RNZ Media File Format Standards

Version 1.0
2019-06-24

Subjective Assessment Quality Requirements

General Vision Quality Requirements

It is inherently difficult to define precisely a suitable quality video product. There may therefore be some subjective assessments or reports that may be regarded as imprecise. This is an unavoidable consequence of the rapid changes in technology.

Guidelines are as follows:

- The picture must be sharp and well lit (unless artistic considerations require otherwise).
- The video signal must be free of excessive black crushing and highlight compression.
- Transient response shall be such that streaking, ringing, smear echoes and overshoots are not noticeable.
- Moiré and other patterning shall not be visible.
- Hum, cross talk and other spurious signals must not be apparent.
- Colour rendition, especially skin tones, must be a realistic representation of the scene portrayed unless artistic considerations require otherwise.
- Video processing (e.g. effects devices) must not introduce unintentional changes to luminance and chrominance levels nor cause perceptible timing shifts on entry or exit from the effect.
- Appropriate audio or video delay must be used to compensate for lip-sync errors.
- There must be no visible contouring / artefacts caused by multiple D-A and A-D conversions. Quantisation Noise shall not be apparent.

General Audio Quality Requirements

Audio signals must be compliant with Free-TV Australia's OP59.

Audio signals must be suitable for reproduction in a domestic environment. Dynamic range should be restricted and changes in loudness controlled so that the viewer has no need to adjust volume during or between programmes.

All stereo recordings must provide good mono compatibility.

The audio shall be free of spurious signals such as noise, hum and cross-talk. Sibilance, distortion and other artifacts should not be apparent.

The audio shall not show dynamic and frequency response artefacts as a result of the action of noise reduction or low bit rate coding systems.

Audio compression should be used as little as possible as the effects of compression used for broadcast distribution and transmission can exacerbate impairments. When audio compression is used to control the dynamic range of the programme it should be consistent with the style of the production but not to be excessive so as to cause viewer/listener annoyance.

High Definition Video File Delivery Specifications

Video – XDCAM HD422 1080 25p/50i

Video Track	
Container	
Format	MXF
Profile	OP-1A
Settings	Closed/Complete
Timecode Start	00:00:00:00
Video Stream	
Format	MPEG2 Video
Profile / Level	4:2:2@High
Resolution	1920x1080
Bitrate	50Mbps CBR (Constant Bitrate)
Display Aspect Ratio	16:9
Timecode Start	00:00:00:00
Color Encoding	YCbCr / 4:2:2
Colorspace	BT.709
Bit Depth	8bit
Acceptable Frame Rates	25p / 50i
Scantype	Progressive / Interlaced (Top Field First)

Audio – XDCAM HD422 1080 25p/50i

Audio Track	
Codec	Linear-PCM
Sample Rate	48KHz
Bit Depth	24bit
Channel Count	2, 6 or 8
Channel Mapping	2.0 Only: • Channel 1 – Stereo Left • Channel 2 – Stereo Right
	5.1 Only: • Channel 1 – Left • Channel 2 – Right • Channel 3 – Center • Channel 4 – LFE • Channel 5 – Left Surround • Channel 6 – Right Surround
	5.1 + 2.0: • Channel 1 – Left • Channel 2 – Right • Channel 3 – Center • Channel 4 – LFE • Channel 5 – Left Surround • Channel 6 – Right Surround • Channel 7 – Stereo Left • Channel 8 – Stereo Right
Loudness	Measured using BS1770-3 to comply with OP59 • Target: -24LKFS • Max TP: -2 • Max LRA Spoken Feature: 10LU • Max LRA Music/Drama: 15LU

Video – ProRes HD422 1080 25p/50i/50p

Video Track	
Container	
Format	MOV (QuickTime)
Profile	ProRes 422 HQ
Timecode Start	00:00:00:00
Video Stream	
Format	ProRes 422 HQ
Profile / Level	4:2:2@High
Resolution	1920x1080
Display Aspect Ratio	16:9
Timecode Start	00:00:00:00
Color Encoding	YCbCr / 4:2:2
Colorspace	BT.709
Acceptable Frame Rates	25p / 50i / 50p
Scantype	Progressive / Interlaced (Top Field First)

Audio – ProRes HD422 1080 25p/50i/50p

Audio Track	
Codec	Linear-PCM
Sample Rate	48KHz
Bit Depth	24bit
Channel Count	2, 6 or 8
Channel Mapping	2.0 Only: • Channel 1 – Stereo Left • Channel 2 – Stereo Right
	5.1 Only: • Channel 1 – Left • Channel 2 – Right • Channel 3 – Center • Channel 4 – LFE • Channel 5 – Left Surround • Channel 6 – Right Surround
	5.1 + 2.0: • Channel 1 – Left • Channel 2 – Right • Channel 3 – Center • Channel 4 – LFE • Channel 5 – Left Surround • Channel 6 – Right Surround • Channel 7 – Stereo Left • Channel 8 – Stereo Right
Loudness	Measured using BS1770-3 to comply with OP59 • Target: -24LKFS • Max TP: -2 • Max LRA Spoken Feature: 10LU • Max LRA Music/Drama: 15LU

External Subtitle Files

Subtitles	
Container	
Format	EBU .stl
File Extension	.stl
Reference Spec	EBU Tech-3264
Timecode Start	00:00:00:00
Container	
Format	TTML
File Extension	.xml / .dfxp / .ttml
Encoding	UTF-8
Reference Spec	W3C TTML
Timecode Start	00:00:00:00

Audio File Delivery Specifications

Audio – WAV (PCM) 24/48

Audio Track	
Container	
Format	WAV
File Extension	.wav
Audio Stream	
Codec	Linear-PCM
Sample Rate	48KHz
Bit Depth	24bit
Channel Count	2, 6 or 8
Channel Mapping	2.0 Only: • Channel 1 – Stereo Left • Channel 2 – Stereo Right
	5.1 Only: • Channel 1 – Left • Channel 2 – Right • Channel 3 – Center • Channel 4 – LFE • Channel 5 – Left Surround • Channel 6 – Right Surround
	5.1 + 2.0: • Channel 1 – Left • Channel 2 – Right • Channel 3 – Center • Channel 4 – LFE • Channel 5 – Left Surround • Channel 6 – Right Surround • Channel 7 – Stereo Left • Channel 8 – Stereo Right
Loudness	Measured using BS1770-3 to comply with OP59 • Target: -24LKFS • Max TP: -2 • Max LRA Spoken Feature: 10LU • Max LRA Music/Drama: 15LU

High Definition Photos/Still Images

Still images, Screen Res - JPEG

Image	
Container	
Format	JPEG or PSD
File Extension	.jpg or .psd
Minimum Dimensions	1920x1080 NOTE: character art or main graphic can be smaller ie 1280 x720 with background extending to the full 1920x1080
Resolution	72dpi
Colour Space	RGB

Collected final PSD or InDesign file to be included when appropriate, ie to separate the Text graphic from the main image.

Still images, Print Res - JPEG

Image	
Container	
Format	PDF (JPEG or TIFF are acceptable)
File Extension	.pdf (or .jpg or .tif)
Minimum Dimensions	297x210mm (A4)
Resolution	300dpi
Colour Space	CMYK

collected final PSD or InDesign file to be included when appropriate, ie to separate primary graphic elements from the main image.

High Definition Vector Graphics

Vector Graphics - EPS

Graphics	
Container	
Format	EPS or AI
File Extension	.eps or .ai
Note	To be supplied as true vector (i.e. not rasterised)