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Alarm systems - Social alarm systems - Part 5: Interconnections and communications

Alarmanlagen - Personen-Hilferufanlagen - Teil 5: Verbindungen und Kommunikation

Systèmes d'alarme - Systèmes d'alarme sociale - Partie 5: Communication et interconnexion

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Verbindungen und Kommunikation

This European Standard was approved by CENELEC on 2021-06-07. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

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European foreword

This document (EN 50134-5:2021) 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) 2022-06-07
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2024-06-07

This document supersedes EN 50134-5:2004 and all of its amendments and corrigenda (if any).

EN 50134-5:2021 includes the following significant technical changes with respect to EN 50134-5:2004:

- The minimum performance parameters for the interconnection including availability, monitoring, security, transmission time are now determined by updated reference to EN 50136-1:2012¹.
- Requirements for microphone and speaker performance to deliver two-way speech have been removed and are now determined with EN 50134-3:2012.
- Requirements for the alarm transmission system have been updated to take account of the general migration of voice traffic to packet-based IP infrastructures by telecommunications providers.
- The minimum technical performance requirements of the alarm transmission system are now prescribed by updated reference to EN 50136-1:2012¹.
- The requirements for an ATS used within social alarm systems are set out as custom categories utilizing performance metrics drawn from more than one standardized ATS configuration class described with EN 50136-1:2012¹.
- Performance parameters are now prescribed for both sessional connected, switched paths or packed switched networks.
- Different technical performance requirements for the alarm transmission system now included for a controller designed for use with one local unit or multiple local units.
- Requirements have been added where digital to analogue or analogue to digital signal conversion is utilized.
- Requirements have been added where a digital to analogue conversion unit undertakes translation between an analogue signalling protocol and a digital signalling protocol.
- Account has been taken of the increasing use of logical alarm triggering where data from several sources are combined to determine whether a specified alarm triggering condition has been met. Minimum requirements are now included logical alarm triggering from any of the following: trigger device, local unit and controller, device provisioning and management platform and the alarm management system.
- Security requirements including design considerations, use of cryptographic algorithms and security protocols now included to protect components of a social alarm system from malicious attacks, inadvertent influences and to ensure privacy and integrity of the transmitted information.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users' national committee. A complete listing of these bodies can be found on the CENELEC website.

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Introduction

A social alarm system provides 24 h facilities for alarm triggering, identification, signal transmission, alarm reception, logging and 2-way speech communication, to provide reassurance and assistance for people considered to be at risk.

The social alarm system provides streaming media between the local unit, the controller and the alarm receiving centre. As a minimum it is in the form of voice communication but in addition it may include, status data, video and voice or other continuous streaming data. Alarm, fault, and status messages may be received and processed at a single, multiple or different ARC's.

The social alarm system can include one or many trigger devices connected to the local unit and/or controller via interconnections, the security and integrity of which are essential to proper operation of the alarm system.

As communications providers continue to migrate towards Next Generation Networks they are increasingly converging voice traffic onto their packet based IP infrastructures, which might no longer have a regulatory requirement to support in-call DTMF tones. This could have an adverse impact on the reliability of in-call tone-based protocols used in social alarm systems, which could drive future systems development to the use of communication protocols engineered for packet based transmission environments.

Social alarm systems are part of a family of alarm systems sharing common standards for aspects such as the performance characteristics of the alarm transmission system. These common performance metrics are defined within the EN 50136 series and this document selects the appropriate performance parameters for social alarm systems by reference to the EN 50136 series.

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1 Scope

This document specifies the minimum requirements for the performance, reliability and security characteristics of interconnections, alarm transmission systems and communications within a social alarm system.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50134 series, *Alarm systems - Social alarm systems*

EN 50134-2:2017, *Alarm systems - Social alarm systems - Part 2: Trigger devices*

EN 50134-3:2012, *Alarm systems - Social alarm systems - Part 3: Local unit and controller*

CLC/TS 50134-9, *Alarm systems - Social alarm systems - Part 9: IP Communications Protocol*

EN 50136-1:2012¹, *Alarm systems - Alarm transmission systems and equipment - Part 1: General requirements for alarm transmission systems*

