This document is a preview generated by EVS

TURVARAKENDUSTES KASUTATAVAD VIDEOVALVESÜSTEEMID. OSA 2-33: VIDEO EDASTUSPROTOKOLLID. PILVEPÕHINE ÜLESLÜLI JA KAUGHALDUSE JUURDEPÄÄS

Video surveillance systems for use in security applications - Part 2-33: Video transmission protocols - Cloud uplink and remote management system access

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 62676-2-33:2022 sisaldab Euroopa standardi EN IEC 62676-2-33:2022 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62676-2-33:2022 consists of the English text of the European standard EN IEC 62676-2-33:2022.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 16.09.2022.	Date of Availability of the European standard is 16.09.2022.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

This document is a preview generated by EVS

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.320

Standardite reprodutseerimise ja levitamise õigus kuulub Eesti Standardimis- ja Akrediteerimiskeskusele

Andmete paljundamine, taastekitamine, kopeerimine, salvestamine elektroonsesse süsteemi või edastamine ükskõik millises vormis või millisel teel ilma Eesti Standardimis-ja Akrediteerimiskeskuse kirjaliku loata on keelatud.

Kui Teil on küsimusi standardite autorikaitse kohta, võtke palun ühendust Eesti Standardimis-ja Akrediteerimiskeskusega: Koduleht www.evs.ee; telefon 605 5050; e-post info@evs.ee

The right to reproduce and distribute standards belongs to the Estonian Centre for Standardisation and Accreditation

No part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, without a written permission from the Estonian Centre for Standardisation and Accreditation.

If you have any questions about copyright, please contact Estonian Centre for Standardisation and Accreditation:

Homepage www.evs.ee; phone +372 605 5050; e-mail info@evs.ee

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62676-2-33

September 2022

ICS 13.320

This document is a preview generated by EVS

English Version

Video surveillance systems for use in security applications - Part 2-33: Video transmission protocols - Cloud uplink and remote management system access (IEC 62676-2-33:2022)

Systèmes de vidéosurveillance destinés à être utilisés dans les applications de sécurité - Partie 2-33: Protocoles de transmission vidéo - Liaison montante au nuage et accès au système de gestion à distance (IEC 62676-2-33:2022)

Videoüberwachungsanlagen für Sicherungsanwendungen - Teil 2-33: Cloud-Uplink und Fernzugriff von Managementsystemen (IEC 62676-2-33:2022)

This European Standard was approved by CENELEC on 2022-08-26. 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, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2022 CENELEC All rights of exploitation in any form and by any means reserved worldwide for CENELEC Members.

European foreword

The text of document 79/658/FDIS, future edition 1 of IEC 62676-2-33, prepared by IEC/TC 79 "Alarm and electronic security systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62676-2-33:2022.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2023-05-26
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2025-08-26

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.

Endorsement notice

The text of the International Standard IEC 62676-2-33:2022 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60839-11-32	NOTE	Harmonized as EN 60839-11-32
IEC 60839-11-33	NOTE	Harmonized as EN IEC 60839-11-33
IEC 62676-2-31	NOTE	Harmonized as EN IEC 62676-2-31
IEC 62676-2-32	NOTE	Harmonized as EN IEC 62676-2-32

This document is a preview generated by EVS

IEC 62676-2-33

Edition 1.0 2022-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Video surveillance systems for use in security applications – Part 2-33: Video transmission protocols – Cloud uplink and remote management system access

Systèmes de vidéosurveillance destinés à être utilisés dans les applications de sécurité – Partie 2-33: Protocoles de transmission vidéo – Liaison montante au nuage et accès au système de gestion à distance

This document is a preview generated by EVS

IEC 62676-2-33:2022-07(en-fr)

THIS PUBLICATION IS COPYRIGHT PROTECTED
Copyright © 2022 IEC, Geneva, Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either IEC or IEC's member National Committee in the country of the requester. If you have any questions about IEC copyright or have an enquiry about obtaining additional rights to this publication, please contact the address below or your local IEC member National Committee for further information.

Droits de reproduction réservés. Sauf indication contraire, aucune partie de cette publication ne peut être reproduite ni utilisée sous quelque forme que ce soit et par aucun procédé, électronique ou mécanique, y compris la photocopie et les microfilms, sans l'accord écrit de l'IEC ou du Comité national de l'IEC du pays du demandeur. Si vous avez des questions sur le copyright de l'IEC ou si vous désirez obtenir des droits supplémentaires sur cette publication, utilisez les coordonnées ci-après ou contactez le Comité national de l'IEC de votre pays de résidence.

