

Technical Specifications 2020-2021

**High-definition
(HD) video**

Technical Specifications

High-definition (HD) video

Contents

1.	FORMAT.....	3
1.1	FILE.....	3
1.1.1	FILE NAMING CONVENTIONS.....	3
2.	VIDEO.....	4
2.1	SIGNAL PARAMETERS.....	4
2.2	VIDEO LEVELS.....	4
2.3	USE OF SD IMAGES.....	4
2.3.1	SD 4:3 IMAGES.....	4
2.3.2	SD 16:9 IMAGES.....	4
2.4	TIMECODE.....	5
2.5	SAFE ACTION AND TEXT AREAS.....	5
2.5.1	TELE-QUEBEC LOGO.....	5
2.5.2	COMMERCIAL BREAK BUMPER IN/OUT (where applicable).....	6
2.5.3	BANNER OVERLAY (where applicable).....	6
2.5.4	END CREDITS.....	6
2.5.5	SPONSOR BANNERS.....	7
2.6	COMMERCIAL INSERTS.....	8
2.6.1	FOR PRE-PACKAGED PROGRAMS.....	8
2.6.2	FOR LIVE BROADCASTS.....	8
2.7	MULTIPLE PROGRAMS ON ONE FILE.....	8
3.	AUDIO.....	9
3.1	MAIN PROGRAM TRACK.....	9
3.2	PROGRAM VIDEO DESCRIPTION TRACKS.....	9
3.3	VOCAL IDENTIFICATION OF TRACKS (distinct 5.1 multichannel programs).....	9
3.4	REFERENCE LEVEL.....	10
3.5	AUDIO LEVEL AND METADATA.....	10
4.	LEAD-IN AND LEAD-OUT.....	11
5.	CLOSED CAPTIONING (CC).....	12
6.	RIGHT OF REFUSAL.....	12

1. FORMAT

1.1 FILE

Tele-Quebec accepts the following file formats, but the preferred format is XDCAM HD422 50 Mbps encapsulated MXF OP1a:

- XDCAM HD422 50 Mbps encapsulated MXF OP1a or Quick Time;
- DNxHD 145 or 220 Mbps encapsulated MXF OP1a or QuickTime;
- ProRes 422 (Standard or HQ) encapsulated QuickTime;

Audio format: PCM, 24 bit / 48 kHz sampling.

1.1.1 FILE NAMING CONVENTIONS

The file name must clearly identify the program title. It must contain the following information, at a minimum:

1. Program title
2. Series number (as necessary)
3. Episode number (as necessary)

E.g.: Program_S01_E08.mxf

- The parts of the file name must not be separated by an underscore (“_”) symbol.
- The file name must not contain any accented or special characters, nor any spaces.

All programs must be delivered as 29.97 fps interlaced, unless otherwise agreed with a representative of the Tele-Quebec team.

For any program delivered with a frame rate other than 29.97 fps interlaced, Tele-Quebec reserves the right to request the program in its original format to allow for correction of any technical issues that may occur.

For all acquisitions, textless backgrounds as well as any other elements deemed relevant must be provided (e.g.: typography).

A 5-minute test file may be requested before delivery of a program.

The file delivery method shall be by upload.

2. VIDEO

2.1 SIGNAL PARAMETERS

- Image format is 1920 x 1080;
- Sampling structure must be 4:2:2;
- Frame rate must be **29.97** fps, **interlaced**;
- Upper field first;
- The production must be shot on a digital HD camera.

2.2 VIDEO LEVELS

Video levels must conform to the following values:

- White maximum: 700 mV;
- Black minimum: 0 mV;
- Cb-Cr Chrominance: ± 350 mV.

2.3 USE OF SD IMAGES

2.3.1 SD 4:3 IMAGES

When use of SD 4:3 images is required, either of two display modes can be used: pillarbox or top-bottom crop. When reframing in pillarbox format, be sure to remove the entire closed-captioning signal from lines 21 and 284 of the SD frames before conversion.

