



SLOVENSKI STANDARD

SIST EN 50136-1:2012

01-marec-2012

Nadomešča:

SIST EN 50136-1-1:1999

SIST EN 50136-1-1:1999/A1:2001

SIST EN 50136-1-1:1999/A2:2008

SIST EN 50136-1-2:1999

SIST EN 50136-1-3:1999

SIST EN 50136-1-4:1999

SIST EN 50136-1-5:2008

Alarmni sistemi - Sistemi in oprema za prenos alarma - 1. del: Splošne zahteve za sisteme za prenos alarmov (standards.iteh.ai)

Alarm systems - Alarm transmission systems - Part 1: General requirements for alarm transmission systems

Alarmanlagen - Alarmübertragungsanlagen - Teil 1: Allgemeine Anforderungen an Alarmübertragungsanlagen

Systèmes d'alarme - Systèmes de transmission d'alarme - Partie 1: Exigences générales pour les systèmes de transmission d'alarme

Ta slovenski standard je istoveten z: EN 50136-1:2012

ICS:

13.320 Alarmni in opozorilni sistemi Alarm and warning systems

SIST EN 50136-1:2012

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 50136-1:2012

<https://standards.iteh.ai/catalog/standards/sist/b3a3d0fb-1938-4612-8eff-cf32f79d7e3a/sist-en-50136-1-2012>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 50136-1

January 2012

ICS 13.320

Supersedes EN 50136-1-1:1998 + A1:2001 + A2:2008, EN 50136-1-2:1998, EN 50136-1-3:1998, EN 50136-1-4:1998, EN 50136-1-5:2008

English version

**Alarm systems -
Alarm transmission systems and equipment -
Part 1: General requirements for alarm transmission systems**

Systemes d'alarme -
Systemes et equipements de transmission
d'alarme -
Partie 1: Exigences generales pour les
systemes de transmission d'alarme

Alarmanlagen -
Alarmübertragungsanlagen und -
einrichtungen -
Teil 1: Allgemeine Anforderungen an
Alarmübertragungsanlagen

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 50136-1:2012

This European Standard was approved by CENELEC on 2011-12-26. 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.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Contents

Foreword	4
1 Scope	5
2 Normative references	5
3 Object	5
4 Terms, definitions and abbreviations	5
4.1 Terms and definitions	5
4.2 Abbreviations	9
5 General requirements	10
5.1 ATS configuration	10
5.2 ATS categories	10
5.3 Applicable network standards	11
6 System requirements	11
6.1 General	11
6.2 Transmission link requirements	12
6.3 Performance	13
6.4 Securing of messages in the alarm transmission system	16
6.5 Alarm transmission acknowledgement	16
6.6 ATS generated alarms	16
6.7 Availability	17
6.8 Security	18
7 Verification of performance	19
7.1 General	20
7.2 ATSN performance	20
7.3 Transmission time	20
7.4 Verification interval	20
7.5 Availability	20
8 Documentation	22
Annex A (informative) ATS configurations examples	24
Annex B (informative) Availability examples	27
Annex C (informative) Verification of performance	28
C.1 Introduction	28
C.2 Set up configuration	28
C.3 System evaluation and functional verification	28
C.4 Functional verification	28
Annex D (normative) Classes for category C	30
Bibliography	32

Figures

Figure 1 — Logical representation of an ATS	23
Figure A.1 — Example of a simple single path alarm transmission system	24
Figure A.2 — Example of a simple dual path alarm transmission system	25
Figure A.3 — Example of a dual path alarm transmission system	26

Tables

Table 1 — ATS configuration	11
Table 2 — Transmission time	14
Table 3 — Maximum reporting time	15
Table 4 — RCT to AE alarm reporting.....	16
Table 5 — SPT to AS alarm reporting	17
Table 6 — ATS availability recording	18
Table 7 — ATSN availability	18
Table 8 — SPT substitution security requirements	19
Table 9 — Information security requirements.....	19
Table C.1 — Verification Results Table.....	29
Table D.1 — Transmission time classification.....	30
Table D.2 — Transmission time, maximum values	30
Table D.3 — Reporting time classification.....	30
Table D.4 — Availability classification	30
Table D.5 — Substitution security	31
Table D.6 — Information security	31

