SLOVENSKI STANDARD
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SIST EN 50132-5:2001

Alarmni sistemi - Nadzorni sistemi CCTV za uporabo v aplikacijah varovanja - 5-2. del: Video prenos IP

Alarm systems - CCTV surveillance systems for use in security applications - Part 5-2: IP Video Transmission Protocols

Alarmanlagen - CCTV-Überwachungsanlagen für Sicherungsanwendungen -- Teil 5-2: IP Video Übertragung Protokolle

Systèmes d'alarme - Systèmes de surveillance CCTV à usage dans les applications de sécurité - Partie 5-2: Protocoles de Transmission de Vidéo d'IP

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ICS:

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English version

Alarm systems - CCTV surveillance systems for use in security applications - Part 5-2: IP Video Transmission Protocols

Systèmes d'alarme - Systèmes de surveillance CCTV à usage dans les applications de sécurité - Partie 5-2: Protocoles de Transmission de Vidéo d'IP

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
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Foreword

This document (EN 50132-5-2:2011) 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)	2012-10-31
• latest date by which the national standards conflicting with this document have to be withdrawn	(dow)	2014-10-31

This document partially supersedes EN 50132-5:2001 and introduces the new video transmission methology based on IP protocols into the standard series.

EN 50132 consists of the following parts, under the generic title *"Alarm systems – CCTV surveillance systems for use in security applications"*:

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Part 1 System requirements

Part 5-1 Video transmission – General Video Transmission Performance Requirements

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Part 5-2 IP Video Transmission Protocols

Part 5-3 Video transmission – Analog and Digital Video Transmission

Part 7 Application guidelines

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

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Introduction

The European Electrotechnical Standardisation Organisation for Alarm Systems together with many governmental organisations, test houses and equipment manufacturers has defined a common framework for Surveillance Video Transmission in order to achieve interoperability between products.

This Video transmission standard is divided into 3 independent parts and sections:

Part 1: General video transmission performance requirements

Part 2: IP Video transmission protocols

Part 3: Analog and digital video transmission

Each part offers its own clauses on scope, references, definitions, requirements

The purpose of the transmission system in a closed circuit television (CCTV) installation is to provide reliable transmission of video signals between the different types of CCTV equipment in security, safety and monitoring applications.

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Today CCTV surveillance systems reside in security networks using IT infrastructure, equipment and connections within the protected site itself.

This standard EN 50132-5-2 on network video ip protocol and interface definitions for video devices in surveillance applications is based on the general requirements for video transmission of EN 50132-5-1. Part 1 defines minimum IP connectivity requirements, basic video streaming, stream control, eventing, discovery and description functions, where this Part 2 is based on. Additionally Part 1 establishes minimum performance requirements, including interconnection, network video devices. EN 50132-7 Application Guidelines give guidance for Video Surveillance Installations in general, but takes special care of video ip networks. Any video transmission network should be designed in accordance with these standards. With prEN 50132-5-3 a detailed standard for non IP video transmission is defined. For signal and performance requirements on analog and uncompressed digital video transmission and interfaces this part 3 of the standard series shall be applied.

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1 Scope

This European Standard introduces an IP network interface for devices in surveillance applications. In this part of the standard a network protocol is specified for the full interoperability of video devices. EN 50132-5-1 specifies the minimum network performance standards and general compliance to existing, well-known international network standards. On top of these basic layers protocols are defined to accomplish the full interoperability of video devices. In surveillance applications IP video devices have to use standardized protocols to accomplish following functionality: video streaming, stream control, event handling, discovery, capability description, device management, PTZ control, auxiliaries and other functions.

This European Standard consists of 3 sections. The first section defines protocol requirements to be fulfilled by any high-level IP video device interface.

The following two sections – Annex I and Annex II- define two alterative protocols, one is based on HTTP and REST services and the second is based on Web Services.

In the future a third high-level IP protocol may be defined in Annex III, which grants compatibility to the requirements of this standard series. Today no third IP video protocol implementation is available.

Some areas of this transmission standard are covered by more than one approach, e.g. UPnP, ZeroConf and WS-Discovery.

The network protocols recommended and defined by this Video Transmission Standard are selected with a sense for future relevance and further extensions.

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Video transmission equipment may be combined with additional functions, e.g. for audio or metadata transmission.

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2 Normative references

The following referenced documents are indispensable for the application 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 50132-1, *Alarm systems — CCTV surveillance systems for use in security applications — Part 1: System requirements*

EN 50132-5-1, *Alarm systems — CCTV surveillance systems for use in security applications — Part 5-1: Video transmission — General video transmission performance requirements*

EN 50132-7, *Alarm systems — CCTV surveillance systems for use in security applications — Part 7: Application guidelines*

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3 Terms, definitions and abbreviations

3.1 Definitions

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

3.1.1
adapter
component (harware or software) offering two interfaces that enable something to be used in a different way from which is was intended, in order to make different components or applications compatible

3.1.2
agent
process e.g. software application on a network device or node that is responsible for all SNMP messages initiating traps and informs on detecting exceptional conditions in the network device and accepting requests from the SNMP manager with a replay of the requested data

3.1.3
analog
form of information that is represented by a continuous and smoothly varying amplitude or frequency changes over a certain range

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3.1.4
analog video
video signal made of a continuous electrical signal

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3.1.5
Application Program Interface (API)
set of interfaces for developers to interact with a component or application

3.1.6
Abstract Syntax Notation One (ASN.1)
description language used to describe SNMP data types in machine architecture-independent format

3.1.7
bandwidth
property of networks to describe the amount of data that can be carried from one point in the network to another in a given time period, usually a second, affected in video surveillance by frame rate, image resolution, compression ratio, image noise, complexity detail of a monitored scene

3.1.8
binding
associating an interface, a valid data format, and a concrete protocol to ensure smooth message transmission

3.1.9
camera presets
pre-defined camera angles, locations, and distances of PTZ cameras assigned with a number

3.1.10
capability
named piece of functionality (or feature) that is declared as supported or requested by an agent

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3.1.11
capturing
process of transferring video from one source to another for use on a digital video device, network or stoarage, e.g. convertion of analog to digital

3.1.12
CCTV network
video surveillance system based on an ip video network used within a protected site

3.1.13
channel
one or more streams of video, audio and/or metadata that together constitute a unique entity for the purpose of surveillance

3.1.14
Common Intermediate Format (CIF)
video format used in video conferencing systems that supports both NTSC and PAL signals. CIF is part of the ITU H.261 video conferencing standard

3.1.15
codec
abbreviation of compression/decompression algorithm, used to encode and decode, or compress and decompress data, such as video

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3.1.16
component
software or hardware object, meant to interact with other components, encapsulating certain functionality or a set of functionalities with clearly defined interfaces and conforming to a prescribed behavior common to all components within a standard

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3.1.17
configuration policy
in SNMP one or more security groups including the assigned users or communities

NOTE SNMP agents that will be configured using the new policy should support the security models and security levels defined for the security groups selected. For example, a policy containing an SNMPv3 user configuration should not be configured on an agent that supports only SNMPv1 and/or SNMPv2c.

3.1.18
connectionless protocols
individual routing of packets between network correspondents without pre-establishing a "connection"

EXAMPLE IP protocol, UDP

3.1.19
connection-oriented protocols
transmission of packets between network correspondents along predetermined routes which are established at connection setup

EXAMPLE TCP

3.1.20
DES encryption
Data Encryption Standard as privacy protocol used to protect messages in transit across networks