



NPC Media GENERAL File Delivery Specifications:

File delivery of programme material may be acceptable by prior mutual agreement between the parties.

The programme shall be supplied in High Definition (HD), as the TEXTED version, with any Textless material at the tail of the programme, 1 minute after end credits. (See below for examples of Texted & Textless)

The HD file format shall be the 1080/50i Sony XD-CAM 422 50Mbit/sec codec, with 8 PCM audio tracks, wrapped in the MXF OP1a container. The method of delivery is to be mutually agreed upon, whether via a file delivery service such as Aspera, or a physical Hard Drive. [Hard Drive can be NTFS or exFAT formatted, & USB 3.0 speed is preferable. A USB-powered drive is also preferred]. A ProRes422 file *may* be acceptable, but only via prior agreement with NPC.

HD

- XD-CAM HD 422 format
- MPEG2 Long GOP codec, 50 Mbps
- 422P@HL profile, GOP: M=3, N=12, first GOP must be closed • 1920 x 1080 resolution, 25 fps (50i)
- Interlaced scan, Upper Field First
- MXF container, OP1a pattern partition status: Closed and Complete
- 16:9 display aspect ratio, & the aspect ratio must be indicated properly in the MXF metadata.
- 8 channel audio, 48 KHz, 24 bit [8 x mono audio channels]
- Uncompressed audio, constant bit rate

Any 24 frame (23.98p) product shall be converted to 25 (50i) by means of a speed change, not a standards conversion using frame interpolation or motion compensation.

Any native 59.94i product shall be converted to 50i by a Ph.C or motion vector compensated standards conversion.

If the 59.94i material essentially contains an embedded 23.98 fps programme via 3:2 pull-down, then that 23.98 frame product must be first extracted from the 59.94i master via 3:2 cadence detection & removal. Then the resulting 23.98 fps programme can be speed changed to 25 (50i) in the normal required method.

Only if HD material is NOT available will NPC accept Standard Definition (SD). The SD file format shall be .mxf 608/50i 50 Mbit/sec, details below:

SD

- MPEG IMX50 codec, [50 Mbps]
- MPEG2 4:2:2@Main video codec profile, GOP: N=1, constant bit rate
- PAL video standard (625/50). The resolution of the video must be 720 x 608 pixels, which consists of 32 lines of VBI information and 720 x 576 pixels of active image.
- Interlaced scan, Upper Field First
- MXF container, OP1a pattern, partition status: Closed and Complete
- 16:9 display aspect ratio (full height anamorphic); the aspect ratio must be indicated properly in the MXF metadata. (4:3 aspect is acceptable for archival material. Again, aspect ratio must be indicated in metadata)
- 8 channel audio, 48 KHz, 16 bit [8 x mono audio channels]
- Uncompressed audio, constant bit rate

AUDIO

The audio configuration shall be a Stereo Full Mix on tracks 1 & 2 (L_r R_r or L_o R_o), and a 5.1 Surround Sound Full Mix on tracks 3 to 8 inclusive.

- The track layout for this programme configuration shall be:

1. Stereo Left
2. Stereo Right
3. 5.1 Front Left
4. 5.1 Front Right
5. 5.1 Centre
6. 5.1 LFE
7. 5.1 Left Surround
8. 5.1 Right Surround



- If a 5.1 audio mix is not available, then the minimum audio track layout shall be:

1. Stereo Left
2. Stereo Right
3. M+E Left (or Mix Minus VO Left)
4. M+E Right (or Mix Minus VO Right)
5. MOS (Mute On Sound)
6. MOS
7. MOS
8. MOS

- Audio Loudness on the Stereo soundtrack shall measure -24LKFS. True Peak (TP) not to exceed -2dB TP.
- Audio Loudness on the 5.1 soundtrack shall measure -24LKFS. True Peak (TP) not to exceed -2dB TP.

