international normative references may be used interchangeably. Refer to the online catalogue for information on specific Standards.

The terms "normative" and "informative" are used in Standards to define the application of the appendices or annexes to which they apply. A "normative" appendix or annex is an integral part of a Standard, whereas an "informative" appendix or annex is only for information and guidance.

currently in preview, click buy full version

© Standards Australia Limited/Standards New Zealand 2020

NOTES

currently in preview, click buy full versi

CONTENTS

FOREWORD 6
INTRODUCTION 8
1 Scope 9
2 Normative references 9
3 Terms, definitions and abbreviations 10
3.1 Terms and definitions 10
3.2 Abbreviations 14
4 General considerations 15
4.1 General considerations 15
4.2 Risk assessment 15
4.2.1 General 15
4.2.2 Selection of security grades 15
4.3 Developing the operational requirements 16
4.4 Site survey 16
4.5 System design including site plan 17
4.6 Developing the test plan 17
4.7 Installation, commission and hand over 17
4.8 Documenting the system 17
5 Operational requirements specifications 17
5.1 General 17
5.2 Purpose of the operational requirements 17
5.3 Content of the operational requirements 18
5.3.1 General 18
5.3.2 Basic objective/functionalities 18
5.3.3 Definition of surveillance limitations 18
5.3.4 Definition of the site(s) under surveillance 18
5.3.5 Definition of activity to be captured 18
5.3.6 System/picture performance 18
5.3.7 Period of operation 18
5.3.8 Conditions at the location 19
5.3.9 Resilience 19
5.3.10 Monitoring and image storage 19
5.3.11 Exporting images 19
5.3.12 Routine actions 19
5.3.13 Operational response 19
5.3.14 Operator workload 20
5.3.15 Training 20
5.3.16 Expansions 20
5.3.17 List of any other special factors not covered by the above 20
5.4 System operational criteria 20
5.4.1 General 20
5.4.2 Automation 20
5.4.3 Alarm response 21
5.4.4 System response times 21
6 Equipment selection and performance 22
6.1 General 22

© Standards Australia Limited/Standards New Zealand 2020

currently in preview, click buy full version

6.2 Camera equipment 22
6.3 Camera and lens selection criteria 22
6.4 Camera selection 22
6.4.1 General 22
6.4.2 PTZ 23
6.5 Lens and housing selection 23
6.6 Site coverage/numbers of cameras 24
6.7 Field of view – object size 24
6.8 Field of view – Other considerations 26
6.9 Illumination 26
6.10 IP Video equipment 27
6.11 Tamper protection/detection 28
6.11.1 Camera tamper protection/detection 28
6.11.2 System tamper protection/detection 28
6.12 System integration 28
7 Image presentation 29
7.1 Display types 29
7.2 Resolution 30
8 Transmission 30
8.1 Principles 30
8.1.1 General 30
8.1.2 Selection of IP video performance classes 31
8.1.3 Interoperability 31
8.2 Wired transmission links 32
8.3 Wireless transmission links 32
8.4 Key considerations for IP based transmission systems 33
9 Video performance characteristics 34
9.1 Image compression 34
9.2 Frame rate 34
9.3 Resolution 35
10 Storage characteristics 35
11 Image storage and export 37
11.1 Format of the compressed video data 37
11.2 Encryption 37
11.3 Basic metadata (time, date, camera identifier) 37
11.4 Multiplexing format 38
11.5 Image enhancements 38
11.6 Image export 38
11.7 Replay of exported images 39
12 VSS control room configuration 39
12.1 Control rooms 39
12.2 Number, size and positioning of VSS video displays 40
12.3 Displays and screens mounted on or off the workstation 40
12.4 Recommended display sizes 40
12.5 Number of camera images per operator 40
12.6 Number of work stations 41
12.7 Equipment siting 41
12.8 Backup power supply provision 41

Currently in preview, click buy full version

© Standards Australia Limited/Standards New Zealand 2020

12.9 Operating temperature 42
12.10 Lightning and surge protection 42
13 Defining the test plan 42
13.1 Purpose of the test plan 42
13.2 User acceptance testing/inspection 42
13.3 Technical acceptance testing 42
13.3.1 Imaging chain consistency 42
13.3.2 Image quality 42
14 Summary of the documentation – Pre-installation 44
14.1 General 44
14.2 Risk assessment 45
14.3 Operational requirements 45
14.4 Design specification 45
14.5 Site plan 45
14.6 Test plan 45
15 System installation and commissioning 45
15.1 Factory acceptance testing 45
15.2 Installation process 46
15.3 User acceptance testing, commissioning and handover 46
15.4 Declaration of conformance to standards 46
16 Final documentation 47
16.1 General 47
16.2 Complete system drawings 47
16.3 System commission (with camera specific audits) 47
16.4 Interface descriptions 47
16.5 Compliance with legislation (informative) 47
17 Maintenance 48
17.1 Maintenance service agreements 48
17.2 Staff 48
17.3 Corrective maintenance 48
17.4 Preventive maintenance 49
Annex A (informative) Current video standard formats 51
Annex B (normative) Test protocol for VSS target 52
B.1 Scope of the test 52
B.2 Test prerequisites 52
B.3 Preconditions 52
B.4 Face selection 52
B.5 Live view methodology (faces) 53
B.6 Live view methodology (VRN) 53
B.7 Recorded view methodology (faces) 53
B.8 Recorded view methodology (VRN) 54
B.9 Motion 54
B.10 Faces: scoring criteria 54
B.11 VRN: scoring criteria 54
B.12 Heads control sheet (for example only) 57
B.13 VRN control sheet (for example only) 58
Annex C (normative) Test method of image quality – Guidance for the use of the video test target 59