When converting from SD to HD:

- No deterioration (geometrical distortion) of the original horizontal and/or vertical image proportions will be accepted.
- Take care to preserve the main elements of the original 4:3 image (e.g., action, graphics).

Pillarbox



The black areas (pillars) are shown within the 16:9 picture.

Top-bottom crop



The dotted areas show the parts of the original 4:3 image not shown on a 16:9 screen.

2.3.2 SD 16:9 IMAGES

When use of SD 16:9 images is required, aspect ratio conversion must be such that the original SD 16:9 image is enlarged to fill the 16:9 HD frame. No deterioration (geometrical distortion) of the original horizontal and/or vertical image proportions will be accepted.

2.4 TIMECODE

The timecode must be drop-frame and constant from beginning to end.

The timecode corresponding to the first frame of the program must be 10:00:00;00.

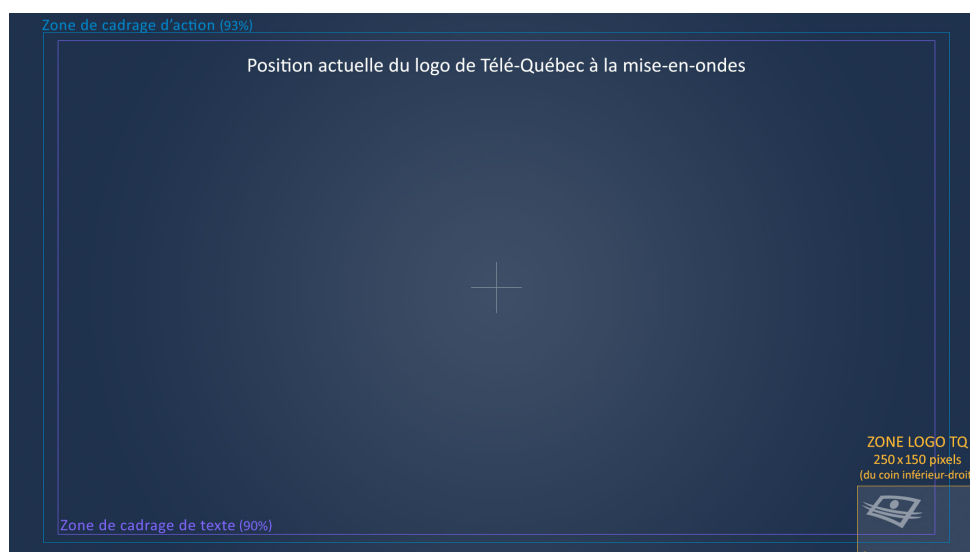
2.5 SAFE ACTION AND TEXT AREAS

All action must be framed within a central zone of height 93% x width 93% of the full frame.

All text must be framed within a central zone of height 90% x width 90% of the full frame.

