

INTERNATIONAL STANDARD

**Common control interface for networked digital audio and video products –
Part 5-2: Transmission over networks – Signalling**





THIS PUBLICATION IS COPYRIGHT PROTECTED

Copyright © 2014 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.

IEC Central Office
3, rue de Varembe
CH-1211 Geneva 20
Switzerland

Tel.: +41 22 919 02 11
Fax: +41 22 919 03 00
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 corrigenda or an amendment might have been published.

IEC Catalogue - webstore.iec.ch/catalogue

The stand-alone application for consulting the entire bibliographical information on IEC International Standards, Technical Specifications, Technical Reports and other documents. Available for PC, Mac OS, Android Tablets and iPad.

IEC publications search - www.iec.ch/searchpub

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 It also gives information on projects, replaced and withdrawn publications.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 also once a month by email.

Electropedia - www.electropedia.org

The world's leading online dictionary of electronic and electrical terms containing more than 20 000 terms and definitions in English and French, with equivalent terms in 14 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - www.iec.ch/glossary

More than 55 000 electrotechnical terminology entries in English and French extracted from the Terms and Definitions clause of IEC publications issued since 2002. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

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: csc@iec.ch.



IEC 62379-5-2

Edition 1.0 2014-03

INTERNATIONAL STANDARD

Common control interface for networked digital audio and video products –
Part 5-2: Transmission over networks – Signaling

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

PRICE CODE **XA**

ICS 33.160; 35.100

ISBN 978-2-8322-1455-8

Warning! Make sure that you obtained this publication from an authorized distributor.

CONTENTS

FOREWORD.....	5
INTRODUCTION.....	7
1 Scope.....	8
2 Normative references.....	8
3 Terms and definitions.....	8
4 Identification.....	10
4.1 Byte order.....	10
4.2 Unit identification.....	10
4.3 Flow identifiers.....	10
4.4 Address format.....	11
5 Message format.....	12
5.1 General.....	12
5.2 Header.....	13
5.3 Variable part.....	14
5.3.1 General.....	14
5.3.2 Information element format.....	14
5.3.3 Order of occurrence of information elements.....	15
5.4 Data formats.....	16
5.5 Contents of fixed and variable parts.....	16
5.5.1 FindRoute messages.....	16
5.5.2 ClearDown messages.....	16
5.5.3 AddFlow messages.....	16
5.5.4 NetworkData and EndToIn Data messages.....	16
5.5.5 AsyncSetup messages.....	17
5.5.6 Extended message types.....	17
5.6 Information element types.....	17
5.6.1 Coding of "type" field.....	17
5.6.2 Called address.....	18
5.6.3 Flow descriptor.....	18
5.6.4 Data format or protocol.....	19
5.6.5 Start time.....	19
5.6.6 End time.....	19
5.6.7 Call importance.....	19
5.6.8 Service (or programme) name.....	19
5.6.9 Source name.....	19
5.6.10 Destination name.....	20
5.6.11 Privilege level.....	20
5.6.12 Password.....	20
5.6.13 Charge for call.....	20
5.6.14 Calling address.....	20
5.6.15 Route metric.....	20
5.6.16 Synchronous service parameters.....	21
5.6.17 Asynchronous service parameters.....	21
5.6.18 Link-specific resource allocations.....	22
5.6.19 End-to-end delay.....	22

5.6.20	Route identifier of multicast	22
5.6.21	Cause.....	23
5.6.22	Route and flow selection.....	23
5.6.23	Alternatives	23
5.6.24	Group	23
5.6.25	Interim offer.....	24
5.6.26	Path MTU	24
5.6.27	Number of destinations.....	25
5.6.28	Selector for an individual destination	25
5.6.29	User data	25
5.6.30	Extended IE types	25
6	Protocols.....	26
6.1	General.....	26
6.2	Establishing a route.....	27
6.2.1	Connection of flows	27
6.2.2	Request message.....	27
6.2.3	Action on receiving a FindRoute request	29
6.2.4	Action on receiving on a FindRoute response.....	31
6.2.5	Passing on a FindRoute confirmation	33
6.2.6	Action of the responder on receiving a FindRoute confirmation.....	33
6.2.7	FindRoute completion message.....	33
6.3	Disconnection of routes and flows	34
6.3.1	General	34
6.3.2	ClearDown request message	34
6.3.3	Action on receiving a ClearDown request message.....	35
6.4	Adding new flows to an existing route.....	35
6.5	Information messages related to a route.....	35
6.5.1	General	35
6.5.2	Notification of the number of destinations	36
6.5.3	Changing service parameters	36
6.5.4	Out-of-band data.....	36
6.6	Quasi-connectionless service.....	36
6.6.1	General	36
6.6.2	Request message.....	36
6.6.3	Action on receiving request	37
7	Media formats	37
7.1	Identification.....	37
7.2	Packet data	37
7.2.1	General packet data	37
7.2.2	Other packet formats	38
7.3	Pulse-code modulated audio	38
7.3.1	Rationale.....	38
7.3.2	Sequencing octet.....	38
7.3.3	Subframe format.....	39
7.3.4	Frame format.....	39
7.3.5	Transport.....	40
7.3.6	Signalling of format.....	40
8	Cause codes	42
8.1	ITU-T standard cause codes.....	42

