IEC 61937-11

Edition 1.0 2018-11

INTERNATIONAL STANDARD

AMENDMENT 1

Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 –
Part 11: MPEG-4 AAC and its extensions in LATM/LOAS

IEC 61937-11:2010-05/AMD1:2018-11(en)

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 It also gives information on projects, replaced and withdrawn publications.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

Electropedia - www.electropedia.org
The world's leading online dictionary of electronic and electrical terms containing 21 000 terms and definitions in English and French, with equivalent terms in 16 additional languages. Also known as the International Electrotechnical Vocabulary (IEV) online.

IEC Glossary - std.iec.ch/glossary
67 000 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: sales@iec.ch.

IEC 61937-11

Edition 1.0 2018-11

INTERNATIONAL STANDARD

AMENDMENT 1

Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958 –
Part 11: MPEG-4 AAC and its extensions in LATM/LOAS

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

ICS 33.160.30; 33.170

ISBN 978-2-8322-6185-9

FOREWORD

This amendment 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 amendment is based on the following documents:

CDV	Report on voting
100/2948/CDV	100/3033/RVC

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

The committee has decided that the contents of this amendment and the base publication will remain unchanged until the stability date indicated on the IEC website 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.

INTRODUCTION to Amendment 1

The revision of IEC 61937-11:2010 has become necessary to specify the protocol where the interface does not carry an embedded sampling frequency clock. The purpose is primarily to support stereophonic multichannel audio applications increasing their channel counts. It is justified in that ARIB introduces 22.2/7.1 audio channel applications, as given in ITU-R BS.2051-0, into the market in 2018. This Amendment 1 contains the following significant technical changes with respect to IEC 61937-11:2010:

- new Annex B specifies new high-speed transmission;
- the term "Sub-data-type" is discontinued.

3.1 Terms and definitions

Remove the term and definition 3.1.13, "Sub-data-type".

Table 1 – Values for data-type and sub-data-type

Replace "Data-type" *with* "Data-type bits 0-4" *in Table 1.*

Replace "Sub-data-type" *with* "Data-type bits 5-6" *in Table 1.*

Replace "data-type" *with* "data-type bits 0-4" *in Table 1.*

5.1 General

Replace "sub-data-types" *with* "data-type bits 5-6".

Table 2 – Repetition period of pause data-bursts

Replace "Sub-data-type" *with* "Data-type bits 5-6" *in Table 2.*

5.3.1 MPEG-4 AAC and its extensions in LATM/LOAS

Replace "sub-data-types" *and* "sub-data-type" *with* "data-type bits 5-6".

Add, after the existing Annex A, the following new Annex B.

Annex B
(normative)

High-speed transmission

B.1 Indication

Typically, the transmitting interface frame rate equals the sampling frequency for the IEC 61937-11 protocol. In the case of a mismatch, IEC 61937-11 uses channel status fields to identify their relationship as shown in Table B.1 and the following scheme.

Table B.1 – Indication fields

Mode 0 Channel status	IEC 60958-3 (LPCM)	IEC 61937-11 (MPEG-4 AAC)
Bit 24 to 27	Sampling frequency	IEC 60958 frame rate
Bit 30 to 31	Sampling frequency extension	
Bit 36 to 39	Original sampling frequency	
Bit 44 to 47	Audio sampling frequency coefficient	

The "original sampling frequency" identifies reproduction frequency after decoding the IEC 61937-11 bitstream. The IEC 61937-11 bitstream is transmitted at "IEC 60958 frame rate". The "audio sampling frequency coefficient" optionally shows the relationship between "IEC 60958 frame rate" and "original sampling frequency" as follows.

IEC 60958 frame rate = (original sampling frequency) × (audio sampling frequency coefficient)

Values of these fields are given in IEC 60958-3.

IEC 61937-11 uses clock accuracy carried on channel status bits 28 and 29 of the IEC 60958-3 definitions for accuracy of the interface frame rate. The value of "1 1" (interface frame rate not matched to sampling frequency) stands for the condition that the actual interface frame rate in transmitting is not matching the logical IEC 60958 frame rate.

B.2 Example

Table B.2 shows an example that has a 96-kHz interface frame rate and 48-kHz reproduction frequency.

Table B.2 – Signalling example

IEC 60958 frame rate	Original sampling frequency	Audio sampling frequency coefficient
"0 1 0 1 0 0" (96 kHz)	"1 0 1 1" (48 kHz)	"1 1 1 1" (×2) or "0 0 0 0" (No indication)

Bibliography

Add the two new following references after the last entry:

ARIB STD B-32, *Video coding, audio coding, and multiplexing specifications for digital broadcasting*

Rec. ITU-R BS.2051-0, *Advanced sound system for programme production*