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 50136-1:2012

<https://standards.iteh.ai/catalog/standards/sist/b3a3d0fb-1938-4612-8eff-cf32f79d7e3a/sist-en-50136-1-2012>

Foreword

This document (EN 50136-1:2012) has been prepared by CLC Technical Body 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) 2012-12-26
- latest date by which the national standards conflicting with this document have to be withdrawn (dow) 2014-12-26

This document supersedes EN 50136-1-1:1998 + A1:2001 + A2:2008, EN 50136-1-2:1998, EN 50136-1-3:1998, EN 50136-1-4:1998 and EN 50136-1-5:2008.

The EN 50136 / CLC/TS 50136 series consists of the following parts, under the general title *Alarm systems — Alarm transmission systems and equipment*:

- Part 1 General requirements for alarm transmission systems;
- Part 2¹⁾ Requirements for Supervised Premises Transceiver (SPT);
- Part 3¹⁾ Requirements for Receiving Centre Transceiver (RCT);
- Part 4 Annunciation equipment used in alarm receiving centres;
- Part 5²⁾ (free);
- Part 6²⁾ (free);
- Part 7 Application guidelines.

iTech STANDARD PREVIEW
(standards.itech.ai)
SIST EN 50136-1:2012
<http://standards.itech.ai/catalog/standards/sist/b3a3d0fb-1938-4612-8eff-cf32f79d7e3a/sist-en-50136-1-2012>

1) At draft stage.

2) Under consideration.

1 Scope

This European Standard specifies the requirements for the performance, reliability and security characteristics of alarm transmission systems.

It specifies the requirements for alarm transmission systems providing alarm transmission between an alarm system at a supervised premises and annunciation equipment at an alarm receiving centre.

This European Standard applies to transmission systems for all types of alarm messages such as fire, intrusion, access control, social alarm, etc. Different types of alarm systems may in addition to alarm messages also send other types of messages, e.g. fault messages and status messages. These messages are also considered to be alarm messages in the context of this standard. The term alarm is used in this broad sense throughout the document.

Additional alarm transmission requirements of specific types of alarm systems are given in the relevant European 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 50136-2 ¹⁾		<i>Alarm systems — Alarm transmission systems and equipment — Part 2: Requirements for Supervised Premises Transceiver (SPT)</i>
EN 50136-3 ¹⁾		<i>Alarm systems — Alarm transmission systems and equipment — Part 3: Requirements for Receiving Centre Transceiver (RCT)</i>
ISO/IEC 10118	series	<i>Information technology — Security techniques — Hash-functions</i>
ISO/IEC 18033	series	<i>Information technology — Security techniques — Encryption algorithms</i>

3 Object

The object of this European Standard is to specify the general requirements for the performance, reliability, resilience and security of alarm transmission systems and to ensure their suitability for use with different types of alarm systems and annunciation equipment.

An alarm transmission system may use any type of transmission network.

When the ATS functions are integrated into an alarm system or annunciation equipment the requirements of this standard shall apply.

The intended users of this European Standard include alarm transmission service providers, alarm receiving centre operators, fire departments, insurance companies, telecommunication network operators, internet service providers, equipment manufacturers, alarm companies, end users and others.

4 Terms, definitions and abbreviations

4.1 Terms and definitions

For the purposes of this standard the following terms and definitions apply.

NOTE The definitions below should be read in conjunction with Figure 1.

4.1.1**alarm condition**

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

4.1.2**alarm receiving centre**

continuously manned centre to which information concerning the status of one or more AS is reported

4.1.3**alarm system**

electrical installation, which responds to the manual or automatic detection of the presence of a hazard

Note 1 to entry: The AS is not part of the ATS.

4.1.4**alarm transmission equipment**

collective term to describe SPT, MCT and RCT

4.1.5**alarm transmission path**

route an alarm message travels between an individual AS and its associated AE

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

4.1.6**alarm transmission service network**

group of ATSNs of the same category

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.

4.1.7**alarm transmission service provider**

person or an entity that is responsible for design, operation and the verification of performance of one or more ATSN

Note 1 to entry: The ATSP may take responsibility for the ATS provision and performance monitoring of one or more ATSN as the design authority, through contracts with customers, ARCs, transmission network operators, etc.

