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Alarmni sistemi - Kombinirani in integrirani alarmni sistemi - 1. del: Splošne zahteve

Alarm systems - Combined and integrated systems - Part 1: General requirements

Systèmes d'alarme - Systèmes d'alarme combinés et intégrés - Partie 1: Exigences générales

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Alarm systems - Combined and integrated alarm systems - Part 1: General requirements

Systèmes d'alarme - Systèmes d'alarme combinés et intégrés - Partie 1: Exigences générales

Alarmanlagen - Kombinierte und integrierte Alarmanlagen - Teil 1: Allgemeine Anforderungen

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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European foreword

This document (EN 50398-1:2017) has been prepared by CLC/TC 79 “Alarm systems”.

The following dates are fixed:

• latest date by which this document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2018-07-11
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2020-07-11

This document partially supersedes CLC/TS 50398:2009.

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Introduction

Electronic system integration brings added value through sharing of common resources, adding new functionality or enabling automated command and control functionalities for faster accurate responses.

This European Standard describes the general requirements and configuration types for combined and integrated electronic systems, which should apply when one or more of the applications being integrated is an alarm application. Applications that should be integrated have as a prerequisite that they are capable of being interoperable at a specified system, sub system or component level.

The prime considerations of this European Standard are to ensure that the individual alarm standards, requirements or guidelines are applied when alarm applications form part of an integrated system. The requirements of this document are in addition to application specific system standards. Application specific system standards take precedence over requirements detailed in this document.

In addition to sharing means of control or communication, the implementation of integration between systems, as described in this document, may provide additional services to the user.

In this document, the wording 'combined and integrated alarm system' is synonymous with 'integrated alarm system', which will mostly be used in the document.

NOTE The bibliography for this document has a non exhaustive list of alarm application standards.

1 Scope

This European Standard specifies the requirements for integrating alarm applications with other systems, which may or may not be alarm applications.

This document defines requirements and procedures for essential testing of the specific aspects of the functionality and integrity, related to the integration of the equipment or systems, in order to complement the individual alarm application standards.

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.

EN 60073, *Basic and safety principles for man-machine interface, marking and identification — Coding principles for indicators and actuators (IEC 60073)*

3 Terms, definitions and abbreviations

For the purposes of this document, the following terms, definitions and abbreviations apply.

3.1 Terms and definitions

3.1.1
(N)ACK
(Negative)Acknowledgement Response of an application to a command

3.1.2
additional facility
facility which is not standard-required by any of the applications of the integrated alarm system

3.1.3
alarm
warning of the presence of a hazard to life, property or the environment

3.1.4
alarm application
sub system of an integrated alarm system intended for the protection of life, property or the environment, such as but not limited to:

— intrusion and hold-up alarm system,

— social alarm system,

— lift alarm system,

— environmental alarm system,

— video surveillance systems used for security and surveillance,

— access control system,

— fire detection, fire alarm and fire protection systems

3.1.5
alarm receiving centre
continuously manned centre to which information concerning the status of one or more alarm systems is reported

3.1.6
alarm company
organization which provides services for alarm systems

3.1.7
alarm condition
condition of an alarm system, or part thereof, which results from the response of the system to the presence of a hazard

3.1.8
alarm system
electrical installation which responds to the manual or automatic detection of the presence of a hazard

3.1.9
alarm transmission equipment
equipment which is used primarily for the transmission of alarms from the alarm system interface at the supervised premises to the annunciation equipment interface at the alarm receiving centre, that may also transmit information or commands from the alarm receiving centre to one or more alarm systems

Note 1 to entry: This does not include equipment provided by a PTT (Public and Private Telephone Transmission) or other general telecommunications equipment (for example modems) where these are used primarily for alarm transmission.

3.1.10
alarm transmission system
equipment and network used to transfer information concerned with the state of one or more alarm systems to one or more alarm receiving centres

3.1.11
application
sub system of an integrated alarm system with a dedicated functionality (e.g. security system)

3.1.12
application standard
European Standard (EN) that specifies the sub system performance requirements

EXAMPLES EN 54 series for fire alarm systems, EN 50131 series for intruder alarm systems.

3.1.13
Central Control Facility
CCF
equipment used for control and/or indicating purposes, which is connected to one or more applications and which is normally manned by operating personnel

Note 1 to entry: For example, a computer at a supervised location. The CCF is an additional facility (and not the standard-required control and indicating equipment) for at least one of the applications.

3.1.14
command signal
instruction that affects one or more applications

3.1.15
commissioning
activating and testing of the integrated alarm system according to the design

3.1.16
common facility
facility which is shared by two or more applications

Note 1 to entry: A common facility may be additional for two or more applications, it may be standard-required for two or more applications or it may be additional for one or more applications and standard-required for other applications.