To this aim, a suitable BS.1770-4 compliant loudness meter will be used as the measuring instrument. See OP59 for more detail. <http://www.freetv.com.au/>

Correct audio sync is to be maintained at all times with the video.

An ID/Clapper Board should be present at the head of the file for identification purposes, with the title of the programme/episode number, *exactly as it appears on-screen*. In addition, the Clapper Board shall include:

- Duration of Programme.
- Audio Status and Track Layout.
- Any other Programme related data.

Required Layout/Timecode:

00:58:00:00 – Start of file: [Black Video / Mute Audio]

00:58:30:00 – Colour Bars (75%) & 1 kHz Audio Tone (All relevant tracks which contain audio, -20dB)

00:59:30:00 – ID/Clapper Board

00:59:50:00 – Black (or Countdown)

01:00:00:00 – Start Of Programme

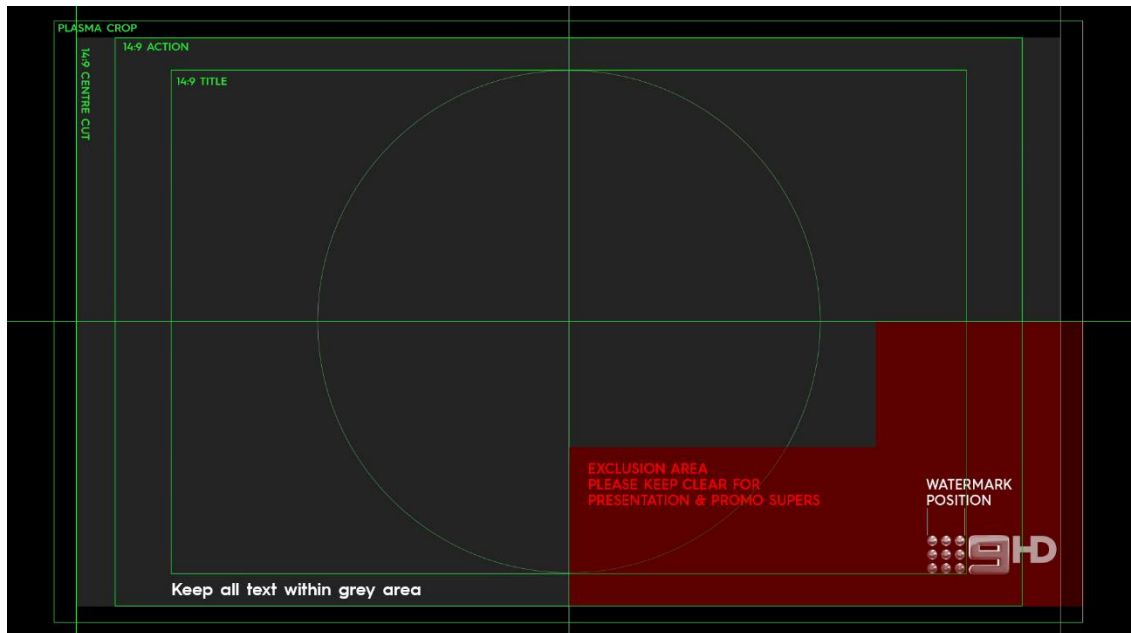
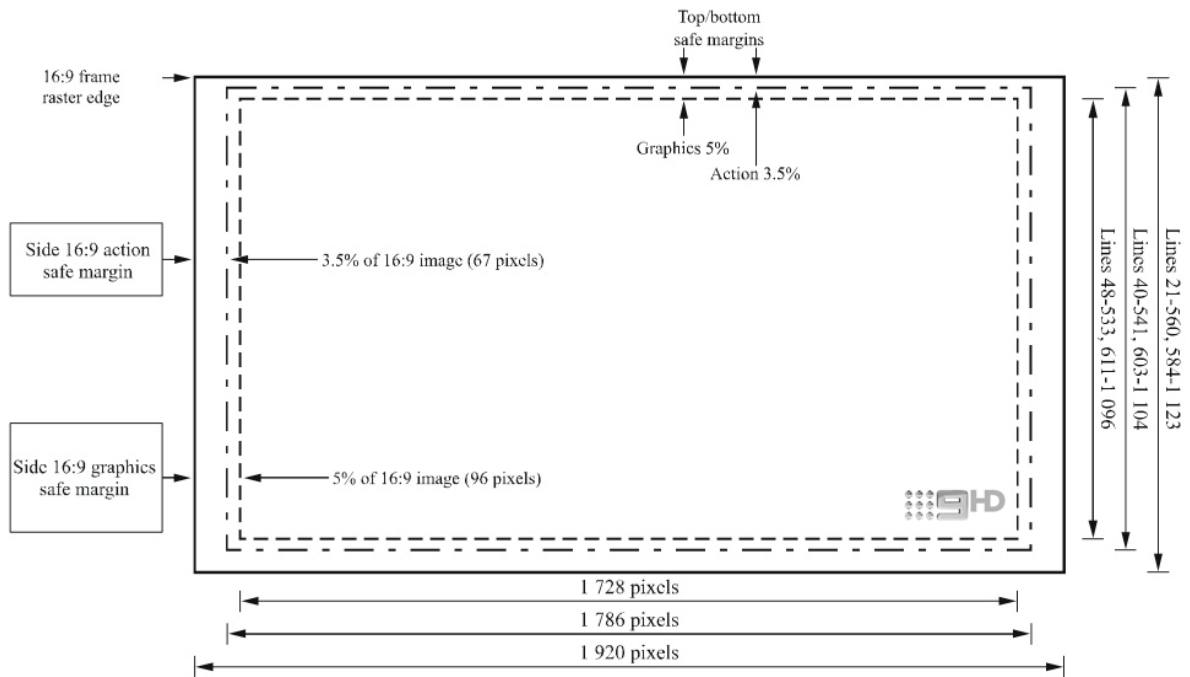
If programme is already compiled into segments, then the head of each segment shall have a 10 second countdown. Each segment shall start on an even timecode number (ie Segment two might start at T/C 01:09:00:00). There should be a minimum 20 seconds of black between segments, not including countdown.

