TECHNICAL REQUIREMENTS

for the reception of TV and non-linear (VOD Service) programs, with the exception for news and public affairs programs, with Technical requirements for the takeover of stl subtitle files and closed captions

Effective as of October 23rd, 2026

SECTION 1. TECHNICAL REQUIREMENTS - VIDEO

1.1. VIDEO FORMATS

1.1.1. SD (Specification of SD quality according to ITU-R BT.601)
Resolution 720x576, 16:9 FHA
Framerate 25 fps progressive or interlaced (576i25, top field)
Color space according to ITU-R BT.601

Delivery of SD quality to TV Nova is allowed only in justified cases in video format agreed with TV Nova.

1.1.2. HD (Specification of HD quality according to ITU-R BT.709)
Resolution 1920x1080, 16:9
Framerate 25 fps progressive or interlaced (1080i25, top field)
Color space according to ITU-R BT.709

1.1.3. UHD (Specification of UHD quality according to ITU-R BT.2020)
Resolution 3840x2160, 16:9
Framerate 25 or 50 fps, progressive
Color space according to ITU-R BT.709

1.2. SIGNAL PARAMETERS

1.2.1. SDR
Signals in HD resolution must be kept in accordance with ITU-R BT.709-6
The Luminance Y signal must be within a range of - 1% (- 0.007 V) to 103% (0.721 V) relative to the black level.
The color range must be within the valid RGB gamut, i.e. after decoding to RGB, all color components must fit within the legal range of -5% to 105%.

1.2.2. HDR
TBA, not yet supported as a delivery format.

1.3. ASPECT RATIO AND SAFE ZONE (SAFE AREA)

The recommended aspect ratio is 16:9.
Any form of deformation as a result of format conversions is not permitted.
Subsequent playout and distribution of the program will in principle avoid deformation or removal of parts of the image.
The format of the image must be unchanged throughout post-production.

1.3.1. SD DEFINITION
The preferred format of programs In SD resolution is 16:9 anamorphic (Full Height Anamorphic)

1.3.2. HD AND UHD DEFINITION
The preferred format of programs in HD and UHD definition is 16:9

1.3.3. WIDESCREEN FORMATS
In SD resolution the Film wide-screen formats (18:9 or 21:9) are accepted in a 16:9 anamorphic aspect ratio.
In HD or UHD resolution the Film wide-screen formats (18:9 or 21:9) are preferentially accepted at 16:9 aspect ratio.

In these cases the black stripes at the top and bottom of the image are acceptable.
In the case of an aspect ratio of 21:9, the image will be adjusted (if possible) to 18:9 according to EBU recommendation R93-1998.

1.3.4. SAFE ZONE - SAFE AREA
The safe area is specified in the EBU R95 rev2017 recommendation

Captions and graphics must always be located only in the active part of the image signal.
For 16:9 programs, it's 5% below the top or above the bottom edge, and 10% from the left or right edge.
For 4:3 programs, a safe area of 10% from the edges must be maintained.

1.4. SPECIFICATIONS FOR THE RECEPTION OF DRONE AND REMOTELY CONTROLLED CAMERA FOOTAGE

All this camera / recording devices must be compliant with EBU R118 recommendation
Usage of all such devices must be consulted with TV Nova s.r.o. prior the actual shooting.

SECTION 2. TECHNICAL REQUIREMENTS - AUDIO

In general, all Spots (i.e. Advertising Spots, Sponsorship Spots, and Teleshopping Spots) and own production must comply with EBU R128 recommendation
The offset (time shift) between the picture and sound must be subjectively imperceptible, according to R37-2007 it must not exceed 40 ms if sound gains time and 60ms if sound is delayed.

