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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

AMENDEMENT 4: Données AAC de conformité multicanal supplémentaire

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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

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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*.

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 present	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	sine 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	sine 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 _chCfg14 or _chCfg0Pce 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	-	-	-	-	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.

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						
	Level	**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