8.2 Other cause codes	42
Annex A (informative) Background.....	43
Bibliography.....	52
Figure 1 – Structure of flow identifier	10
Figure 2 – Signalling message format	13
Figure 3 – Signalling message header	13
Figure 4 – Information element header.....	15
Figure 5 – Information element with a nonempty fixed part and a variable part.....	15
Figure 6 – Fixed part of FlowDescriptor IE	8
Figure 7 – Fixed part of multicast route identifier IE	22
Figure 8 – Sequencing octet	38
Figure 9 – “Short” bit string value.....	38
Figure 10 – “Long” bit string value	39
Table 1 – Address type codes.....	12
Table 2 – Message class	13
Table 3 – Message type.....	14
Table 4 – Information element types	17

Currently in preview, click buy full version

INTERNATIONAL ELECTROTECHNICAL COMMISSION

**COMMON CONTROL INTERFACE FOR NETWORKED
DIGITAL AUDIO AND VIDEO PRODUCTS –****Part 5-2: Transmission over networks –
Signalling**

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, accept 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.

International Standard IEC 62379-5-2 has been prepared by technical area 4: Digital system interfaces and protocols of IEC technical committee 100: Audio, video and multimedia systems and equipment.

The text of this standard is based on the following documents:

CDV	Report on voting
100/2050/CDV	100/2158/RVC

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

A list of all parts in the IEC 62379 series, published under the general title *Common control interface for networked digital audio and video products*, can be found on the IEC website.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.

Currently in preview, click buy full version

INTRODUCTION

IEC 62379 specifies the Common Control Interface, a protocol for managing networked audiovisual equipment. The following parts exist or are planned:

- 1 General
- 2 Audio
- 3 Video
- 4 Data
- 5 Transmission over networks
- 6 Packet transfer service
- 7 Measurement

IEC 62379-1:2007 specifies aspects which are common to all equipment, and it includes an introduction to the Common Control Interface.

IEC 62379-2:2008, IEC 62379-3 (under consideration) and IEC 62379-4 (under consideration) specify control of internal functions specific to equipment carrying particular types of live media. IEC 62379-4 refers to time-critical data such as commands to automation equipment, but not to packet data such as the control messages themselves.

IEC 62379-5 specifies control of transmission of these media over each individual network technology. It includes network specific management interfaces along with network specific control elements that integrate into the control framework.

IEC 62379-5-1 specifies management of aspects which are common to all network technologies. IEC 62379-5-3 onwards specify management of aspects which are particular to individual networking technologies.

IEC 62379-5-2 (this standard) specifies protocols which can be used between networking equipment to enable the setting up of calls which are routed across different networking technologies.

IEC 62379-6 specifies carriage of control and status messages and non-audiovisual data over transports that do not support audio and video, such as RS232 serial links, with (as for IEC 62379-5) a separate support for each technology.

IEC 62379-7 specifies aspects that are specific to the measurement of the service experienced by audio and video streams and in particular to the requirements of EBU ECN-IPM Measurements Group.

COMMON CONTROL INTERFACE FOR NETWORKED DIGITAL AUDIO AND VIDEO PRODUCTS –

Part 5-2: Transmission over networks – Signalling

1 Scope

This part of IEC 62379 specifies protocols which can be used between networking equipment to enable the setting up of calls which are routed across different networking technologies.

It also specifies encapsulation of digital media within those calls.

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.

IEC 60958 (all parts), *Digital audio interface*

IEC 62365:2009, *Digital audio – Digital input-output interfacing – Transmission of digital audio over asynchronous transfer mode (ATM) networks*

IEC 62379 (all parts), *Common control interface for networked digital audio and video products*

IEC 62379-1, *Common control interface for networked digital audio and video products – Part 1: General*

IEC 62379-2:2008, *Common control interface for networked digital audio and video products – Part 2: Audio*

IEC 62379-5-1, *Common control interface for networked digital audio and video products – Part 5-1: Transmission over networks – General*¹

ITU-T Recommendation Q.850, *Usage of cause and location in the digital subscriber signalling system No. 1 and the signalling system No.7 ISDN used part*

AES 3, *AES standard for digital audio – Digital input-output interfacing – Sample-accurate timing in AES47* (Audio Engineering Society, New York, NY, USA)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62379-1 and the following apply.

¹ To be published.