2.1. AUDIO MEASUREMENT

The audio signal shall generally be measured in its entirety, without emphasis on specific elements such as voice, music, or sound effects.
The measurement shall be made in compliance with both ITU-R BS.1770 and EBU Tech Doc 3341

2.2. LOUDNESS

The Program Loudness Level shall be normalized to a Target Level of -23 LUFS.
The permitted deviation from the Target Level shall generally not exceed ±1 LU for programs where an exact normalization to the Target Level is not achievable practically.
The recommended Loudness Range (LRA) is less than 20 LU according to EBU R128

2.3. TRUE PEAK

The maximum permitted True Peak Level is -1 dBTP.
Exceptions include sports and other special programs where peak signal levels must not exceed -9 dBFS.

SECTION 3. TYPES OF CONTENT DELIVERY

3.1. FILE BASED DELIVERY OF PROGRAMS AND SPOTS

3.1.1. PREFFERED WAY OF CONTENT DELIVERY
The file-based delivery in accordance with the file formats specified in Acceptable types of files for file-based delivery section of these requirements is the preferred way of content delivery.

3.1.2. GENERAL RULES
Prior to delivery of a program as a file, the method of reception and interface must be individually specified with the supplier.
Before regular program deliveries from a specific supplier a test transfer must be performed.
Following the test transfer the compatibility of files with technical equipment of TV Nova s.r.o. must be agreed upon.
Definition, setup and test transfer has to be consulted with Media Asset management department via e-mail mam@nova.cz.

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3.2. DELIVERY OF ADVERTISING SPOTS, SPONSORSHIP SPOTS AND TELESHOPPING SPOTS

The Advertiser is obliged to deliver Spots exclusively in a file-based manner through approved suppliers designated by TV Nova s.r.o. for this purpose.
An approved supplier is a supplier listed on the list of approved suppliers published on the TV Nova s.r.o. website (the "**Approved Supplier**").
TV Nova s.r.o. is entitled to unilaterally amend the list of Approved Suppliers.
In rare and justified cases, it is possible to arrange an individual procedure for the delivery of Spots by email to traffic@nova.cz.

3.3. TAPE BASED (NON-PREFFERED) DELIVERY OF PROGRAMS AND SPOTS

Upon prior agreement with TV Nova s.r.o., HDCAM, XDCAM HD 422, or Digital Betacam tape formats can be accepted in rare and justified cases.
Even in these cases, materials must be delivered without defects and on the highest quality tape media available.
Details of tape delivery are stipulated in the document Specification of tape based content delivery, which is available upon request at mam@nova.cz.