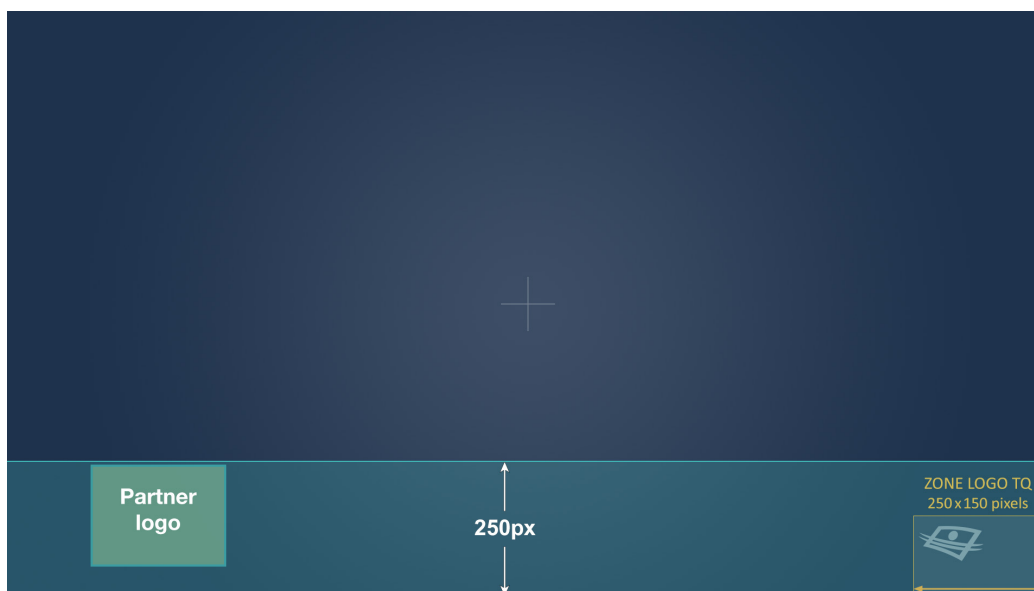
2.5.1 TELE-QUEBEC LOGO

The network ID logo (“bug”) is inserted by the Presentation department, for the full running time of the program, in the lower right corner of the frame. A further safe title space of 250 x 150 pixels from the lower right corner of the frame must be kept clear. Never use this space for subtitles, text presenting program participants, or other text.



2.5.2 COMMERCIAL BREAK BUMPER IN/OUT (where applicable)

Each bumper, lasting 4 seconds, must enable insertion of one or more partner logos by the Presentation department. The bumper must include a clear space 250 pixels tall starting from the bottom of the screen for addition of any logos. Do not insert any title or graphic in this space. The bumper must not contain any dialogue (music only).



2.5.3 BANNER OVERLAY (where applicable)

A banner is a small visual overlay **without audio** displayed at the bottom of the screen for ± 10 sec during the program presentation. A 15-second window will be determined by production on a case-by-case basis.

Rule for closed captioning: display closed captions at the top of the screen during the designated 15 seconds (provide the info to the company producing the closed captions).

2.5.4 END CREDITS

A squeeze-type digital video effect (DVE) may be inserted by Tele-Quebec during the end credits. All program audio will be cut and the visual portion of the image “squeezed” into a window occupying only part of the screen. The promo presented during this time may last from 15 to 30 seconds.

Nothing related to program content must therefore be included within the end credits.

Credits type: Given the image reduction caused by the squeeze DVE, a 50%-shrink legibility test is recommended. Avoid all serif typefaces.