Compiled programmes are required to contain a 3-5 second texted playoff, which can consist of a still or moving graphic, listing the title of the programme, or title & episode of the programme if appropriate.

‘C’ classified programmes must also contain 5 sec. playons at the start of segments as well as playoffs.

16:9 programmes should preferably be 16:9 graphic/action safe, but 14:9 graphic/action safe, or 4:3 graphic/action safe is also acceptable. Below is the 16:9 HD graphic/action safe area chart.

16:9 Graphic / Action Safe Area Chart:

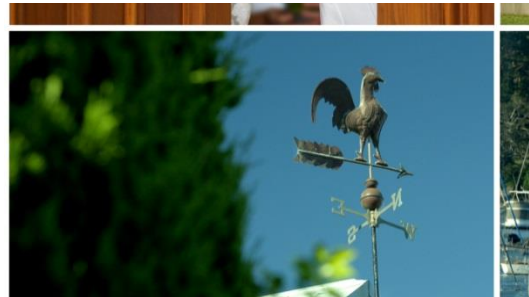


Please note the position of the Channel ID Watermark in the lower right corner of the above images, and avoid placing text supers in that position.

Texted/Textless example frames:



TEXTED



TEXTLESS

Texted Playoff examples:



Animated Texted Playoff example:



If you have any further queries on the technical delivery specifications, please contact:

Craig Mecak

Network Broadcast Media Standards & Quality Control Manager

T1 +61 2 9186 5362 T2 +61 2 9186 5349 M 0407 270 382

A NPC (National Playout Centre), 12 Rodborough Road, Frenchs Forest, NSW, 2086

E cmecak@npcmedia.com.au

E cmecak@nine.com.au