

INTERNATIONAL STANDARD

IEC 61937-6

Second edition
2006-01

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

© IEC 2006 — Copyright - all rights reserved

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 the publisher.

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
Международная Электротехническая Комиссия

PRICE CODE

S

For price, see current catalogue

CONTENTS

FOREWORD.....	4
1 Scope.....	6
2 Normative references	6
3 Terms, definitions, abbreviations and presentation convention	6
3.1 Terms and definitions	6
3.2 Abbreviations	7
3.3 Presentation convention	7
4 Mapping of the audio bitstream on to IEC 61937	7
4.1 MPEG-2 AAC burst-info.....	7
4.2 MPEG-4 AAC burst-info.....	8
5 Format of MPEG-2 AAC and MPEG-4 AAC data-bursts	8
5.1 Pause data-burst.....	9
5.2 Audio data-bursts	9
Figure 1 – MPEG-2 AAC data-burst	9
Figure 2 – Latency of MPEG-2 AAC decoding	10
Figure 3 – MPEG-2 AAC half-rate low sampling frequency data-burst.....	11
Figure 4 – Latency of MPEG-2 AAC half-rate low sampling frequency decoding.....	12
Figure 5 – MPEG-2 AAC quarter-rate low sampling frequency data-burst.....	13
Figure 6 – Latency of MPEG-2 AAC quarter-rate low sampling frequency decoding	14
Figure 7 – MPEG-4 AAC data-burst	15
Figure 7 – Latency of MPEG-4 AAC decoding	16
Figure 8 – MPEG-4 AAC half-rate low sampling frequency data-burst	16
Figure 9 – Latency of MPEG-4 AAC half-rate low sampling frequency decoding.....	17
Figure 10 – MPEG-4 AAC quarter-rate low sampling frequency data-burst.....	18
Figure 11 – Latency of MPEG-4 AAC quarter-rate low sampling frequency decoding	19
Figure 12 – MPEG-4 AAC double-rate high sampling frequency data-burst	20
Figure 13 – Latency of MPEG-4 AAC double-rate high sampling frequency decoding.....	21
Table 1 – Fields of burst-info (data-type=7)	7
Table 2 – Fields of burst-info (data-type=19).....	8
Table 3 – Fields of burst-info (data-type=20).....	8
Table 4 – Repetition period of pause data-bursts	9
Table 5 – Repetition period of pause data-bursts	9
Table 6 – Data-type-dependent information for data-type MPEG-2 AAC.....	10
Table 7 – Data-type-dependent information for data-type MPEG-2 AAC half-rate low sampling frequency.....	11
Table 8 – Data-type-dependent information for data-type MPEG-2 AAC quarter-rate low sampling frequency	13

Table 9 – Data-type-dependent information for data-type MPEG-4 AAC.....	15
Table 10 – Data-type-dependent information for data-type MPEG-4 AAC half-rate low sampling frequency.....	17
Table 11 – Data-type-dependent information for data-type MPEG-4 AAC quarter-rate low sampling frequency	18
Table 12 – Data-type-dependent information for data-type MPEG-4 AAC double-rate high sampling frequency	20

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

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 provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with an IEC Publication.
- 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 61937-6 has been prepared by technical area 4: Digital systems interfaces, of IEC technical committee 100: Audio, video and multimedia systems and equipment.

This second edition of IEC 61937-6 cancels and replaces the first edition published in 2002. This edition contains the following significant technical changes with respect to the previous edition:

- a) addition of data-type for MPEG2 AAC low sampling frequency;
- b) addition of data-type for MPEG-4 AAC.

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

CDV	Report on voting
100/942/CDV	100/1043A/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.

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 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 and MPEG-4 AAC formats
- Part 7: Non-linear PCM bitstreams according to the ATRAC, ATRAC2/3 and ATRAC-X formats

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 document may be issued at a later date.

**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**

1 Scope

This part of IEC 61937 specifies the method for IEC 60958 to convey non-linear PCM bitstreams encoded in accordance with the MPEG-2 AAC (Advanced Audio Coding) and MPEG-4 AAC 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 (all parts), *Digital audio interface*

IEC 61937 (all parts), *Digital audio – Interface for non-linear PCM encoded audio bitstreams applying IEC 60958*

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*

ISO/IEC 13818-7:2004, *Information technology – Generic coding of moving pictures and associated audio information – Part 7: Advanced Audio Coding (AAC)*

ISO/IEC 14496-3:2001, *Information technology – Coding of audio-visual objects – Part 3: Audio*
Amendment 1 (2003)