

---

---

**Information technology — Coding of  
audio-visual objects —**

Part 26:  
**Audio conformance**

AMENDMENT 3: Conformance for Low  
Delay AAC v2 profile

iTeh STANDARD PREVIEW

(standards.iteh.ai)

*Technologies de l'information — Codage des objets audiovisuels —*

*Partie 26: Conformité audio*

[https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-](https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-3913ce51dcdb/iso-iec-14496-26-2010-amd-3-2014)

[3913ce51dcdb/iso-iec-14496-26-2010-amd-3-2014](https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-3913ce51dcdb/iso-iec-14496-26-2010-amd-3-2014)  
AMENDEMENT 3: Conformité pour profil Low Delay AAC v2

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO/IEC 14496-26:2010/Amd 3:2014  
https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-3913ce51dedb/iso-iec-14496-26-2010-amd-3-2014](https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-3913ce51dedb/iso-iec-14496-26-2010-amd-3-2014)



### **COPYRIGHT PROTECTED DOCUMENT**

© ISO/IEC 2014

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office  
Case postale 56 • CH-1211 Geneva 20  
Tel. + 41 22 749 01 11  
Fax + 41 22 749 09 47  
E-mail [copyright@iso.org](mailto:copyright@iso.org)  
Web [www.iso.org](http://www.iso.org)

Published in Switzerland

## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 3 to ISO/IEC 14496-26:2010 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

It adds the conformance testing for the Low Delay AAC v2 profile defined in ISO/IEC 14496-3.

[ISO/IEC 14496-26:2010/Amd.3:2014](https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-3913ce51dedb/iso-iec-14496-26-2010-amd-3-2014)

<https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-3913ce51dedb/iso-iec-14496-26-2010-amd-3-2014>

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[ISO/IEC 14496-26:2010/Amd 3:2014](https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-3913ce51dedb/iso-iec-14496-26-2010-amd-3-2014)

<https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-3913ce51dedb/iso-iec-14496-26-2010-amd-3-2014>

# Information technology — Coding of audio-visual objects —

## Part 26: Audio conformance

### AMENDMENT 3: Conformance for Low Delay AAC v2 profile

In 2, Normative references, add:

ISO/IEC 23003-1, *Information technology — MPEG audio technologies — Part 1: MPEG Surround*

ISO/IEC 23003-2, *Information technology — MPEG audio technologies — Part 2: Spatial Audio Object Coding (SAOC)*

In 6.1, File name conventions, insert the following rows at the end of Table 2:

"

**iTeh STANDARD PREVIEW**

LD MPEG Surround (+ER AAC LD)	er_ad_ldmps_<coreSetup>	er_ad_ldmps_<coreSetup>
LD MPEG Surround (+ER AAC ELD)	er_eld_ldmps_<coreSetup>	er_eld_ldmps_<coreSetup>

"

After 7.25, Low Delay SBR, add:

#### 7.26 Low Delay MPEG Surround

##### 7.26.1 Compressed data

###### 7.26.1.1 Characteristics

The Low Delay MPEG Surround tool can be used in combination with the ER AAC LD AOT and the ER AAC ELD AOT.

The compressed data shall be stored as outlined in ISO/IEC 14496-3:2009, 4.5.2.13. The extension\_type for Low Delay MPS is EXT\_LDSAC\_DATA. The transport and signalling of LD MPS in an MPEG-4 Audio/Systems Environment is done in the same way as for the SAOC object type, as described in 8.2.2 of ISO/IEC 23003-2. LD MPS uses the AOT 44. The ldsac\_extension\_data() is used to carry a LDSacDataFrame() as described in B.4 of ISO/IEC 23003-2.

###### 7.26.1.2 Test procedure

Each compressed data shall meet the syntactic and semantic requirements specified in ISO/IEC 23003-2:2010, Annex B. If a syntactic element is not listed below, no restrictions apply to that element.