Technical Specifications

High-definition (HD) video

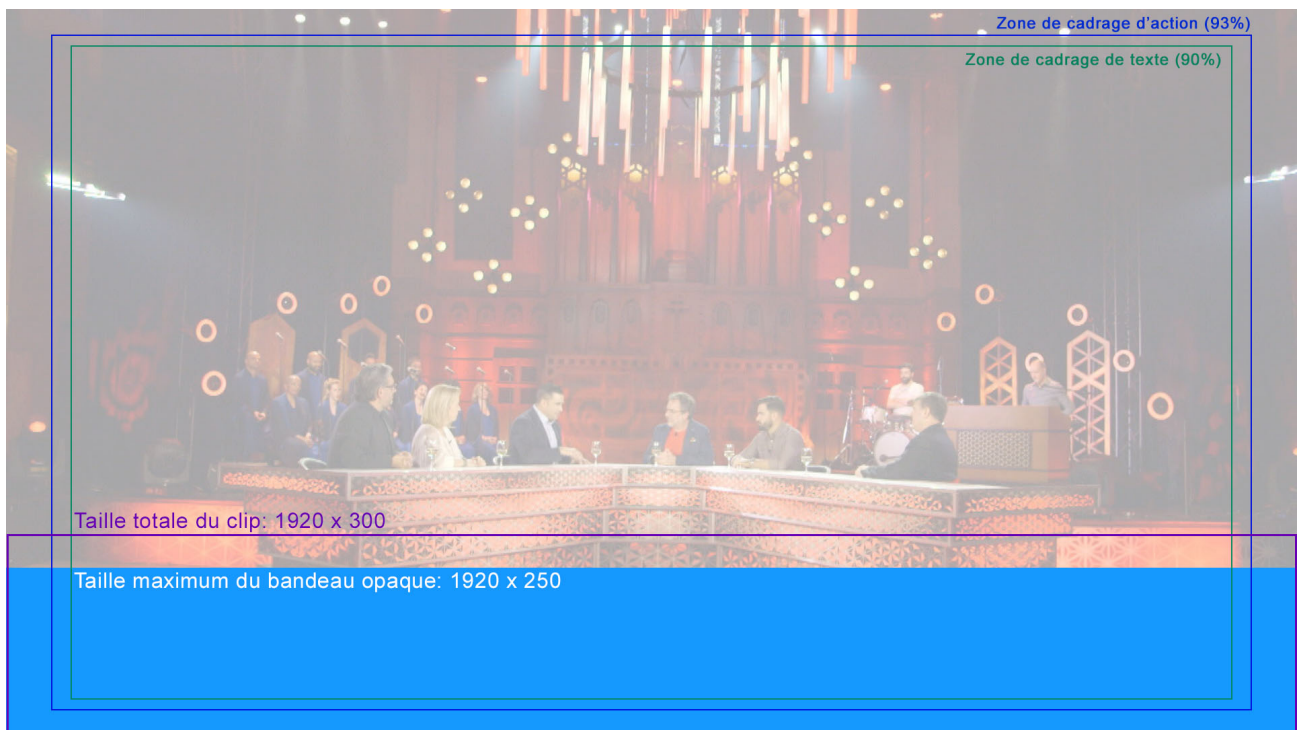
2.5.5 SPONSOR BANNERS

FORMAT AND CODEC

- Banner size: 1920 x 250
- Total clip size: 1920 x 300
- **32-bit** QuickTime codec: Apple Animation, PNG or Apple ProRes4444.
- **QuickTime** video file (.mov), **10 seconds** at **29.97 fps** with alpha channel integrated.
- The clip's alpha type should be straight (**not premultiplied**)
- The first frame and the final frame must be completely empty: 100% transparent. The banner must include an IN and OUT transition.
- Always provide for a clearance at bottom and left of the **text information** contained within the banner, so as to comply with the SMPTE-HD **safe text area** (90%) standard. That clearance corresponds to a distance of 54 pixels from the bottom and 96 pixels from the left border of the clip.

All productions must be approved by Tele-Quebec before broadcast.

See example below:



2.6 COMMERCIAL INSERTS

2.6.1 FOR PRE-PACKAGED PROGRAMS

Slots for insertion of commercials will be determined by insertion of 10 frames of black (accompanied by silent audio) during the program. These 10-second black inserts must be included in the calculation of the total program run time.

2.6.2 FOR LIVE BROADCASTS

Recorded commercial inserts shall have the true run time of the commercial blocks broadcast as part of a live program.

For example, if the commercial block run time is 3 min 30 sec, the recorded commercial insert shall also have a run time of 3 min 30 sec, and so on for all commercial blocks. The run times of these commercial inserts is not included in the total program run time.

2.7 MULTIPLE PROGRAMS ON ONE FILE

Where a file contains more than one program, the additional program(s) shall be preceded by 5 seconds of test signal (tone and colour bars), 5 seconds of slate, and 10 seconds of black.

Please provide a list of the programs (title in French and original title, if applicable) contained in the file.

3. AUDIO

3.1 MAIN PROGRAM TRACK

The main program soundtrack must be distinct 5.1 multichannel. If this is not possible, an agreement must be reached ahead of time with Tele-Quebec to produce a soundtrack in Dolby Surround or stereo.

There must be a Dolby Surround or stereo version of the main program on tracks 7 and 8.

Audio tracks must be assigned as follows:

Track 1: left channel (or, failing this, stereo Lt/Lo)	—	Stereo music, ambient sound, SFX
Track 2: right channel (or, failing this, stereo Rt/Ro)	—	
Track 3: centre channel	—	Dialogue and voice
Track 4: LFE channel	—	
Track 5: rear left channel	—	Stereo music, ambient sound, SFX
Track 6: rear right channel	—	
Track 7: stereo channel Lt/Lo	—	5.1 stereo downmix
Track 8: stereo channel Rt/Ro	—	

If the program is in Dolby Surround or stereo, it must be on tracks 1 and 2, 7 and 8; tracks 3 to 6 must be free. Note that in all cases tracks 1 and 7 represent the left channel and tracks 2 and 8 represent the right channel.

