Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 -- Part 2: Burst-info

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EVS **EESTI STANDARDIKESKUS**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 61937-2:2007 sisaldab Euroopa standardi EN 61937-2:2007 ingliskeelset teksti.	This Estonian standard EVS-EN 61937-2:2007 consists of the English text of the European standard EN 61937-2:2007.
Käesolev dokument on jõustatud 23.11.2007 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.	This document is endorsed on 23.11.2007 with the notification being published in the official publication of the Estonian national standardisation organisation.
Standard on kättesaadav Eesti standardiorganisatsioonist.	The standard is available from Estonian standardisation organisation.

Käsitlusala: This part of IEC 61970 specifies the digital audio interface to convey non-linear PCM encoded audio bitstreams applying IEC 60958-1 and IEC 60958-3. This standard specifies burst-info which defines content information about the data contained in the burst payload.	**Scope:** This part of IEC 61970 specifies the digital audio interface to convey non-linear PCM encoded audio bitstreams applying IEC 60958-1 and IEC 60958-3. This standard specifies burst-info which defines content information about the data contained in the burst payload.

ICS 33.160.30

Võtmesõnad:

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 61937-2

September 2007

ICS 33.160.30

English version

Digital audio -
Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 -
Part 2: Burst-info
(IEC 61937-2:2007)

Audionumérique -
Interface pour les flux de bits audio
à codage MIC non linéaire
conformément à la CEI 60958 -
Partie 2: Salve d'informations
(CEI 61937-2:2007)

Digitalton -
Schnittstelle für nichtlinear-PCM-codierte
Audio-Bitströme unter Verwendung
von IEC 60958 -
Teil 2: Block-Information
(IEC 61937-2:2007)

This European Standard was approved by CENELEC on 2007-09-01. 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 Central Secretariat or to any CENELEC member.

This European Standard exists in two official versions (English and 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, 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 and the United Kingdom.

CENELEC

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 61937-2:2007 E

Foreword

The text of document 100/1115/CDV, future edition 2 of IEC 61937-2, prepared by Technical Area 4, of IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel Unique Acceptance Procedure and was approved by CENELEC as EN 61937-2 on 2007-09-01.

This European Standard supersedes EN 61937-2:2003.

EN 61937-2:2007 contains the following significant technical changes with respect to EN 61937-2:2003:

– new audio data-types of enhanced AC-3 data, MPEG-2 AAC low sampling frequency, MPEG-4 AAC, DTS type IV, ATRAC-X, WMA professional and MAT are added;

– data-type field in Pc is expanded from bit 0-4 to 0-6.

The following dates were fixed:

– latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2008-06-01

– latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2010-09-01

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 61937-2:2007 was approved by CENELEC as a European Standard without any modification.

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Annex ZA
(normative)

Normative references to international publications
with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60958-1	- [1]	Digital audio interface - Part 1: General	EN 60958-1	2004 [2]
IEC 60958-3	- [1]	Digital audio interface - Part 3: Consumer applications	EN 60958-3	2006 [2]
IEC 61937-1	- [1]	Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 1: General	EN 61937-1	2007 [2]
IEC 61937-3	- [1]	Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 3: Non-linear PCM bitstreams according to the AC-3 format	EN 61937-3	2003 [2]
IEC 61937-4	- [1]	Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 4: Non-linear PCM bitstreams according to the MPEG audio format	EN 61937-4	2003 [2]
IEC 61937-5	- [1]	Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 5: Non-linear PCM bitstreams according to the DTS (Digital Theater Systems) format(s)	EN 61937-5	2006 [2]
IEC 61937-6	- [1]	Digital Audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 6: Non-linear PCM bitstreams according to the MPEG-2 AAC and MPEG-4 AAC audio formats	EN 61937-6	2006 [2]

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[1] Undated reference.

[2] Valid edition at date of issue.

Publication	Year	Title	EN/HD	Year
IEC 61937-7	- [1]	Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 7: Non-linear PCM bitstreams according to the ATRAC, ATRAC2/3 and ATRAC-X formats	EN 61937-7	2005 [2]
IEC 61937-8	- [1]	Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 8: Non-linear PCM bitstreams according to the Windows Media Audio (WMA) Professional format	EN 61937-8	2007 [2]
IEC 61937-9	- [1]	Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 - Part 9: Non-linear PCM bitstreams according to the MAT format	-	-
ISO/IEC 11172-3	- [1]	Information technology - Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s - Part 3: Audio	EN ISO/IEC 11172-3	1995 [2]
ISO/IEC 13818-3	- [1]	Information technology - Generic coding of moving pictures and associated audio information - Part 3: Audio	EN ISO/IEC 13818-3	1996 [2]
ISO/IEC 13818-7	- [1]	Information technology - Generic coding of moving pictures and associated audio information - Part 7: Advanced Audio Coding (AAC)	-	-
ISO/IEC 14496-3	- [1]	Information technology - Coding of audio-visual objects - Part 3: Audio	-	-
ITU-R Recommendation BS.1196	- [1]	Audio coding for digital terrestrial television broadcasting	-	-

INTERNATIONAL STANDARD

IEC
61937-2

Second edition
2007-05

Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 –

Part 2:
Burst-info

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INTERNATIONAL STANDARD

IEC
61937-2

Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 –

Part 2:
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INTERNATIONAL ELECTROTECHNICAL COMMISSION
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**DIGITAL AUDIO –
INTERFACE FOR NON-LINEAR PCM ENCODED
AUDIO BITSTREAMS APPLYING IEC 60958**

Part 2: Burst-info

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.