7.26.1.2.1 Compressed MPEG-4 data payload

7.26.1.2.1.1 LDSPatialSpecificConfig()

**bsSamplingFrequencyIndex**

For further restrictions, see 7.26.1.2.2

**bsSamplingFrequency** For restrictions, see 7.26.1.2.2

**bsFreqRes** Shall not be encoded with a value of 0

**bsFrameLength** For restrictions, see 7.26.1.2.2

**bsTreeConfig** For restrictions, see 7.26.1.2.2

**bsQuantMode** Shall not be encoded with a value of 3

**bsOneLcc** Not present if **bsTreeConfig** = 7. No further restrictions apply

**bsArbitraryDownmix** No restrictions apply

**bsFixedGainsSur** Not present if **bsTreeConfig** = 7. Shall be in the range 0...4

**bsFixedGainsLFE** Not present if **bsTreeConfig** = 7. Shall be in the range 0...4

**bsFixedGainsDMX** No restrictions apply

**bsMatrixMode** Not present if **bsTreeConfig** = 7. No further restrictions apply

**bsTempShapeConfig** Shall not be encoded with a value of 3

**bsDecorrConfig** Shall not be encoded with a value of 3

**bs3DaudioMode** Not present if **bsTreeConfig** = 7. No further restrictions apply

**bsEnvQuantMode** Shall be 0

**bs3DaudioHRTFset** Shall be 0 [ISO/IEC 14496-26:2010/Amd.3:2014](https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-3913ce51dedb/iso-iec-14496-26-2010-amd-3-2014)

7.26.1.2.1.2 **OttConfig()** <https://standards.iteh.ai/catalog/standards/sist/28988b16-6628-4562-a3ff-3913ce51dedb/iso-iec-14496-26-2010-amd-3-2014>

**bsOttBands** Shall not be encoded with a value larger than numBands given in table Table B.9 of ISO/IEC 23003-2:2010

7.26.1.2.1.3 **TttConfig()**

**bsTttDualMode** No restrictions apply

**bsTttModeLow** Shall be in the range of 0..5

**bsTttModeHigh** Shall be in the range of 0..5

**bsTttBandsLow** Shall not be encoded with a value larger than numBands given in table Table B.9 of ISO/IEC 23003-2:2010

7.26.1.2.1.4 **ParamHRTFset()**

**bsHRTFfreqRes** Shall not be encoded with a value of 0

**bsHRTFasymmetric** No restrictions apply

**bsHRTFlevelLeft** No restrictions apply

**bsHRTFlevelRight** No restrictions apply

**bsHRTFphase** No restrictions apply

**bsHRTFphaseLR** No restrictions apply

**bsHRTFicc** No restrictions apply

**bsHRTFiccLR** No restrictions apply

**7.26.1.2.1.5 SpatialExtensionConfig()**

<b>bsSacExtType</b>	Shall be in the range of 2..15. Note that in the case of values indicated as “reserved” in Table 54 of ISO/IEC 23003-1:2007, the parsing function SpatialExtensionConfigData(bsSacExtType) shall return the value 0, such that possibly present data is read as bsFillBits (i.e., skipped) and correct parsing of the bitstream can continue
<b>bsSacExtLen</b>	No restrictions apply
<b>bsSacExtLenAdd</b>	No restrictions apply
<b>bsSacExtLenAddAdd</b>	No restrictions apply
<b>bsFillBits</b>	No restrictions apply

**7.26.1.2.1.6 SpatialExtensionConfigData(0)**

None

**7.26.1.2.1.7 SpatialExtensionConfigData(1)**

None

**7.26.1.2.1.8 TreeConfig()**

<b>bsOttBoxPresent</b>	No restrictions apply
<b>bsOttDefaultCld</b>	No restrictions apply
<b>bsOttModeLFE</b>	No restrictions apply
<b>bsOttBands</b>	Shall not be encoded with a value larger than numBands given in Table B.9 of ISO/IEC 23003-2:2010
<b>bsOutputChannelPos</b>	Shall be in the range 0..26

For restrictions, see 7.26.1.2.2

**7.26.1.2.1.9 LDSacDataFrame()**

<b>ldsacHeaderFlag</b>	No restrictions apply
<b>ldsacHeaderLen</b>	No restrictions apply
<b>ldsacHeaderLenAdd</b>	No restrictions apply
<b>bsFillBits</b>	No restrictions apply
<b>ldsacTimeAlignFlag</b>	No restrictions apply
<b>ldsacTimeAlign</b>	Shall be 0

**7.26.1.2.1.10 LDSpatialFrame()**

<b>bsIndependencyFlag</b>	No restrictions apply
---------------------------	-----------------------

**7.26.1.2.1.11 FramingInfo()**

<b>bsFramingType</b>	No restrictions apply
<b>bsNumParamSets</b>	For restrictions, see 7.26.1.2.2
<b>bsParamSlot[ps]</b>	Shall be in the range 0.. <b>bsFrameLength</b>

**7.26.1.2.1.12 OttData()**

No restrictions apply

7.26.1.2.1.13 TttData()

ICC values of a certain TTT box shall not be encoded with a value of 0 if (**bsTTTModeLow** < 2 || (**bsTTTDualMode**==1&&**bsTTTModeHigh**<2))

7.26.1.2.1.14 SmgData()

**bsSmoothMode** No restrictions apply  
**bsSmoothTime** No restrictions apply  
**bsFreqResStrideSmg** No restrictions apply  
**bsSmgData** No restrictions apply

