

First edition
2010-05-01

AMENDMENT 4
2016-11-15

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

Part 26:

Audio conformance

**AMENDMENT 4: AAC Additional
Multichannel Conformance Data**

Technologies de l'information — Codage des objets audiovisuels —

Partie 26: Conformité audio

*AMENDMENT 4: Données AAC de conformité multicanal
supplémentaire*

IECNORM.COM :: Click to view the full PDF of ISO/IEC 14496-26:2010/Amd 4:2016



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2016, Published in Switzerland

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
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

Amendment 4 to ISO/IEC 14496-26:2010 was prepared by ISO/IEC JTC 1, *Information technology*, Subcommittee SC 29, *Coding of audio, picture, multimedia and hypermedia information*.

IECNORM.COM : Click to view the full PDF of ISO/IEC 14496-26:2010/Amd 4:2016

Information technology — Coding of audio-visual objects —

Part 26: Audio conformance

AMENDMENT 4: AAC Additional Multichannel Conformance Data

Page 6, 6.1

Replace

<tool> indicates the SBR module mainly targeted by the test sequence. Possible values are “e” for testing the envelope adjuster “s” for testing sine addition, “gh” for testing time-grid transitions in combination with changes of SBR header data, “i” for testing inverse filtering, “qmf” for testing the QMF implementation, “cm” for testing various channel modes, “sig” for testing SBR signaling, “twi” for QMF identification, and “sr” for testing various combinations of sampling rates.

with

<tool> indicates the SBR module mainly targeted by the test sequence. Possible values are “e” for testing the envelope adjuster “s” for testing sine addition, “gh” for testing time-grid transitions in combination with changes of SBR header data, “i” for testing inverse filtering, “qmf” for testing the QMF implementation, “cm” and “gen” for testing various channel modes, “sig” for testing SBR signaling, “twi” for QMF identification, and “sr” for testing various combinations of sampling rates.

Page 18, Table 7

Replace

samplingFrequencyIndex / samplingFrequency		Level 1	Level 2	Level 3	Level 4	Level 5
High Efficiency AAC Profile	SBR present	NA	0x6..0xc, 0xf / <= 24000	0x3..0xc, 0xf / <= 48000	0x3..0xc, 0xf / <= 48000 (Note 1)	0x3..0xc, 0xf / <= 48000
	SBR not present	NA	0x3..0xc, 0xf / <= 48000	0x3..0xc, 0xf / <= 48000	0x3..0xc, 0xf / <= 48000	0x0..0xc, 0xf / <= 96000
Note 1: For Level 4, for one or two channels the maximum AAC sampling rate, with SBR present, is 48 kHz. For more than two channels the maximum AAC sampling rate, with SBR present, is 24 kHz. (0x6..0xc, 0xf / <= 24000)						

extensionSamplingFrequencyIndex / extensionSamplingFrequency	Level 1	Level 2	Level 3,4	Level 5
High Efficiency AAC Profile	NA	0x6..0xc, 0xf / <= 24000	0x3..0xc, 0xf / <= 48000	0x0..0xc, 0xf / <= 96000

with

samplingFrequencyIndex / samplingFrequency		Level 1	Level 2	Level 3	Level 4, Level 6	Level 5, Level 7
High Efficiency AAC Profile	SBR pres- ent	NA	0x6..0xc, 0xf / <= 24000	0x3..0xc, 0xf / <= 48000	0x3..0xc, 0xf / <= 48000 (Note)	0x3..0xc, 0xf / <= 48000
	SBR not present	NA	0x3..0xc, 0xf / <= 48000	0x3..0xc, 0xf / <= 48000	0x3..0xc, 0xf / <= 48000	0x0..0xc, 0xf / <= 96000
NOTE For Level 4, for one or two channels, the maximum AAC sampling rate, with SBR present, is 48 kHz. For more than two channels, the maximum AAC sampling rate, with SBR present, is 24 kHz. (0x6..0xc, 0xf / <= 24000)						

extensionSamplingFrequencyIndex / extensionSamplingFrequency	Level 1	Level 2	Level 3,4,6	Level 5,7
High Efficiency AAC Profile	NA	0x6..0xc, 0xf / <= 24000	0x3..0xc, 0xf / <= 48000	0x0..0xc, 0xf / <= 96000

