

# CONSOLIDATED VERSION

# VERSION CONSOLIDÉE



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

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

**Audionumérique – Interface pour les flux de bits audio à codage MIC non linéaire conformément à l'IEC 60958 –**

**Partie 7: Flux de bits MIC non linéaire selon les formats ATRAC, ATRAC2/3 et ATRAC-X**



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ICS 33.160.01

ISBN 978-2-8322-3415-0

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**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**

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**This Consolidated version of IEC 61937-7 bears the edition number 2.1. It consists of the second edition (2004-11) [documents 100/752/CDV and 100/834/RVC] and its amendment 1 (2016-05) [documents 100/2503/CDV and 100/2614/RVC]. The technical content is identical to the base edition and its amendment.**

**In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.**

International Standard IEC 61937-7 has been prepared by Technical Area 4: Digital system interfaces and protocols, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This edition includes the following significant technical changes with respect to the previous edition:

- a) In this edition, a new audio data-type of ATRAC-X is added to ATRAC and ATRAC2/3.
- b) Specific properties such as reference points, repetition period, the method of filling stream gaps, and decoding latency are specified for data-type of ATRAC-X.

The French version of this standard has not been voted upon.

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 Theater 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, ATRAC2/3 and ATRAC-X formats (TA4)

Part 8: Non-linear PCM bitstreams according to the Windows Media Audio Professional (TA4)<sup>1</sup>

The committee has decided that the contents of the base publication and its amendment 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

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<sup>1</sup> Under consideration.

## INTRODUCTION to Amendment 1

The revision of IEC 61937-7:2004 has become necessary to specify the new additional subdata-types of ATRAC-X low latency. This amendment includes the following technical changes:

- a) new three subdata-types of ATRAC-X low latency are defined;
- b) specific properties such as reference points, repetition period, and decoding latency are specified for each subdata-type of ATRAC-X.

# 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

### 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 ATRAC, ATRAC2/3 and ATRAC-X formats.

### 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 61937-2, *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 – Part 2: Burst-info*

### 3 Terms, definitions and abbreviations

#### 3.1 Definitions

For the purposes of this document, the definitions given in IEC 61937-1 and IEC 61937-2, as well as the following, apply.

##### 3.1.1

##### **latency**

delay time of an external audio decoder to decode an ATRAC, ATRAC2/3 and ATRAC-X data-burst, defined as the sum of two values of the receiving delay time and the decoding delay time

#### 3.2 Abbreviations

ATRAC	Adaptive TRansform Acoustic Coding
ATRAC2	Adaptive TRansform Acoustic Coding 2
ATRAC3	Adaptive TRansform Acoustic Coding 3
ATRAC2/3	ATRAC2 and/or ATRAC3
ATRAC-X	Adaptive TRansform Acoustic Coding-X