ORF TECHNIK

Intermediate Format Specification - UHD/HDR

Version 1.1

XAVC_UHD_HLG[1]

Container[2]	MXF OP1A	
Codec	XAVC Class 300 CBG	
Resolution	3840x2160	
Frame Rate	50p	
Video Bit Rate	500 Mbit/s	
Chroma Subsampling	4:2:2	
Bit Depth	10 Bit	
BlackRefLevel	64	
WhiteRefLevel	940	
Color Range	897	
Color Primaries[3]	ITU-R BT.2020	
Transfer Characteristic[3]	HLG OETF (ITU-R BT.2100-2)	System Gamma 1.2
Coding Equations[3]	ITU-R BT.2020 NCL	
Peak Luminance	1000 Nits	
Audio[4]	8 Tracks[5]	16 Tracks[6]
Channel Count	1 Audiochannel = 1 Audiotrack	
Bit Depth	24 Bit	
Sampling Rate	48 KHz	
Coding	PCM	
Multichannel audio	Discrete	

[5]Raw Material	
Audio track allocation	
Audiotrack 1	Original Sound Left or Mic 1
Audiotrack 2	Original Sound Right or Mic 1
Audiotrack 3	Cam Mic Left or Mic 2
Audiotrack 4	Cam Mic Right or Mic 2
Audiotrack 5	Reserved
Audiotrack 6	Reserved
Audiotrack 7	Reserved
Audiotrack 8	Reserved

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[6]Programme Exchange	
Start Timecode	00:00:00:00
System Item Timecode	continuous
Content	no bars and tones - picture starts on first frame
Loudness	EBU R128
Audio track allocation: Multichannel Production	
Audiotrack 1	Stereo Left
Audiotrack 2	Stereo Right
Audiotrack 3	Multichannel Left
Audiotrack 4	Multichannel Right
Audiotrack 5	Multichannel Center
Audiotrack 6	Multichannel LFE
Audiotrack 7	Multichannel Surround Left
Audiotrack 8	Multichannel Surround Right
Audiotrack 9	Stereo Left - 2nd Language / Audio Description
Audiotrack 10	Stereo Right - 2nd Language / Audio Description
Audiotrack 11	Multichannel Left - 2nd Language / International Stereo Left
Audiotrack 12	Multichannel Right - 2nd Language / International Stereo Right
Audiotrack 13	Multichannel Center - 2nd Language / Reserved
Audiotrack 14	Multichannel LFE - 2nd Language / Reserved
Audiotrack 15	Multichannel Surround Left - 2nd Language / Reserved
Audiotrack 16	Multichannel Surround Right - 2nd Language / Reserved
Audio track allocation: Stereo Production	
Audiotrack 1	Stereo Left
Audiotrack 2	Stereo Right
Audiotrack 3	International Stereo Left
Audiotrack 4	International Stereo Right
Audiotrack 5	Stereo Left - 2nd Language / Audio Description
Audiotrack 6	Stereo Right - 2nd Language / Audio Description
Audiotrack 7	Reserved
Audiotrack 8	Reserved
Audiotrack 9	Reserved
Audiotrack 10	Reserved
Audiotrack 11	Reserved
Audiotrack 12	Reserved
Audiotrack 13	Reserved
Audiotrack 14	Reserved
Audiotrack 15	Reserved
Audiotrack 16	Reserved

[1] XAVC Intra according SMPTE RDD32:2017
[2] Header Partition Status "Closed and Complete"
[3] According IRT Operational Guideline "HDR signalisation in MXF for H.264" https://www.irt.de/en/publications/technical-guidelines/technical-guidelines-download/hdr-in-mxf
[4] Unused tracks have to be filled with silence or muted Use of reserved tracks require bilateral agreement 8 Tracks only allowed for Raw Material

For technical support please contact:	Quality Content Management qcm@orf.at