Page 18, Table 8

Replace

ChannelConfiguration	Level 1	Level 2	Level 3	Level 4	Level 5
AAC Profile	0..2	0..2	NA	0..6	0..6
High Efficiency AAC Profile	NA	0..2	0..2	0..6	0..6

with

ChannelConfiguration	Level 1	Level 2	Level 3	Level 4,5	Level 6,7
AAC Profile	0..2	0..2	NA	0..6	0..7, 11, 12, 14
High Efficiency AAC Profile	NA	0..2	0..2	0..6	0..7, 11, 12, 14

Page 21, 7.4.1.2.1.4

Replace

comment_field_data[i]: no restrictions apply.

with

comment_field_data[i]: AAC, HE-AAC, HE-AACv2 and Extended HE-AAC Profile decoders of Levels 6 and 7 shall support parsing the comment_field_data and interpret a **height_extension_element()** embedded therein, else no restrictions apply.

Page 32, Table 14 a)

Between the rows al19 and as00

al19	noise	40/64	2	*	1	0	-	-	-	s	n	n	n	n	-	n	y	n	-	n	-	n	n	PNS-2/3
as00	s i n e sweep	40/64	3	*	0	0	-	-	-	y	n	n	n	n	-	n	n	n	n	n	-	y	n	RMS

add the new test sequences al20, al21 and al22 and table note:

al19	noise	40/64	2	*	1	0	-	-	-	s	n	n	n	n	-	n	y	n	-	n	-	n	n	PNS-2/3
al20	sine	384	2	3..5	11	0	-	y	y	y	n	y	n	n	-	n	n	y	-	y	-	n	n	none
al21	sine	448	2	3..5	12	0	-	y	y	y	n	y	n	n	-	n	n	y	-	y	-	n	n	none
al22	sine	448	2	3..5	14	0	-	y	y	y	n	y	n	n	-	n	n	y	-	y	-	n	n	none
as00	s i n e sweep	40/64	3	*	0	0	-	-	-	y	n	n	n	n	-	n	n	n	n	n	-	y	n	RMS
...																								
NOTE With al22, two different signalling methodologies of channel configurations are available, denoted by _chCf14 or _chCf0Pce respectively.																								

Page 112, Table 69

Between the rows al_sbr_sr and al960_sbr_qmf

al_sbr_twi	none	24	y	y	-	-	-	y	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
al_sbr_qmf	Sine Sweep	24	-	y	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1.4	maxDiff/RMS	-	-	-	-
al_sbr_e	rectangle * 10Hz sine	24/48	-	-	y	-	-	-	-	-	y	(Note 1)	90	2.0	maxDiff/RMS	-	-	-	-	-	-	-	-	-
al_sbr_gh	rectangle * 10Hz sine	24/48	-	-	-	y	y	-	-	-	-	-	51	1.5	maxDiff/RMS	-	-	-	-	-	-	-	-	-
al_sbr_i(Note 2)	rectangle + noise	24/48	-	-	-	-	-	-	y	-	y	(Note 1)	36	3.4	maxDiff/RMS	-	-	-	-	-	-	-	-	-
al_sbr_s	noise	24	-	-	-	-	-	-	-	y	-	-	120	1.9	maxDiff/RMS	-	-	-	-	-	-	-	-	-
al_sbr_cm	music	24-128	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
al_sbr_sig	music	48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
al_sbr_sr	music	24-56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
al960_sbr_qmf	Sine Sweep	24	-	y	-	-	-	-	-	-	-	-	TBD	TBD	maxDiff/RMS	-	-	-	-	-	-	-	-	-
al960_sbr_e	rectangle* 10Hz sine	24/48	-	-	y	-	-	-	-	-	y	A	TBD	TBD	maxDiff/RMS	-	-	-	-	-	-	-	-	-
al960_sbr_gh	rectangle* 10Hz sine	24/48	-	-	-	y	y	-	-	-	-	-	TBD	TBD	maxDiff/RMS	-	-	-	-	-	-	-	-	-
al960_sbr_i	rectangle + noise	24/48	-	-	-	-	-	-	y	-	y	A	TBD	TBD	maxDiff/RMS	-	-	-	-	-	-	-	-	-
al960_sbr_s	noise	24	-	-	-	-	-	-	-	y	-	-	TBD	TBD	maxDiff/RMS	-	-	-	-	-	-	-	-	-