Currently in preview, click buy full version

© Standards Australia Limited/Standards New Zealand 2020

Annex D (informative) Guide to specifying VSS parameters 63
Annex E (normative) Detection response testing and acceptability criteria 65
E.1 General 65
E.2 False and nuisance alarms 65
E.3 Setting the response time 65
E.4 PTZ response time test procedure 66
E.5 Observer cueing and prompting 66
E.6 Detection test locations 66
E.7 Target camouflage 67
E.8 Tests with moving targets 67
E.9 Test conditions 67
E.10 Testing a "live" system 67
E.11 Detection test results tables 68
Bibliography 69

Figure 1 – Recommended minimum sizes for PAL (576i) resolution 25
Figure B.1 – Heads control sheet 57
Figure B.2 – VRN control sheet example 58
Figure C.1 – A3 test target 59
Figure C.2 – Avoiding optical distortion 62

Table 1 – Example System feedback – PTZ Control, Responding time, performance and operator 22
Table 2 – Commonly encountered resolutions (in pixels) 25
Table 3 – Person screen height equivalent for different digital resolutions (in percent) 26
Table 4 – Examples of display technologies 29
Table 5 – Example resolutions 30
Table 6 – Wireless transmission options 33
Table 7 – Factors affecting the storage capacity required for a video recorder 35
Table B.1 – Example auditor log sheet 55
Table B.2 – Example control room observer log sheet 55
Table B.3 – Example camera audit sheet 55
Table B.4 – Blank auditor log sheet 56
Table B.5 – Blank control room observer log sheet 56
Table B.6 – Blank camera audit sheet 56
Table D – Suggested VSS building blocks 63
Table E.1 – Detection test results 68

currently in preview, click buy full version

© Standards Australia Limited/Standards New Zealand 2020

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

VIDEO SURVEILLANCE SYSTEMS FOR USE IN SECURITY APPLICATIONS –

Part 4: Application guidelines

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

International Standard IEC 62676-4 has been prepared by IEC technical committee 79: Alarm and electronic security systems.

This standard is based on EN 50132-7 (2012).

The text of this standard is based on the following documents:

FDIS	Report on voting
79/455/FDIS	79/466/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

© Standards Australia Limited/Standards New Zealand 2020

currently in preview. click buy full version

A list of all the parts in the IEC 62676 series, under the general title *Video surveillance systems for use in security applications*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

© Standards Australia Limited/Standards New Zealand 2020

INTRODUCTION

The IEC Technical Committee 79 in charge of alarm and electronic security systems together with many governmental organisations, test houses and equipment manufacturers has defined a common framework for video surveillance transmission in order to achieve interoperability between products.

The IEC 62676 series of standards on video surveillance system is divided into 4 independent parts:

Part 1: System requirements

Part 2: Video transmission protocols

Part 3: Analog and digital video interfaces

Part 4: Application guidelines

Each part offers its own clauses for the scope, normative references, definitions and requirements.

The purpose of this part of IEC 62676 is to provide guidance on how to ensure that video surveillance systems (VSS), thus far referred to as closed circuit television (CCTV), meet their functional and performance requirements.

This part of IEC 62676 will prove useful to those responsible for establishing operational requirements, writing specifications, selecting, installing, commissioning, using and maintaining a VSS.

VSS, in its simplest form, is a means of providing images from security cameras and recorders for viewing on a display via a transmission system. There is no theoretical limit to the number of cameras and displays which may be used in a VSS installation but in practice will be limited by the efficient combination of control and display equipment and the operator's ability to manage the system.

The successful operation of a VSS requires the active co-operation of the user in carrying out the recommended procedures.

Due to the wide range of VSS applications, for example security, safety, public safety, transportation, etc. only the minimum requirements are covered in this part of IEC 62676.

© Standards Australia Limited/Standards New Zealand 2020

VIDEO SURVEILLANCE SYSTEMS FOR USE IN SECURITY APPLICATIONS –

Part 4: Application guidelines

1 Scope

This part of IEC 62676 gives recommendations and requirements for the selection, planning, installation, commissioning, maintaining and testing video surveillance systems (VSS) comprising of image capture device(s), interconnection(s) and image handling device(s), for use in security applications.

The objectives of this part of IEC 62676 are to:

a) provide a framework to assist customers, installers and users in establishing their requirements,

b) assist specifiers and users in determining the appropriate equipment required for a given application,

c) provide means of evaluating objectively the performance of the VSS.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62676-1-1, *Video surveillance systems for use in security applications – Part 1-1: System requirements – General*

IEC 62676-1-2, *Video surveillance systems for use in security applications – Part 1-2: System requirements – Peformance requirements for video transmission*

IEC 62676-2-1, *Video surveillance systems for use in security applications – Part 2-1: Video transmission protocols – General requirem*ents

IEC 62676-2-2, *Video surveillance systems for use in security applications – Part 2-2: Video transmission protocols – IP interoperability implementation based on HTTP and REST services*

IEC 62676-2-3, *Video surveillance systems for use in security applications – Part 2-3: Video transmission protocols – IP interoperability implementation based on Web services*

IEC 62676-3, *Video surveillance systems for use in security applications – Part 3: Analog and digital video interfaces*

© Standards Australia Limited/Standards New Zealand 2020