

# **TECHNICAL SPECIFICATIONS**

## for the delivery of digital content

KANAAL Z - CANAL Z / Videohouse NV.

revision 3 - 2012

### General principles:

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

**technical specifications for Standard Definition file material**  
**MXF D10-30 / -9 dBfs STEREO L/R**

## **1. file specifications**

MXF:

The file based content should be packaged in an **MXF container**, containing the compressed video and audio data. The file must be wrapped according to the MXF D10-30 standard, in operational pattern 1a (OP1a), as established in the SMPTE documents 377M-2004, 378M-2004, 379M-2004, 356M-2001 and 382M-2007.

In the instances where a distinction is made in the SMPTE documents between 625/50 and 525/60, the **625/50 (interlaced)** process must be chosen.

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

video specifications:

The bandwidth for the video data is 30 Mbit/s.

The video resolution must be 720x576 pixels for the active video image, with an additional 32 VBI lines (720x608). All other information contained in these extra (VBI) lines, including VITC, will be ignored.

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

To ensure that the decoded files will play back properly in a PAL environment (avoiding illegal colors), the PAL signal must comply with ITU-R BT.601-5 after decoding.

aspect ratio:

The only accepted format is 16F16 (full frame, full height anamorphic, aka 16/9). Sub formats fitting in the 16F16 format (as a result of widescreen 2:35:1 cinemascope acquisition) without distortion are allowed.

The format 16L12 (letterbox 4/3) is not allowed.

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

audio specifications:

The MXF D10 standard defines 4 or 8 audio channels.

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. When other language and /or M/E are available, these 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 normal 2-channel stereo program must be recorded so that the maximum signal level matches: +6dBu = 0 dBppm = -9dBfs. This is measured after decoding with a peak program measuring device based on the IEC268 and/or EBU R68 recommendation (attack time: 10ms).

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\_20121002\_NL.mxf).

quick reference:

container: mxf  
pattern: OP1a  
codec: D10-30 Mbit/s  
video: PAL (25 frames)  
audio: stereo PCM 16/24 bit 48Khz  
audio level: maximum peak level = -9 dBfs

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, tape or XDCAM disk):

Videohouse  
Kanaal Z Traffic  
Luchthavenlaan 22  
1800 Vilvoorde - BELGIUM

Our contacts:

general telephone number: 00 32 2 2544811  
e-mail: [kanaalz.traffic@videohouse.be](mailto:kanaalz.traffic@videohouse.be)