4.1.8**alarm transmission system**

ATE and networks used to transfer information concerned with the state of one or more ASs at a supervised premises to one or more AEs of one or more ARCs

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

4.1.9**ATS category**

set of parameters that define the performance requirements of an alarm transmission system

Note 1 to entry: A category defines minimum ATS requirements.

Note 2 to entry: The alarm system application should specify the appropriate ATS category.

Note 3 to entry: Where resilience and reliability are considered important for the Alarm System application, the use of a dual path ATS is recommended.

4.1.10**ATS management system**

part of the ATS that is used to manage alarm transmission equipment, supervise alarm transmission equipment and networks and may help to keep the ATS in operation

Note 1 to entry: The management system may also be used to collect data about the ATS availability.

4.1.11**ATS monitoring centre**

centre in which the status and performance of one or more ATS is monitored

Note 1 to entry: A monitoring centre may be a separate centre or part of an ARC.

Note 2 to entry: A monitoring centre may be the place where MCTs are located.

Note 3 to entry: A monitoring centre may be the place where a management system is located.

4.1.12**annunciation equipment**

equipment located at an ARC which secures and displays the alarm status, or the changed alarm status of ASs in response to the receipt of incoming alarms before sending a confirmation

Note 1 to entry: The AE is not part of the ATS.

4.1.13**authentication**

exchange of a code to identify that a SPT has not been substituted by a similar equipment without this code, or that the information message transmitted has not been modified

4.1.14**availability, general**

percentage of time a system or parts of a system are functioning in accordance with the requirements of this standard

4.1.15**diverse technology**

technologies used in transmission paths in such a way that a single point of failure, or tampering of a single point, cannot cause both ATPs of a dual path system to fail simultaneously

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 50136-1:2012](https://standards.iteh.ai/catalog/standards/sist/b3a3d0fb-1938-4612-8eff-cf32f79d7e3a/sist-en-50136-1-2012)

<https://standards.iteh.ai/catalog/standards/sist/b3a3d0fb-1938-4612-8eff-cf32f79d7e3a/sist-en-50136-1-2012>

4.1.16**dual path ATS**

ATS consisting of one primary ATP and one secondary ATP using diverse technology, having two transmission network interfaces at the SPT, to connect one or more AS of one supervised premises to one or more AEs of one or more ARCs

4.1.17**encryption**

systematic encoding of a bit stream before transmission, so that the information contained in the bit stream cannot be deciphered by an unauthorised party

4.1.18**fault condition**

condition of a system which prevents a system or part thereof from functioning normally

4.1.19**fault message/signal**

message or signal generated as a result of a fault condition

4.1.20**hashing technique**

use of a mathematical transformation that takes an input and returns a fixed-size string, which is called the hash value

Note 1 to entry: Hash value is used to detect any alteration of the input and therefore verify the contents in an easy way.

4.1.21**message**

series of transmitted signals which include identification, function data and the various means for providing its own integrity, immunity and proper reception

4.1.22**monitoring centre**

centre in which the status of one or more ATSNs is monitored

4.1.23**monitoring centre transceiver**

ATE within the ATS that enables monitoring and management information regarding the status of alarm transmission equipment and networks

Note 1 to entry: The monitoring centre transceiver may be located at the alarm receiving centre or at a separate centre.

4.1.24**multiple path ATS**

ATS where more than one independent ATPs are combined to connect one or more ASs of one supervised premises to one or more AEs of one or more ARCs

4.1.25**network equipment on site**

equipment that is part of the ATP, but is not considered to be ATE

4.1.26**packet switched network**

transmission network that uses packet switching

iTeh STANDARD PREVIEW
(standards.iteh.ai)

Note 1 to entry: Messages are broken into packets, which are addressed individually and routed through the network, possibly using different routes. At the end node the packets are re-assembled to be converted back to the original message.

Note 2 to entry: The most prominent example of a packet switched data network is the Internet, making use of the Internet protocol suite, which is specified by the internet engineering task force (IETF) in so called requests for comments (RFCs).