3.2 PROGRAM VIDEO DESCRIPTION TRACKS

The program video description soundtrack must be in stereo, not compressed.

We prefer delivery of a separate .wav audio file accompanying the XDCAM 50 Mbps file.

If you deliver a complete file including video description, the video description must be on tracks 11 and 12.

Note that in all cases tracks 3 and 11 represent the left channel and tracks 4 and 12 represent the right channel.

3.3 VOCAL IDENTIFICATION OF TRACKS (distinct 5.1 multichannel programs)

The distinct 5.1 multichannel program lead-in must contain a test tone reference and a vocal identification on each audio track. The total duration of all vocal identifications must be a maximum of 10 seconds, and they must precede the test tone reference. They must be clear, precise and made in sequence, so that the assignment of the tracks is easily identifiable.

3.4 REFERENCE LEVEL

Our reference level is **-20 dBFS**, which corresponds to a reference level of **+4 dBu**.

3.5 AUDIO LEVEL AND METADATA

The integrated loudness over the duration of the program, meanwhile, must be **-24 LKFS +/-2 Lu** (measured using the ITU-R BS.1770-3 algorithm).

The maximum true-peak level is -3 dB.

Dialogue intelligibility must be maintained throughout the program.

The entire audio program must have an acceptable dynamic range. Compression that is excessively high and reduces sound quality, as well as a program with too great a dynamic range, may affect listening comfort and will not be accepted.

*Tracks 7 and 8, as well as the video description tracks 11 and 12 must correspond to the same standards mentioned above.

4. LEAD-IN AND LEAD-OUT

The audio and video lead-in is 80 seconds and serves to calibrate the equipment as well as identify the contents of the files. The lead-out portion should be a minimum of 20 seconds. Each file must contain a lead-in, a program and a lead-out without any breaks.

Timecode	Duration (seconds)	Video track	Audio tracks
09:58:40;00	10	Black	Vocal identifications
09:58:50;00	50	Colour bars	Test tone reference 400Hz
09:59:40;00	10	Slate	Silence
09:59:50;00	10	Black	
10:00:00;00	----	Program	Program
-----	10	Black	Silence
-----	----	Textless (if applicable)	Silence

Lead-in
Lead-out

The test tone reference and colour bar levels must be consistent with the audio and video levels of the recorded program that follows.

Schematic layout of the tape or file:

Timecode	09:58:40;00	09:58:50;00	09:59:40;00	09:59:50;00	10:00:00;00		
Video track	Black	Colour bar	Slate	Black	Program	Black	Textless (if applicable)
Audio track	Vocal identifications	Test tone reference 400Hz	Silence	Silence	Program	Silence	

The slate must include the following information:

- French title (and original title, if applicable);
- Episode title and number;
- Audio identification (distinct 5.1 multichannel or, failing this, Dolby Surround or stereo);
- Program duration.

5. CLOSED CAPTIONING (CC)

When the program is closed captioned, it can be delivered in two different formats depending on the agreement negotiated:

Closed captioning file format:

- The code must be delivered in an individual file for each program. The type of file format accepted is **Scenarist (.SCC)**.

Timecode must be drop-frame, with a semicolon (;).

I.e.: **10:00:00;00**

Closed captioning video format:

- The code must be inserted in the digital video signal in the form of data packets according to the SMPTE 334M standard. Captions must be EIA 608 type encapsulated in EIA 708 data, in accordance with the EIA 708 standard.

6. RIGHT OF REFUSAL

Any departure from these specifications must have been authorized by prior agreement with Tele-Quebec.

Tele-Quebec reserves the right to reject any program that does not comply with the technical specifications described in this document.

Consult our website at www.telequebec.tv to make sure you have the latest version of this standard.