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International Standard IEC 61937-2 has been prepared by Technical Area 4, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition of IEC 61937-2 cancels and replaces the first edition published in 2000. This edition contains the following significant technical changes with respect to the previous edition.

a) New audio data-types of enhanced AC-3 data, MPEG-2 AAC low sampling frequency, MPEG-4 AAC, DTS type IV, ATRAC-X, WMA professional and MAT are added.

b) Data-type field in Pc is expanded from bit 0-4 to 0-6.

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

CDV	Report on voting
100/1115/CDV	100/1221/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.

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

The list of all the parts of the IEC 61937 series, under the general title *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958*, can be found on the IEC website.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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.

DIGITAL AUDIO –
INTERFACE FOR NON-LINEAR PCM ENCODED
AUDIO BITSTREAMS APPLYING IEC 60958

Part 2: Burst-info

1 Scope

This part of IEC 61970 specifies the digital audio interface to convey non-linear PCM encoded audio bitstreams applying IEC 60958-1 and IEC 60958-3. This standard specifies burst-info which defines content information about the data contained in the burst payload.

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.

IEC 60958-1, *Digital audio interface – Part 1: General*

IEC 60958-3, *Digital audio interface – Part 3: Consumer applications*

IEC 61937-1, *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 1: General*

IEC 61937-3, *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 3: Non-linear PCM bitstreams according to the AC-3 format*

IEC 61937-4, *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 4: Non-linear PCM bitstreams according to the MPEG audio formats*

IEC 61937-5, *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 5: Non-linear PCM bitstreams according to the DTS (Digital Theater Systems) format(s)*

IEC 61937-6, *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 6: Non-linear PCM bitstreams according to the MPEG-2 AAC and MPEG-4 AAC formats*

IEC 61937-7, *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 7: Non-linear PCM bitstreams according to the ATRAC, ATRAC2/3 and ATRAC-X formats*

IEC 61937-8, *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 8: Non-linear PCM bitstreams according to the Windows Media Audio (WMA) Professional format*

IEC 61937-9, *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 9: Non-linear PCM bitstreams according to the MAT format*[1]

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[1] To be published.

ISO/IEC 11172-3: *Information technology – Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mb/s – Part 3: Audio*

ISO/IEC 13818-3, *Information technology – Generic coding of moving pictures and associated audio information – Part 3: Audio*

ISO/IEC 13818-7, *Information technology – Generic coding of moving pictures and associated audio information – Advanced Audio Coding (AAC)*

ISO/IEC 14496-3, *Information technology – Coding of audio-visual objects – Part 3: Audio*

ITU-R Recommendation BS.1196, *Audio coding for digital terrestrial television broadcasting*

3   Terms, definitions and abbreviations

3.1   Terms and definitions

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

audio data-burst	data-burst with an encoded audio frame as burst-payload
audio data-word	16-bit data word
audio frame	fixed number of audio samples. The number of samples in an audio frame is dependent on the particular encoding system which is used to encode the audio frame into the encoded audio frame
audio gap	period in the sequence of baseband audio samples where valid samples of audio are not available
bitstream	non-linear PCM encoded audio source, represented in a sequence of bits. In this interface the bitstream consists of a sequence of data-bursts
data-burst	packet of data, including the burst-preamble, to be transmitted across the interface
burst-payload	information content of the data-burst
burst-preamble	header for the data-burst, containing synchronization and information about the data contained in the burst-payload
data-type	reference to the type of payload of the data-bursts
encoded audio frame	minimum decodable unit of an encoded data sequence. Each encoded audio frame is the encoded representation of a fixed number of audio samples (for each original audio channel). The number of samples which are encoded into an encoded audio frame depends on the particular encoding system which is used to encode the audio frame into the encoded audio frame
length-code	length of the data-burst-payload in bits
repetition period	period between the reference point of the current data-burst, and the reference point of the immediately following data-burst of the same data-type
sampling frequency	sampling frequency of the encoded PCM audio samples (i.e. before encoding and after decoding)
sampling period	period related to the sampling frequency of the PCM audio samples, represented in the encoded bitstream
stuffing	occupying the unused data capacity of the interface
stuffing sub-frame	occupying the unused data capacity in 16-bit audio data words
stream gap	period within the encoded audio bitstream without any audio frame; a discontinuity in the bitstream. Typically, a stream gap will occur between encoded audio frames