EN 50136-2:2013, *Alarm systems - Alarm transmission systems and equipment - Part 2: Requirements for Supervised Premises Transceiver (SPT)*

EN 50136-2-4:1998, *Alarm systems - Alarm transmission systems and equipment. Requirements for equipment used in systems with voice communicators using the public switched telephone network*

EN 50136-3, *Alarm systems - Alarm transmission systems and equipment - Part 3: Requirements for Receiving Centre Transceiver (RCT)*

EN 50518:2019, *Monitoring and Alarm Receiving Centre*

EN 50600 series, *Information technology - Data centre facilities and infrastructures*

ETSI EN 300 220-2, *Short Range Devices (SRD) operating in the frequency range 25 MHz to 1 000 MHz; Part 2: Harmonised Standard for access to radio spectrum for non specific radio equipment*

ETSI EN 300 328, *Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum*

ETSI EN 300 440, *Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

ETSI EN 301 406, *Digital Enhanced Cordless Telecommunications (DECT); Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU*

ETSI EN 302 065-1, *Short Range Devices (SRD) using Ultra Wide Band technology (UWB); Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU; Part 1: Requirements for Generic UWB applications*

¹ As impacted by EN 50136-1:2012/A1:2018.

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ETSI EN 303 406, *Short Range Devices (SRD); Social Alarms Equipment operating in the frequency range 25 MHz to 1 000 MHz; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU*

ETSI EN 303 645, *CYBER; Cyber Security for Consumer Internet of Things: Baseline Requirements*

3 Terms, definitions and abbreviations**3.1 Terms and definitions**

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1.1**social alarm system**

system providing 24 hour facilities for alarm triggering, identification, signal transmission, alarm reception, 2-way speech communication, reassurance and assistance, for use by persons considered to be at risk

3.1.2**alarm receiving centre**

ARC

system part which provides facilities for communication with a number of controllers, and providing the alarm receiving and information processing system as an interface to the alarm recipient

3.1.3**alarm transmission service network**

ATSN

group of ATSNs of the same category

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Note 1 to entry: An ATSN consists of one or more ATSNs of the same category, functioning under supervision of the same management and monitoring centre.

3.1.4**communications**

transmission of data between the trigger device, local unit and controller and the ARC or an alarm recipient

3.1.5**controller**

interface between one or more local units and the alarm transmission system or alarm recipient, the controller normally includes the SPT as defined in EN 50136-2

3.1.6**local unit**

interface between the user and the controller which enables 2-way speech

3.1.7**trigger device**

system part, operated by a human or automatically that communicates to the local unit and controller, initiating the alarm triggering signal

3.1.8**logical alarm triggering**

combination of the presence or absence of data from one or more system parts which meets a predefined condition for the generation of an alarm triggering signal

Note 1 to entry: Logical triggering can be implemented in any part of the social alarm system.

3.1.9**device provisioning and management platform**

system for the technical administration of the equipment estate and may be capable of generating alarms

3.1.10**interconnections**

transmission system that provides the communication between trigger devices and local unit and controller

3.1.11**alarm transmission system**

ATS

alarm transmission equipment and networks used to transfer information concerned with the state of one or more local units and controllers to the annunciation equipment at one or more ARCs or an alarm recipient

Note 1 to entry: An ATS may consist of more than one ATP.

3.1.12**alarm transmission path**

ATP

route and alarm message travels between an individual alarm system and its associated annunciation equipment

Note 1 to entry: The ATP starts at the interface between the AS and STP and ends at the interface between the RCT and AE. For notification and surveillance purposes, the reverse direction may also be used.

3.1.13**pre-alarm condition**

condition following the reception of an alarm triggering signal

3.1.14**alarm condition**

condition following the pre-alarm condition

3.1.15**fault condition**

condition following detection of a fault by the local unit and controller, that prevents the functioning of the system

3.1.16**pre-alarm warning indication**

indication at the local unit that the local unit is in the pre-alarm condition

3.1.17**fault indication**

indication of a fault condition

3.1.18**reassurance indication**

indication provided locally in alarm condition in order to verify to the user that the local unit has received the alarm triggering signal