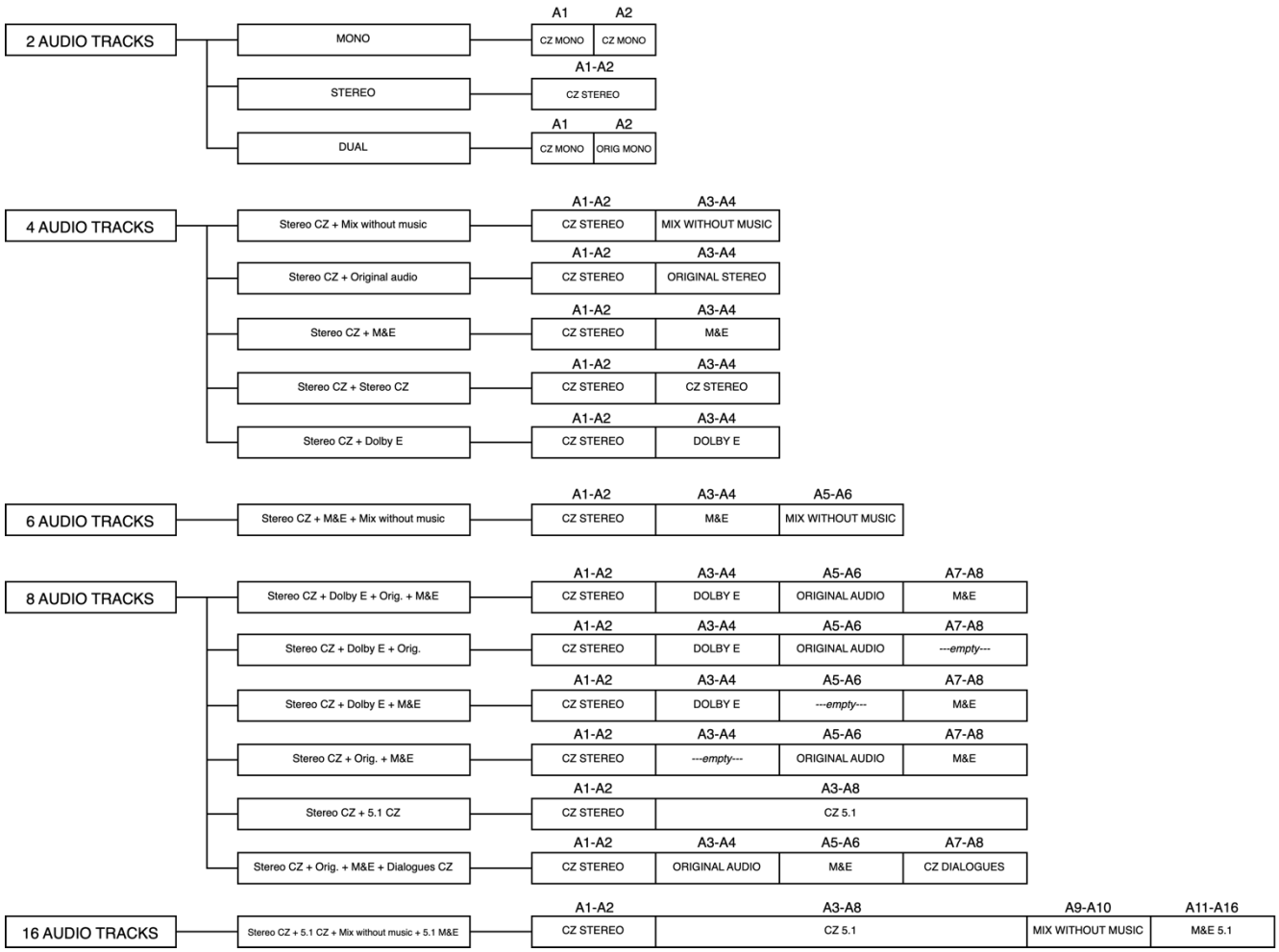
SECTION 4. SUBTITLES - CLOSED CAPTIONS

All subtitle files have to be delivered as a stl file according to EBU TECH. 3264-E specification

4.1. GENERAL RULES FOR CLOSED CAPTIONS

The subtitle file has to contain the correct title language. The only allowed language is Czech – Country of Origin = "CZE".
One-row subtitles have to be targeted on row 23 (Vertical position), two-row subtitles have to be targeted on row 22.
Maximum allowed number of rows: 2.
Maximum allowed characters on a row: 36.
Reading speed should be 10 characters per second.
In general, one-row subtitles should be visible for about 2 seconds (minimum is 01:19), two-row subtitles should be visible for about 4 seconds (maximum is 08:00).
Subtitle alignment is always set to center.

SECTION 5. ACCEPTABLE / PRESCRIBED ORDER OF AUDIO TRACKS



Upon agreement, if the maximum of 16 audio tracks is surpassed, it is possible to deliver M&E 5.1 as a separate audio wav file.