3.1.17
design
selection of components and fixing their specifications such that the resulting system meets the specified system objectives of the planning

3.1.18
facility
hardware or software which enables a system to fulfil one or more functions

EXAMPLES A transmission path, a processing element, displays.

3.1.19
fault condition
condition of a system which prevents a system or part thereof from functioning as designed

3.1.20
fault signal
message generated due to the presence of a fault condition

3.1.21
handover
process of transferring ongoing responsibility for the integrated alarm system to the organization specified in the contract, to accept the installation, which may be carried out in phases as agreed contractually

3.1.22
integrated alarm system
system having one or more common facilities with at least one being an alarm application

3.1.23
integrity
ability of an application to function as designed including the measure of immunity from influences which could affect correct operation

3.1.24
installation
implementation of the design, specifically the assembling, mounting and connecting of the relevant system components

3.1.25
log book
record book or its electronic equivalent into which all relevant details of the system, its performance and its maintenance can be entered in a relatively secure manner for later retrieval by authorized organizations

3.1.26
maintenance
combination of preventive and corrective activities during the life of the system, which are intended to retain it in, or restore it to, a state in which it can perform the required function

3.1.27
non-alarm application
application intended to provide control and not intended for the protection of life, property or the environment

EXAMPLES Heating and ventilating; energy management; building management; lighting.

3.1.28
planning
specifications of protection objectives and scope of the integrated alarm system based on identified risks and known boundary conditions

3.1.29
processing element
facility to perform mathematical or logical operations on data according to programmed instructions in order to obtain the required functions

3.1.30
standard-required facility
facility necessary to fulfil a requirement of an application standard

Note 1 to entry: A standard-required facility may be shared by two or more applications. In this case, this facility may be a standard-required facility for one application but additional for another application.

3.1.31
system verification
process of confirming that the commissioned integrated alarm system meets the planning, design, installation and commissioning requirements

3.1.32
tamper condition
condition of an alarm system in which tampering has been detected

3.1.33
transmission path
communication route used to convey information within the integrated alarm system

3.2 Abbreviations

CCF Central Control Facility

CIE Control and Indicating Equipment

4 General description and fundamental principles

4.1 General

Integrated alarm systems require careful consideration of many factors in order for the end result to be fit for purpose. This standard describes the elements that make up the planning, design, installation, commissioning, system verification, handover and maintenance of an integrated alarm system.

4.2 Standards

For integrated alarm systems the standards relevant to each application shall apply. The integrated alarm system shall not compromise those requirements.

Common facilities shall comply with all application standards for which they are standard-required. The most severe integrity requirement of each of the standards shall apply.

NOTE This includes Alarm Transmission System requirements when they form part of a common facility.

The common facilities not covered by the application standards shall meet the requirements of this European Standard.

Dedicated facilities shall comply with the relevant application standards.

4.3 Contractual responsibility

An integrated alarm system will include more than one application and is likely to include some level of application interactivity. In order to assist the successful resolution of any difficulties associated with the delivery of the specified interactivity, an overall responsible person shall be appointed. This responsible person shall be responsible for delivering the complete integrated alarm system to the customer and providing a Declaration of Performance against the system specification.

If deviations from the specification have been agreed with the relevant parties, the responsible person shall provide a statement of these deviations.

The responsible person associated with the project should ensure that the person undertaking the design has the relevant expertise to effectively accomplish the process.

NOTE The responsible person can be a natural or legal person.

4.4 Stages of work

4.4.1 General

An integrated alarm system responsible person shall, at a minimum, step through the following stages of work.

4.4.2 Planning

A risk assessment shall be undertaken as part of the planning stage. It is critical to ensure that the objectives of the integrated alarm system are met.

A system specification shall be produced. The detail included within the specification shall reflect the complexity of the system and should include information on at least the following aspects:

— the individual applications and their desired performance requirements;

— the objectives to be achieved by the integration;

— the characteristics of the site(s) into which the integrated alarm system is to be installed;

— the appropriate integrity type (see 4.5) for each common facility as determined by the risk assessment;

— where a CCF is included, then its classification as defined in 5.13.1 shall be determined by the risk assessment;

— consideration should be given as to whether or not a factory acceptance test and/or a site acceptance test is required.

4.4.3 Design

Based on the risk assessment, the integrity type for each common facility (see 4.5) shall be fixed.

Documentation for cause and effect shall be produced to detail the interaction between applications to be configured within the integrated alarm system.

Particular attention shall be given to the consequential effect(s) of the failure of a common facility. If required by the risk assessment, a mitigating methodology shall be applied.