IEC Secretariat
3, rue de Varembé
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
info@iec.ch
www.iec.ch

About the IEC
The International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes International Standards for all electrical, electronic and related technologies.

About IEC publications
The technical content of IEC publications is kept under constant review by the IEC. Please make sure that you have the latest edition, a corrigendum or an amendment might have been published.

IEC publications search - webstore.iec.ch/advsearchform
The advanced search enables to find IEC publications by a variety of criteria (reference number, text, technical committee, …). It also gives information on projects, replaced and withdrawn publications.

IEC Just Published - webstore.iec.ch/justpublished
Stay up to date on all new IEC publications. Just Published details all new publications released. Available online and once a month by email.

IEC Customer Service Centre - webstore.iec.ch/csc
If you wish to give us your feedback on this publication or need further assistance, please contact the Customer Service Centre: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch
Discover our powerful search engine and read freely all the publications previews. With a subscription you will always have access to up to date content tailored to your needs.

Electropedia - www.electropedia.org
The world's leading online dictionary on electrotechnology, containing more than 22 300 terminological entries in English and French, with equivalent terms in 19 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

A propos de l'IEC
La Commission Electrotechnique Internationale (IEC) est la première organisation mondiale qui élabore et publie des Normes internationales pour tout ce qui a trait à l'électricité, à l'électronique et aux technologies apparentées.

A propos des publications IEC
Le contenu technique des publications IEC est constamment revu. Veuillez vous assurer que vous possédez l'édition la plus récente, un corrigendum ou amendement peut avoir été publié.

Recherche de publications IEC - webstore.iec.ch/advsearchform
La recherche avancée permet de trouver des publications IEC en utilisant différents critères (numéro de référence, texte, comité d'études, …). Elle donne aussi des informations sur les projets et les publications remplacées ou retirées.

IEC Just Published - webstore.iec.ch/justpublished
Restez informé sur les nouvelles publications IEC. Just Published détaille les nouvelles publications parues. Disponible en ligne et une fois par mois par email.

Service Clients - webstore.iec.ch/csc
Si vous désirez nous donner des commentaires sur cette publication ou si vous avez des questions contactez-nous: sales@iec.ch.

IEC Products & Services Portal - products.iec.ch
Découvrez notre puissant moteur de recherche et consultez gratuitement tous les aperçus des publications. Avec un abonnement, vous aurez toujours accès à un contenu à jour adapté à vos besoins.

Electropedia - www.electropedia.org
Le premier dictionnaire d'électrotechnologie en ligne au monde, avec plus de 22 300 articles terminologiques en anglais et en français, ainsi que les termes équivalents dans 19 langues additionnelles. Egalement appelé Vocabulaire Electrotechnique International (IEV) en ligne.

This document is a preview generated by EVS

IEC 62676-2-33

Edition 1.0 2022-07

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

This document is a preview generated by EVS

Video surveillance systems for use in security applications – Part 2-33: Video transmission protocols – Cloud uplink and remote management system access

Systèmes de vidéosurveillance destinés à être utilisés dans les applications de sécurité – Partie 2-33: Protocoles de transmission vidéo – Liaison montante au nuage et accès au système de gestion à distance

INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 13.320

ISBN 978-2-8322-3973-5

Warning! Make sure that you obtained this publication from an authorized distributor.
Attention! Veuillez vous assurer que vous avez obtenu cette publication via un distributeur agréé.

® Registered trademark of the International Electrotechnical Commission
Marque déposée de la Commission Electrotechnique Internationale