4.1.27**peer review**

when used in reference to cryptographic algorithms, means there is published evidence that the cryptographic community has confirmed the robustness of the algorithm against attack

4.1.28**receiving centre transceiver**

ATE at the ARC including the interface to one or more AE(s) and the interface to one or more transmission networks and being part of one or more ATPs

Note 1 to entry: In some systems this transceiver may be able to indicate changes of the status of an AS and to store log-files. This may be needed to increase the ATS availability in case of AE failure.

4.1.29**reporting time**

period from the time a fault occurs in the ATS until the fault information is reported to the RCT, the AS at the supervised premises and the MCT (if provided)

4.1.30**secured message**

message which cannot be lost (e.g.: in the case of power failure) and which can be retrieved

4.1.31**signalling security**

method(s) used to prevent or detect deliberate attempts to interfere with the transmission of an alarm by blocking or substitution

4.1.32**single path ATS**

ATS that consists of one ATP to connect one or more AS of one supervised premises to one or more AEs of one or more ARCs

4.1.33**supervised premises transceiver**

ATE at the supervised premises including the interface to the AS and the interface to one or more transmission networks and being part of one or more ATPs

4.1.34**system capacity**

maximum number of ASs that can be connected to an ATSN

4.1.35**transmission link**

part of a transmission network used to carry one or more ATPs

Note 1 to entry: An ATP can be established by switching together transmission links in several ways (in parallel, in series and in combinations thereof).

Note 2 to entry: A transmission link can carry several ATPs or sections of ATPs.

4.1.36**transmission network**

network between two or more items of ATE

Note 1 to entry: Where the network is provided by a common carrier (e.g. a public telephone network operator) the network may include items of general transmission equipment, which may not be covered by the requirements of EN 50136-2, e.g. public telephone network operator equipment, mobile telephone operator equipment, ADSL modems, SDSL modems, Routers, Ethernet switches, Ethernet hubs, Firewalls and network wiring.

4.1.37**transmission time**

time from when a change of state occurs or alarm message is presented for transmission at the SPT interface to the AS until the time that the new state or message is reported at the RCT interface to the AE

4.2 Abbreviations

For the purposes of alarm transmission standard documents from EN 50136 / CLC/TS 50136 series, the following abbreviations apply.

ADSL	Asymmetric Digital Subscriber Line
AE	Annunciation Equipment
ARC	Alarm Receiving Centre
AS	Alarm System
ATE	Alarm Transmission Equipment
ATP	Alarm Transmission Path
ATS	Alarm Transmission System
ATSN	Alarm Transmission Service Network
ATSP	Alarm Transmission Service Provider

DSL	Digital Subscriber Line
DTMF	Dual Tone Multi Frequency
GSM	Global System Mobile
ISO	International Standardisation Organisation
ISDN	Integrated Service Digital Network
MCT	Monitoring Centre Transceiver
OSI	Open Systems Interconnection
PSN	Packet Switched Network
PSTN	Public Switched Telephone Network
RCT	Receiving Centre Transceiver
SPT	Supervised Premises Transceiver
SDSL	Symmetric Digital Subscriber Line

ITeH STANDARD PREVIEW

5 General requirements (standards.iteh.ai)

5.1 ATS configuration

SIST EN 50136-1:2012

<https://standards.iteh.ai/catalog/standards/sist/b3a3d0fb-1938-4612-8eff-8124947c3a/sist-en-50136-1-2012>

The logical configuration of an ATS shall be as shown in Figure 1. The main function of an ATS is to provide a reliable and secure transmission network from the interface of the AS to the SPT to the interface of the RCT to the AE for the transmission of alarms.

Depending upon the required reliability and resilience of the ATS and the operational features of the ARC, various ATS configurations may be used, including the use of more than one ATP between an AS and one or more RCTs connected to one or more AEs. Each ATP shall have its own transmission network interface at the SPT.

NOTE For example an SPT may use a fixed line network and a radio network.

Selection of the category of ATS used for an AS shall be determined by the required reliability and security for the associated application. Reference should be made to the category of ATS required and the options that may be selected.

5.2 ATS categories

5.2.1 General

An alarm transmission system shall be selected from one of ten categories described by this European Standard. An ATS shall be allocated a category which will determine its performance and resilience.

Categories SP1 to SP6 are based on single ATP ATSs.

Categories DP1 to DP4 add resilience by requiring alternate ATPs.