NOTE 1 CRC enabled for 32 kHz test vectors.

NOTE 2 The following bitstreams also exist with the suffix _new: al_sbr_i_32_1, al_sbr_i_44_1, al_sbr_i_48_1. These are preferred for conformance testing while the ones without this suffix are deprecated.

add the new test sequence al_sbr_gen:

al_sbr_twi	none	24	y	y	-	-	-	-	y	-	-	-	-
al_sbr_qmf	Sine Sweep	24	-	y	-	-	-	-	-	-	5	1.4	maxDiff/RMS
al_sbr_e	rectangle* 10Hz sine	24/48	-	-	y	-	-	-	-	y(Note 1)	90	2.0	maxDiff/RMS
al_sbr_gh	rectangle* 10Hz sine	24/48	-	-	-	y	y	-	-	-	51	1.5	maxDiff/RMS
al_sbr_i(Note 2)	rectangle + noise	24/48	-	-	-	-	-	y	-	y(Note 1)	36	3.4	maxDiff/RMS
al_sbr_s	noise	24	-	-	-	-	-	-	y	-	120	1.9	maxDiff/RMS
al_sbr_cm	music	24-128	-	-	-	-	-	-	-	-	-	-	-
al_sbr_sig	music	48	-	-	-	-	-	-	-	-	-	-	-
al_sbr_sr	music	24-56	-	-	-	-	-	-	-	-	-	-	-
al_sbr_gen	sine	192-224											
al960_sbr_qmf	Sine Sweep	24	-	y	-	-	-	-	-	-	TBD	TBD	maxDiff/RMS
al960_sbr_e	rectangle* 10Hz sine	24/48	-	-	y	-	-	-	-	yA	TBD	TBD	maxDiff/RMS
al960_sbr_gh	rectangle* 10Hz sine	24/48	-	-	-	y	y	-	-	-	TBD	TBD	maxDiff/RMS
al960_sbr_i	rectangle + noise	24/48	-	-	-	-	-	y	-	yA	TBD	TBD	maxDiff/RMS
al960_sbr_s	noise	24	-	-	-	-	-	-	y	-	TBD	TBD	maxDiff/RMS

NOTE 1 CRC enabled for 32 kHz test vectors.

NOTE 2 The following bitstreams also exist with the suffix _new: al_sbr_i_32_1, al_sbr_i_44_1, al_sbr_i_48_1. These are preferred for conformance testing while the ones without this suffix are deprecated.

Page 215, Table 95

Replace Table 95 with the following:

Table 95

Object type	Sequence name	AAC Profile							High Efficiency AAC Profile							High Efficiency AAC v2 Profile						
		1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7
AAC LC	al00	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al01	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al02	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al03	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al04	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al05	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al06	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al07	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al08	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al14	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al16	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al17	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al18	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al19	≥6	≥3	NA	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X	NA	≥3	≥3	≥3	X	≥3	X
	al20						≥3	X						≥3	X						≥3	X
	al21						≥3	X						≥3	X						≥3	X
	al22						≥3	X						≥3	X						≥3	X
SBR	al_sbr_qmf								NA	≥6	≥3	≥3	≥3	≥3	≥3	NA	≥6	≥3	≥3	≥3	≥3	≥3