CONTENTS

FOREWORD 4
INTRODUCTION 6
1 Scope 7
2 Normative references 7
3 Terms and definitions 7
4 Overview 8
4.1 General 8
4.2 Remote access 8
4.3 Cloud uplink 9
5 Requirements 10
5.1 General 10
5.2 Functional requirements 10
5.3 Protocol requirements 11
6 Resource addressing 11
6.1 Token based addressing 11
6.2 Remote tokens 12
6.3 Token context 12
7 Resource queries 12
7.1 General 12
7.2 Resource event 13
7.3 Location filter 13
7.4 Prefix filter 14
7.5 Scope filter 14
7.6 Select filter 14
7.7 Live checks 15
7.8 Informative examples 15
7.8.1 Live video 15
7.8.2 Forensic 15
8 Uplink 16
8.1 Protocol 16
8.1.1 Connection establishment 16
8.1.2 Connection management 16
8.1.3 Authentication 17
8.1.4 HTTP/2 frames 17
8.1.5 HTTP transactions 17
8.2 Configuration interface 17
8.2.1 Configuration parameters 17
8.2.2 GetUplinks 17
8.2.3 SetUplink 18
8.2.4 DeleteUplink 18
8.2.5 Capabilities 18
Annex A (informative) Addressing scheme 19
A.1 Overview 19
A.2 Field definitions 19
A.2.1 Zone code 19
A.2.2 Agency code 19

This document is a preview generated by EVS

A.2.3 Device type code 20
A.2.4 Serial number 22
A.2.5 Examples 22
Annex B (informative) APIs with token adaption 24
B.1 General 24
B.2 Consuming live video 24
B.3 Controlling PTZ cameras 24
B.4 Retrieving recordings 24
B.5 Forwarding of events 24
Bibliography 25

Figure 1 – Hierarchical system example 9
Figure 2 – Standard connection initiated from the client 9
Figure 3 – Connection initiation from the device 10
Figure 4 – Connection initiation sequence 16
Figure A.1 – Fields of the device ID scheme 19

Table A.1 – The zone code elements 19
Table A.2 – Industry coding 20
Table A.3 – Device type codes 21
Table A.4 – Serial number value 22

This document is a preview generated by EVS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

_____

VIDEO SURVEILLANCE SYSTEMS FOR USE IN SECURITY APPLICATIONS –

Part 2-33: Video transmission protocols – Cloud uplink and remote management system access

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
6) All users should ensure that they have the latest edition of this publication.
7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

IEC 62676-2-33 has been prepared by IEC technical committee 79: Alarm and electronic security systems. It is an International Standard.

The text of this International Standard is based on the following documents:

Draft	Report on voting
79/658/FDIS	79/666/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document is a preview generated by EVS

A list of all the parts in the IEC 62676 series, under the general title *Video surveillance systems for use in security applications*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

The committee has decided that the contents of this document will remain unchanged until the stability date indicated on the IEC website under webstore.iec.ch in the data related to the specific document. At this date, the document will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The "colour inside" logo on the cover page of this document indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

This document is a preview generated by EVS

INTRODUCTION

Surveillance systems are important in public safety projects to maintain law and order as well as public safety, and to assist the police to perform forensic analysis. Due to organizational and security reasons, large-scale surveillance systems are split in segments, which can lead to information silos. This document provides a standardized interface for management systems such that authorized entities can easily access remote information using the same mechanism they are using today for accessing local information.

This document is a preview generated by EVS

VIDEO SURVEILLANCE SYSTEMS FOR USE IN SECURITY APPLICATIONS –

Part 2-33: Video transmission protocols - Cloud uplink and remote management system access

This document is a preview generated by EVS

1 Scope

This document specifies management systems interfaces and mechanisms for remote operational access to physical security devices such as video surveillance devices and systems. For video surveillance, the use cases focus on accessing live video and retrieving recordings. The mechanisms defined in this document are not restricted to surveillance applications, but also cover remote access to security systems and electronic access control systems. Configuration of devices and management systems is out of the scope of this document.

Clause 4 introduces remote management access. Clause 5 defines a set of requirements that the protocol needs to fulfil. Clause 6 extends the token-based resource-addressing scheme of IEC 60839-11-31. Clause 7 describes how to retrieve information about remote resources. Clause 8 defines how to connect to devices that are not directly reachable because they are for instance located behind firewalls.

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.

IEC 60839-11-31, *Alarm and electronic security systems – Part 11-31: Electronic access control systems – Core interoperability protocol based on Web services*

IETF RFC 4122, *A Universally Unique IDentifier (UUID) URN Namespace*

IETF RFC 5246, *The Transport Layer Security (TLS) Protocol*, Version 1.2

IETF RFC 6125, *Representation and Verification of Domain-Based Application Service Identity within Internet Public Key Infrastructure Using X.509 (PKIX) Certificates in the Context of Transport Layer Security (TLS)*

IETF RFC 7540, *Hypertext Transfer Protocol Version 2 (HTTP/2)*

3 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