AUDIO 5.1 CHANNEL ROUTING

1	2	3	4	5	6
Left	Right	Center	LFE	Left Surround	Right Surround

DOLBY-E CHANNEL ROUTING

1	2	3	4	5	6	7	8
Left	Right	Center	LFE	Left Surround	Right Surround	Left stereo	Right stereo

AUDIO SPECIFICATION

Multiple audio streams	Audio container	Audio Codec	Layout, no. of channels	Bit depth	Sample rate
YES	AES3	PCM (EBU) DolbyE	As described above	16/24	48 KHz

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TECHNICAL REQUIREMENTS

ACCEPTABLE TYPES OF FILES FOR FILE BASED DELIVERY - VIDEO
MAIN VIEWING ENVIRONMENT: TV, PREFFERED ENCODER: TELESTREAM

HD 25 XAVC progressive

Format	Profile	Resolution (aspect ratio)	Container	Framerate	Video codec	Compression	Video bitrate Class 100 CBR only	MAIN VIEWING ENVIRONMENT	GOP	Timecode	Overlays	Color sampling	Color bit depth	Color space
HD progressive	XAVC HD	1920x1080 (16:9)	MXF OP1a	25	H264	Long GOP (interframe)	50 Mbps	TV	Closed	EBU SOM 00:00:00:00	NO	4:2:2	10 bit	SDR Rec 709
						I-Frame (intraframe)	112 Mbps							

HD 25 XAVC interlaced

Format	Profile	Resolution (aspect ratio)	Container	Framerate	Video codec	Compression	Video bitrate Class 100 CBR only	MAIN VIEWING ENVIRONMENT	GOP	Timecode	Overlays	Color sampling	Color bit depth	Color space
HD Interlaced top field first	XAVC HD	1920x1080 (16:9)	MXF OP1a	25	H264	Long GOP (interframe)	50 Mbps	TV	Closed	EBU SOM 00:00:00:00	NO	4:2:2	10 bit	SDR Rec 709
						I-Frame (intraframe)	112 Mbps							

HD 50 XAVC progressive

Format	Profile	Resolution (aspect ratio)	Container	Framerate	Video codec	Compression	Video bitrate Class 100 CBR only	MAIN VIEWING ENVIRONMENT	GOP	Timecode	Overlays	Color sampling	Color bit depth	Color space
HD progressive	XAVC HD	1920x1080 (16:9)	MXF OP1a	50	H264	Long GOP (interframe)	50 Mbps	TV	Closed	EBU SOM 00:00:00:00	NO	4:2:2	10 bit	SDR Rec 709
						I-Frame (intraframe)	223 Mbps							

UHD 25 XAVC progressive

Format	Profile	Resolution (aspect ratio)	Container	Framerate	Video codec	Compression	Video bitrate	MAIN VIEWING ENVIRONMENT	GOP	Timecode	Overlays	Color sampling	Color bit depth	Color space
UHD progressive	XAVC UHD	3840x2160 (16:9)	MXF OP1a	25	H264	Long GOP (interframe)	200 Mbps	TV	Closed	EBU SOM 00:00:00:00	NO	4:2:2	10 bit	SDR Rec 709
						I-Frame (intraframe)	CBR, Class 300 250 Mbps							

UHD 50 XAVC progressive

Format	Profile	Resolution (aspect ratio)	Container	Framerate	Video codec	Compression	Video bitrate	MAIN VIEWING ENVIRONMENT	GOP	Timecode	Overlays	Color sampling	Color bit depth	Color space
UHD progressive	XAVC UHD	3840x2160 (16:9)	MXF OP1a	50	H264	Long GOP (interframe)	200 Mbps	TV	Closed	EBU SOM 00:00:00:00	NO	4:2:2	10 bit	SDR Rec 709
						I-Frame (intraframe)	CBR, Class 300 500 Mbps							

XDCAM HD 25 interlaced is also accepted as a delivery format
(profile XDCAM HD 422 | 1920x1080 |16:9 / 4:3 pillar box | 25fps, top field first | container MXF OP1a | codec MPEG-2, GOP M=3, N=12 | 50 Mbps | 4:2:2 | 8bit | SDR Rec 709)

ACCEPTABLE TYPES OF FILES FOR FILE BASED DELIVERY - PREFFERED ORDER OF AUDIO TRACKS

2.0 CZE

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16
CZE Stereo		M&E		CZE selfmix		Empty									
Left	Right	Left	Right	Left	Right										

5.1 CZE

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15	A16
CZE Stereo		CZE 5.1						CZE selfmix		M&E 5.1					
Left	Right	Left	Right	Center	LFE	Left Surround	Right Surround	Left	Right	Left	Right	Center	LFE	Left Surround	Right Surround

A checked yellow box indicates the obligatory delivery parameters of the final master.

