

# **TECHNICAL SPECIFICATIONS** for the delivery of digital content

KANAAL Z & CANAL Z / Videohouse NV.  
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General principles:

- file delivery is preferred over HDD/XDCAM disc delivery
- content is to be delivered in compliance with the technical specifications
- a delivered file/XDCAM disc carries only one programme or episode

**technical specifications for High Definition file material  
MXF XDCAM HD422 - STEREO L/R with loudness EBU-R128**

## **1. file specifications**

### MXF

The file based content should be packaged in an **MXF container (in operational pattern 1a, aka OP1a)**, containing the compressed video and audio data. The MXF container must follow the SMPTE 377M, 386M and 378M guidelines.

The file must be encoded according to the **XDCAM HD422 MPEG-2 422P@HL intra frame 25i**, as established in the SMPTE documents 381M, 382M and the MPEGHDv20080313 document 9Sony XDCAM technical information v 1.5).

Only closed MXF files are permitted (see SMPTE 377M).

### video specifications

The bandwidth for the video data is 50 Mbit/s, CBR (constant bit rate).

The video resolution must be full frame high definition 1920x1080 pixels.

The frame rate should be 25 frames / 50 fields per second.

The scanning type is interlaced.

### aspect ratio

The primary format for the digital content is full frame 16:9 (1:78:1). Sub formats fitting in the full frame 16:9 format (as a result of widescreen 2:35:1 cinemascope acquisition) without distortion are allowed.

The aspect ratio must be identically marked in both the MPEG essence and the MXF metadata.

### audio specifications

The MXF should contain 4 or 8 audio channels (PCM / 24bit / 48Khz).

Channels 1 and 2 are required to contain the default stereo program. A mono program must be avoided.

If no other language programs and/or M/E are available, all other channels should be mute. Other languages and/or M/E should be encoded on the subsequent sets 3&4, 5&6 and 7&8.

channel utilization overview:

channel 1	stereo program left
channel 2	stereo program right
channel 3	other language program1 left or M/E left or mute
channel 4	other language program1 right or M/E right or mute
channel 5	other language program2 left or mute
channel 6	other language program2 right or mute
channel 7	other language program3 left or mute
channel 8	other language program3 right or mute

The dual channel stereo programme must be recorded complying to the **EBU R128** recommendations. This indicates that the program loudness level shall be normalised to a target level of **-23.0 LUFS** measured over the entire length of the program.

The maximum permitted true peak level of the program is -1 dBTP (dB True Peak).

The audio file coding is PCM, 16 or 24 bit @ 48Khz sampling frequency.

A positive correlation between both program tracks is requested.

A theatrical (dynamic) audio program is preferred.

#### time code

The file contains an uninterrupted ascending time code as defined by the 'Time Code Track' in the material package of the MXF file.

The content should start at time 00:00:00:00 (hh:mm:ss:ff).

As mentioned before, VITC, when present, will be ignored.

The file's start and end time codes will be indicated in the file's notation. Example: a 30sec program will have a start time code of 00:00:00:00 and an end time code of 00:00:29:24, so the actual duration is registered.

#### naming conventions

The file name should be clear and obvious.

Our suggestion: name\_season\_episode\_broadcast date\_language.mxf  
(example: Z-energy\_S2\_E09\_20150306\_NL.mxf)

quick reference

container: mxf  
pattern: OP1a  
codec: XDCAM HD422 50i CBR  
video: 1920x1080  
audio: stereo PCM 24 bit 48Khz  
audio level: EBU R128 (pgm loudness level at -23.0 LUFS, max true peak level at -1 dBTP)

**In order to assure that the encoded file is matching the specifications, you can use the free Sony 'XDCAM browser' and/or 'XDCAM transfer' application. If the player accepts and plays back the file, then the encoding should be correct.**

## 2. quality criteria

KANAAL Z - CANAL Z and Videohouse NV. are entitled to refuse a program master when it does not meet its technical specifications.

## 3. delivery / contact

FTP delivery adress (aka Kanaal Z drophost):

ftp server: drophost.videohouse.be  
user: KanaalZ File Delivery  
password: Kj%tGu78q!

All file deliveries should be accompanied by an e-mail to [kanaalz.traffic@videohouse.be](mailto:kanaalz.traffic@videohouse.be), stating the name and purpose of the delivery. Also a contact is to be mentioned in case of an issue.

Fysical delivery adress (HDD or XDCAM disk):

Videohouse  
Kanaal Z Traffic  
Luchthavenlaan 22  
1800 Vilvoorde - BELGIUM

Our contacts:

general telephone number +32 2 2544811  
e-mail : [kanaalz.traffic@videohouse.be](mailto:kanaalz.traffic@videohouse.be)