7.26.1.2.1.15 TempShapeData()

**bsTempShapeEnable** No restrictions apply  
**bsTempShapeEnableChannel[ch]**  
 No restrictions apply

7.26.1.2.1.16 EnvelopeReshapeHuff()

Hcod2D\_EnvRes **bsCodeW** shall have a value of a set of values as defined by column 'codeword' of Table A.25 of ISO/IEC 23003-1:2007 and shall have a length as defined by the corresponding entry in column 'length'

7.26.1.2.1.17 ArbitraryDownmixData()

No restrictions apply

ITh STANDARD PREVIEW  
 (standards.iteh.ai)

7.26.1.2.1.18 EcData()

**bsXXXdataMode** Shall fulfil the requirements outlined in ISO/IEC 23003-1:2007, 6.1.13  
**bsDataPair** Shall have the value 0 if setIdx == datasets-1. No further restrictions apply  
**bsQuantCoarseXXX** No restrictions apply  
**bsFreqResStrideXXX** No restrictions apply

7.26.1.2.1.19 EcDataPair()

**bsPcmCodingXXX** No restrictions apply

7.26.1.2.1.20 GroupedPcmData()

**bsPcmWord** No restrictions apply

7.26.1.2.1.21 DiffHuffData()

**bsDiffType** No restrictions apply  
**bsCodingScheme** No restrictions apply

7.26.1.2.1.22 HuffData1D()

hcodFirstBand\_XXX **bsCodeW** shall have a value out of a set of values as defined by column 'codeword' of Tables A.2, A.3 or A.4 of ISO/IEC 23003-1:2007, respectively, and shall have a length as defined by the corresponding entry in column 'length'

hcod1D\_XXX\_YY **bsCodeW** shall have a value out of a set of values as defined by column 'codeword' of Tables A.5, A.6 or A.7 of ISO/IEC 23003-1:2007, respectively, and shall have a length as defined by the corresponding entry in column 'length'

**bsSign** No restrictions apply



**7.26.1.2.1.23 HuffData2DFreqPair()**

**hcodLavIdx** **bsCodeW** shall have a value out of a set of values as defined by column 'codeword' of Table A.24 of ISO/IEC 23003-1:2007, and shall have a length as defined by the corresponding entry in column 'length'

**hcod2D\_XXX\_YY\_FP\_LL**

**bsCodeW** shall have a value out of a set of values as defined by column 'codeword' of the applicable table out of Tables A.8, A.9 or A.10 of ISO/IEC 23003-1:2007, and shall have a length as defined by the corresponding entry in column 'length'

**hcod1D\_XXX\_YY**

**bsCodeW** shall have a value out of a set of values as defined by column 'codeword' of Tables A.5, A.6 or A.7 of ISO/IEC 23003-1:2007, respectively, and shall have a length as defined by the corresponding entry in column 'length'

**bsSign** No restrictions apply

**7.26.1.2.1.24 SymmetryData()**

**bsSymBit[i]** No restrictions apply

**7.26.1.2.1.25 LsbData()**

**bsLsb** For restrictions see ISO/IEC 23003-1:2007, 8.4.2.3.24

**7.26.1.2.1.26 SpatialExtensionFrame()**

Shall be in the range of 2...15. Note that in case of **bsSacExtType** having values indicated as "reserved" in Table 54 ISO/IEC of 23003-1:2007, the parsing function **SpatialExtensionFrameData(bsSacExtType)** shall return the value 0, such that possibly present data is read as **bsFillBits** (i.e., skipped) and correct parsing of the bitstream can continue

**7.26.1.2.1.27 SpatialExtensionFrameData(0)** <https://standards.iso.org/standards/sist/28988b16-6628-4562-a3ff-3913ce51dedb/iso-iec-14496-26-2010-amd-3-2014>

None

**7.26.1.2.1.28 SpatialExtensionFrameData(1)**

None

**7.26.1.2.1.29 SpatialExtensionFrameData(2)**

No further restrictions apply

**7.26.1.2.1.30 ArbitraryTreeData()**

No further restrictions apply

**7.26.1.2.1.31 Restrictions applying to decoded parameters**

See ISO/IEC 23003-1:2007, 8.4.2.3.24

**7.26.1.2.2 Low Delay AAC v2 profile**

For LD MPEG Surround in the Low Delay AAC v2 profile, the following further restrictions apply.

**bsSamplingFrequencyIndex**

Shall be encoded with a value listed in **Table 1**

**bsSamplingFrequency** Shall be encoded with a value listed in **Table 1**

**bsFrameLength** Shall be in the range 3..31