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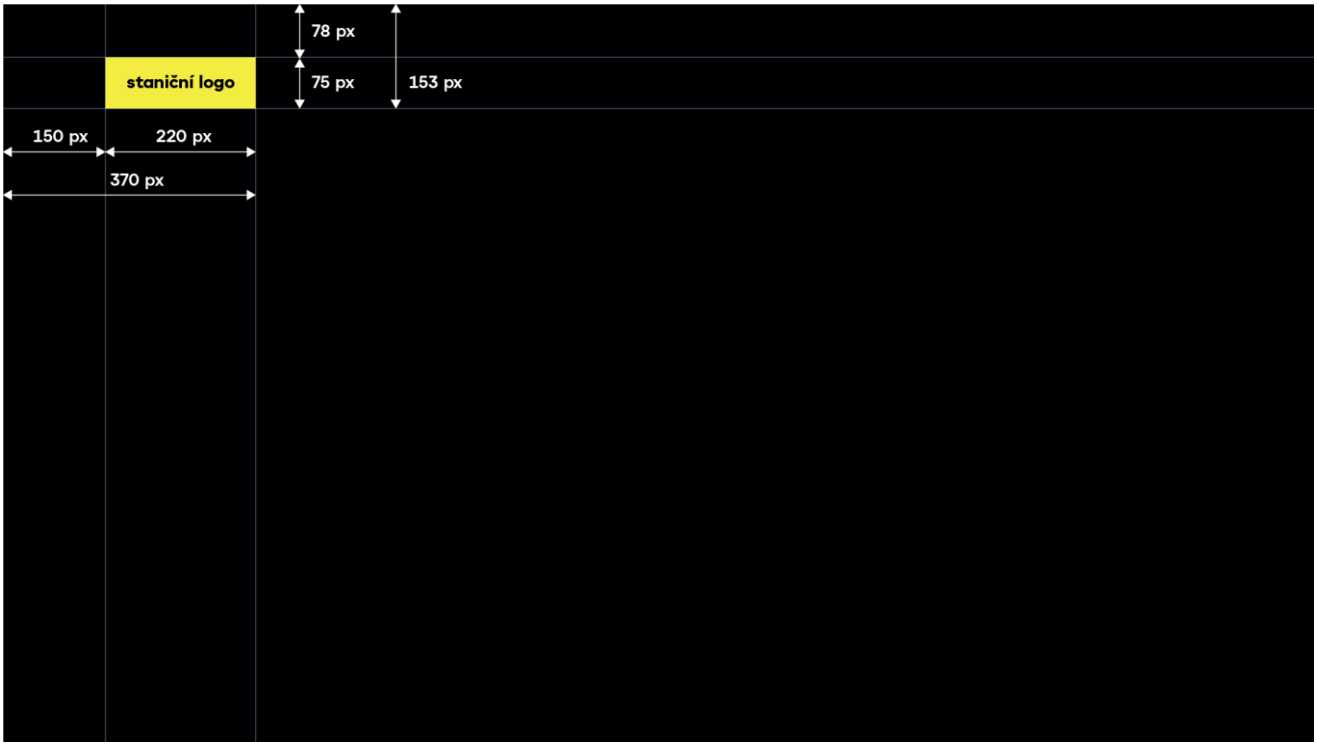
SECTION 6. Protection zone of Nova group station logos

The protection zone of Nova group station logos has dimensions of 220 x 75 px.
It is positioned 150 px from the left and 78 px from the top edge. See figure below:



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