

**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**

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 61937-3:2004 sisaldab Euroopa standardi EN 61937-3:2003 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 22.07.2004 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 61937-3:2004 consists of the English text of the European standard EN 61937-3:2003.</p> <p>This document is endorsed on 22.07.2004 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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ICS 33.160.30

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English version

**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 61937-3:2003)**

Audionumérique -  
Interface pour les flux de bits audio  
à codage MIC non linéaire  
conformément à la CEI 60958  
Partie 3: Flux de bits PCM non-linéaire  
selon le format AC-3  
(CEI 61937-3:2003)

Digitalton -  
Schnittstelle für nichtlinear-PCM-codierte  
Audio-Bitströme unter Verwendung  
von IEC 60958  
Teil 3: Nichtlineare PCM-Bitströme  
nach dem AC-3 Format  
(IEC 61937-3:2003)

This European Standard was approved by CENELEC on 2003-10-01. 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 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 Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland and 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**

## Foreword

The text of document 100/646/FDIS, future edition 1 of IEC 61937-3, prepared by IEC TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61937-3 on 2003-10-01.

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) 2004-07-01
- latest date by which the national standards conflicting  
with the EN have to be withdrawn (dow) 2006-10-01

Annexes designated "normative" are part of the body of the standard.  
In this standard, annex ZA is normative.  
Annex ZA has been added by CENELEC.

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## Endorsement notice

The text of the International Standard IEC 61937-3:2003 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 61937-2	NOTE	Harmonized as EN 61937-2:2003 (not modified).
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## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60958	Series	Digital audio interface	EN 60958	Series
IEC 61937-1	- <sup>1)</sup>	Digital audio - Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 Part 1: General	EN 61937-1	2003 <sup>2)</sup>
ITU-R Recommendation BS.1196-1	- <sup>1)</sup>	Audio coding for digital terrestrial television broadcasting	-	-
ATSC A/52	- <sup>1)</sup>	Digital Audio Compression (AC-3) Standard	-	-

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<sup>1)</sup> Undated reference.

<sup>2)</sup> Valid edition at date of issue.

# INTERNATIONAL STANDARD

**IEC**  
**61937-3**

First edition  
2003-05

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**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**



Reference number  
IEC 61937-3:2003(E)

## Publication numbering

As from 1 January 1997 all IEC publications are issued with a designation in the 60000 series. For example, IEC 34-1 is now referred to as IEC 60034-1.

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IEC 61937-3  
(First edition – 2003)

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

## CORRIGENDUM 1

Page 3

Foreword

*Add, as a second paragraph, the following text:*

This standard cancels and replaces IEC 61937, published in 2000, which has been divided into four parts (see below). This first edition constitutes a technical revision.

# INTERNATIONAL STANDARD

IEC  
61937-3

First edition  
2003-05

**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**

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International Electrotechnical Commission, 3, rue de Varembé, PO Box 131, CH-1211 Geneva 20, Switzerland  
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

# 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

## FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 61937-3 has been prepared by technical area 4: Digital system interfaces, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

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

FDIS	Report on voting
100/646/FDIS	100/672/RVD

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.

IEC 61937 consists of the following parts under the general title *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958*:

Part 1: General

Part 2: Burst-info

Part 3: Non-linear PCM bitstreams according to the AC-3 format

Part 4: Non-linear PCM bitstreams according to the MPEG audio formats

Part 5: Non-linear PCM bitstreams according to the DTS (Digital Theatre Systems) format(s)

Part 6: Non-linear PCM bitstreams according to the MPEG-2 AAC format

Part 7: Non-linear PCM bitstreams according to the ATRAC and ATRAC2/3 formats

The committee has decided that the contents of this publication will remain unchanged until October 2005. At this date, the publication will be

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

**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**

## **1 Scope**

This part of IEC 61937 specifies the method for the digital audio interface specified in IEC 60958 to convey non-linear PCM bitstreams encoded in accordance with the AC-3 format.

## **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 (all parts), *Digital audio interface*

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

ITU-R Recommendation BS.1196-1, *Audio coding for digital terrestrial television broadcasting*

AC.3, Advanced Television Systems Committee (ATSC) document A/52, *Digital Audio Compression (AC-3) Standard*

## **3 Terms and definitions**

For the purposes of this document, the following definitions, abbreviations and presentation convention apply.

### **3.1 Definitions**

#### **3.1.1**

##### **latency**

delay time of an external audio decoder to decode an AC-3 data burst, defined as the sum of two values of the receiving delay time and the decoding delay time.

### **3.2 Abbreviations**

#### **3.2.1**

##### **ATSC**

Advanced Television Systems Committee

#### **3.2.2**

##### **MPEG**

Moving Pictures Expert Group, a joint committee of ISO and IEC

#### **3.2.3**

##### **ITU-R**

International Telecommunication Union, Radio Communication Bureau