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English Version

## Alarm systems - Social alarm systems - Part 9: IP Communications Protocol

Systèmes d'alarme - Systèmes d'alarme sociale - Partie 9:  
Protocole de communication IP

Alarmanlagen - Personen-Hilferufanlagen - Teil 9: IP  
Übertragungsprotokoll

This Technical Specification was approved by CENELEC on 2018-05-28.

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European Committee for Electrotechnical Standardization  
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## European foreword

This document (CLC/TS 50134-9:2018) has been prepared by CLC/TC 79 “Alarm systems”.

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.

EN 50134 consists of the following parts, under the general title *Alarm systems — Social alarm systems*:

- *Part 1: System requirements;*
- *Part 2: Trigger devices;*
- *Part 3: Local unit and controller;*
- *Part 5: Interconnections and communications;*
- *Part 7: Application guidelines;*
- *Part 9: IP Communications Protocol* [the present Technical Specification].

Annexes which are designated “informative” are given for information only.

## Introduction

As telecommunication operators continue to migrate towards Next Generation Networks they are increasingly converging voice traffic onto their IP infrastructures which may have an adverse impact on the reliability of in-call, tone based protocols.

The impact differs per country but is rapidly increasing across Europe. In addition, cellular technology is increasingly used next to broadband, cable and fibre solutions.

This Technical Specification defines the IP communications protocol for social alarms, optimized for stand-alone usage. The majority of current social alarms usage is stand-alone within the home and not related to other alarm systems. The combination of social alarms with other types of alarm systems is pending for a future version of this standard.

## 1 Scope

This Technical Specification specifies a protocol for point-to-point transmission of alarms, faults, control signals and communications monitoring, between a Local Unit and Controller and an Alarm Receiving Centre using the Internet protocol (IP). The protocol is intended for use over any network that supports the transmission of IP data with sufficient quality of service to support VoIP or a separate voice channel.

The Alarm Protocol is defined as an XML scheme including the alarm types, codes and necessary additional information.

The alarm protocol is an application layer protocol using another Internet Protocol as a transport protocol to handle addressing and transport functions. The transport protocol initially defined in this Technical Specification is SIP (Session Initiation Protocol).

The system performance characteristics for alarm transmission are specified in EN 50134-5. The performance characteristics of the Local Unit and Controller are expected to comply with the requirements of its associated alarm system standard and to apply for the transmission of social alarms.

The protocols described in this standard are based on the SS 91100:2014 SCAIP standard [7] and defined to enable backwards compatibility with existing products based on the SCAIP standard.

## 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 50134–1, *Alarm systems — Social alarm systems — Part 1: System requirements*

ISO 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times*

ITU X509, *Information technology — Open Systems Interconnection — The Directory: Public-key and attribute certificate frameworks*

RFC 2119, *Key words for use in RFCs to Indicate Requirement Levels*

[HTTP-AUTH] RFC 2617, *HTTP Authentication: Basic and Digest Access Authentication*

[SIP] RFC 3261, *SIP: Session Initiation Protocol*

[SDP] RFC 3264, *An Offer/Answer Model with the Session Description Protocol (SDP)*

[SIP-IM] RFC 3428, *Session Initiation Protocol (SIP) Extension for Instant Messaging*

[RTP] RFC 3550, *RTP: A Transport Protocol for Real-Time Applications*

[SRTP] RFC 3711, *The Secure Real-time Transport Protocol (SRTP)*

[SDP-SEC] RFC 4568, *Session Description Protocol (SDP) - Security Descriptions for Media Streams*

[RTP-DTMF] RFC 4733, *RTP Payload for DTMF Digits, Telephony Tones, and Telephony Signals*

[ICE] RFC 5245, *Interactive Connectivity Establishment (ICE): A Protocol for Network Address Translator (NAT) Traversal for Offer/Answer Protocols*

[STUN] RFC 5389, *Session Traversal Utilities for NAT (STUN)*

- [SRTP-DTLS] RFC 5764, *Datagram Transport Layer Security (DTLS) Extension to Establish Keys for the Secure Real-time Transport Protocol (SRTP)*
- [TURN] RFC 5766, *Traversal Using Relays around NAT (TURN): Relay Extensions to Session Traversal Utilities for NAT (STUN)*
- [SIP-ICE] RFC 5768, *Indicating Support for Interactive Connectivity Establishment (ICE) in the Session Initiation Protocol (SIP)*
- RFC 5870, *A Uniform Resource Identifier for Geographic Locations ('geo' URI)*
- [SIP-NAT] RFC 6314, *NAT Traversal Practices for Client-Server SIP*
- G.711 (11/88), *Pulse code modulation (PCM) of voice frequencies*
- G.729 (06/12), *Coding of speech at 8 kbit/s using conjugate-structure algebraic-code-excited linear prediction (CS-ACELP)*

### 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:

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

#### 3.1

##### **alarm receiver**

##### **alarm receiving centre**

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

#### 3.2

##### **codec**

device capable of encoding and decoding a digital data stream or signal

#### 3.3

##### **controller**

##### **alarm sender**

interface between one or more Local Units and the alarm transmission system or alarm recipient

#### 3.4

##### **heartbeat**

periodic event generated by hardware or software to indicate normal operation or to synchronize parts of a system

#### 3.5

##### **in-band signalling**

sending of control information within the same band or channel used for voice

#### 3.6

##### **interconnections**

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