

Delivering a nature series to US public television and proving it, line by line



43 specification items verified, in writing	10.1 GB air-ready XDCAM HD422 master delivered	0 re-encodes — picture stream-copied from the export	~1 hour of unattended machine time per episode, once tooled
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THE SITUATION

The programme is a half-hour nature series for young audiences, made by an independent producer. The master is delivered to **NETA**, which distributes it to US public television; the episode **airs on PBS**. I have worked with the producer for six years across their video projects. For this season I came in for the **final edit and the technical delivery** — testing the master against the distributor's requirements, correcting what failed, and producing the file and the written report that went to NETA in September 2026 for an October feed date.

Getting it wrong means a rejected master, a missed feed date and, for captions, late fees.

WHAT I DID

- **Built the verification system.** A purpose-built system with the NETA, PBS and FCC requirements written into it — the kind of tooling that normally only large facilities have. It assembles the master from the export, marks every measurable specification item pass or fail, and lists what has to be checked on the picture.
- **Found where the NLE stops.** The export was right on picture and wrong on delivery: non-drop timecode, colour signalling that had to be written explicitly, and video levels running outside 0–100 IRE. So the pipeline was split — picture exported once and **stream-copied**, with wrapper, timecode and signalling written to spec. No generation loss, verified frame by frame by checksum.
- **Measured instead of assuming.** The encode screened for decode errors, blocking, frozen frames and field order; a photosensitivity screening for luminance and red flash; loudness and dialog level measured over the full programme; lip sync checked against the producer's original file; stereo phase checked.
- **Kept the fix proportionate.** The RGB gamut looked alarming on scopes; measured across the programme it sat at a median 0.05% of pixels outside 0–700 mV — inside tolerance. No creative re-grade: the levels were brought inside 0–100 IRE with the procedure NETA itself recommends, and all 46,147 frames were scanned to prove it.

WHAT THE CLIENT RECEIVED

ITEM	RESULT
MXF OP1a · XDCAM HD422 · MPEG-2 LGOP 50 Mbps · 1080i29.97 upper field first · 4:2:2 · 16:9	Pass
2 × PCM 24/48 — stereo on two discrete tracks, the layout NETA 2025 requires	Pass
Drop-frame timecode from 01:00:00:00 · black at head and tail · no slate	Pass
Video levels — all 46,147 frames scanned, within tolerance of 0–100 IRE	Pass
Loudness –24.0 LKFS integrated · true peak –9.6 dBTP	Pass
BT.709 matrix / primaries / transfer signalling	Pass
Image artefacts — 0 decode errors, no blocking, no unintended freezes	Pass
Photosensitivity — luminance and red-flash screening (Ofcom / ITU-R)	Pass
Captions — English .scc authored in-house, decoded byte by byte, signed validation statement	Pass

...plus a **seven-page technical report** — 43 items, each with its measured value, the expected value and the result — and a **delivery manifest with an MD5 for every file**, so the producer hands the distributor proof, not hope.

WHY IT MATTERS TO YOU

Most independent producers discover this problem four to six weeks before feed date, when the distributor rejects a file. The work above turns that into a routine: your export in, an air-ready master and a written QC report out, in days — and the same tooling re-checks every episode of a season in about an hour of unattended machine time.

SERVICES

- **Delivery QC audit** of a master you already have — report within 48 h. The first one is free, once per production company.
- **Compliant master + QC report** from your export — per episode or per season, with a checksum manifest for every file.
- **Edit, finish and deliver** — full post through upload and technical forms, captions included.

From the first export to a signed delivery

Page one is the result; this is the method behind it, stage by stage. On this series the first master to the signed delivery took a week, 647 captions written in-house included. With the system in place, each further episode runs through the whole suite in about an hour of unattended machine time.

- 1 Map the specification.** NETA's 2025 File Submission Requirements, with the PBS Technical Operating Specification only where NETA is silent, and the FCC caption quality rules. Every requirement becomes a line in the verification system, before any file is touched.
- 2 Build the master from the export.** Picture exported once from the edit and stream-copied. Wrapper, drop-frame timecode from 01:00:00;00 and BT.709 signalling written to spec; stereo on two tracks; a frame of black at head and tail.
- 3 Fix what the measurements find.** Every correction is in the table below, measured before and after. The mix came down with gain rather than a limiter, so the programme kept its dynamics; the levels were legalised with the procedure NETA itself recommends.
- 4 Measure everything, on the delivered file.** Every frame scanned for levels; loudness and dialog level over the full programme; lip sync against the producer's original; the encode screened for artefacts; a photosensitivity screening for luminance and red flash.
- 5 Write and validate the captions.** A sidecar .scc, named exactly as the video and starting on the same timecode. 647 captions written in-house, decoded byte by byte against the master, and moved to the top of the frame wherever they would cover on-screen text or a face.
- 6 Deliver with the paperwork.** The master, the caption file, NETA's technical evaluation form filled from the measured values, the technical report, a signed caption validation statement, and a manifest with an MD5 for every file.

OUT OF THE EDIT VS. THE DELIVERED MASTER

ITEM	OUT OF THE EDIT	DELIVERED
Timecode	Read 00:59:56:12 — the drop-frame flag missing	01:00:00;00, drop frame
Colour signalling	Matrix and primaries labelled "unknown"	BT.709 matrix, primaries and transfer
Loudness	-16.1 LUFS — 7.9 LU too loud	-24.0 LKFS integrated
True peak	+2.4 dBFS — clipping, against a -2 limit	-9.6 dBTP
Video levels	4,264 frames with over 1% of pixels out of range; white flashes rendered above legal white	Worst frame 0.27% out of range; none above 0.3%
First and last frame	A bright picture and the NETA tag — neither black	One frame of black at each end
Captions	None	647 English captions, validated, signed statement
TV-G rating icon	None	Upper left, where NETA asked for it
Format and codec	XDCAM HD422 50 Mbps, 1080i29.97 upper field first	Unchanged — already right
RGB gamut	Median 0.05% of pixels outside 0–700 mV	Unchanged — inside tolerance, no re-grade

"Out of the edit" is the programme as it was exported from Premiere, before any delivery work. Every figure on both sides was measured on the files themselves.

FOUR THINGS TO CHECK BEFORE A NETA DELIVERY

- 1. Which document governs.** NETA's 2025 File Submission Requirements; the PBS TOS only where NETA is silent.
- 2. The audio layout.** Stereo without described video or SAP goes as two channels. Eight channels only when DVI or SAP is present — on channels 7 and 8.
- 3. The caption file.** A sidecar .scc must carry exactly the video's file name and start on the same timecode, or the captions drift out of sync.
- 4. Your own scopes.** Premiere's waveform has a *Clamp Signal* box. Ticked, it makes illegal levels look legal. NETA says to leave it unticked.

Points 2 to 4 come straight from NETA's own 2025 File Submission Requirements; point 1 is how the technical report reads them.