Studio Holder

NLE Roundtrip & Delivery Guidelines for Digital Cinema & High-End TV (OS: macOS Catalina Ver 10.15.7)

Last Updated: Thursday 12th November 2020

USEFUL LINKS & RESOURCES:

Studio Holder - Project Workflow for Film & HETV

Studio Holder - Post Production File Structure V2.2

Studio Holder - Avid MC Fiction/Doc Bin Container Layout

Studio Holder - Avid MC Fiction/Doc Track Layout/Allocation Convention

Studio Holder - UHD/HD Blu-Ray & DVD Authoring Convention

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Offline Edit ➜ Sound Edit/Design/Mix	Avid Media Composer ➜ ProTools		
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Software Packages & Version Information							
DIT / MCR ➜	**Offline Edit** ➜	**Grade** ➜	**VFX** ➜	**Sound** ➜	**Deliver** ➜	**DCP Deliver** ➜	**Upload** ➜
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	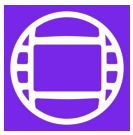						
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Frame.io	Client Review or Delivery		

Delivery - Resolutions & Aspect Ratios			
	4K	**2K**	**HD**
DCI "Cinema-Standard" Formats			
Full Container	4096 x 2160 **(1.90:1)**	2048 x 1080 **(1.90:1)**	
Flat	3996 x 2160 **(1.85:1)**	1998 x 1080 **(1.85:1)**	
Scope	4096 x 1716 **(2.39:1)**	2048 x 858 **(2.39:1)**	
Prosumer Formats			
16:9 Formats	3840 x 2160 **(16:9)** (1.77:1)	2048 X 1152 **(16:9)** (1.77:1)	1920 x 1080 **(16:9)** (1.77:1)
4:3 Formats	4096 X 3072 **(4:3)** (1.33:1)	2048 x 1536 **(4:3)** (1.33:1)	1920 x 1440 **(4:3)** (1.33:1)
Other Formats	4096 X 2458 **(5:3)** (1.66:1)	2048 x 1229 **(5:3)** (1.66:1)	1920 x 1152 **(5:3)** (1.66:1)

ROUNDTRIP PROCESSES

Camera/Set ➜ DIT / MCR

Digital Cinema Camera ➜ HEDGE ➜ Project Hard Drive/Storage

It is recommended you read a guide to keeping cards and rushes safe before proceeding with reading and undertaking this step. There are important principles to take heed of which can vary depending on the project's delivery requirements and the materials recorded/gathered at the very start of post-production. It is essential you know how to handle different file formats/types and the steps involved.

HEDGE is an industry-standard backup, copying and archival application which simplifies these essential processes and mitigating data errors where possible. You can select your source (which may a camera's memory card, hard drive or other connected source) and your destination (or multiple destinations) (which may be your project's hard drive, media server or other connected destination). Each completed transfer automatically generates a Transfer Log Sheet which is a

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	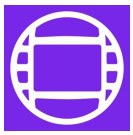						
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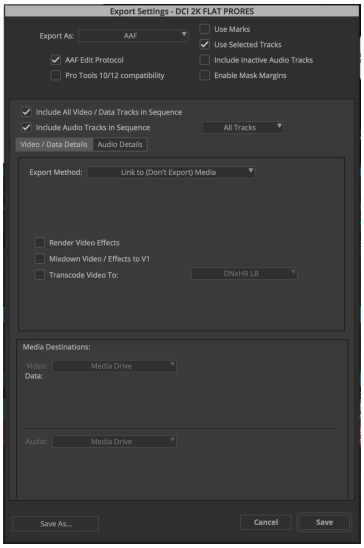
permanent text-based record verifying the transfer process which may also be useful as proof of work as a DIT or upon ingesting/delivering files.

There is also an accompanying mobile app which synchronises the progress made on your desktop and is especially useful if you are multi-roleing on-set or are required to be elsewhere or otherwise occupied, so you can be kept updated when transfers are complete and also their current progress.

HEDGE is a paid software which can be downloaded here.

Offline Edit ➜ Grade

Avid Media Composer ➜ DaVinci Resolve

	• Duplicate the Sequence, and click the NEW sequence
	• Highlight All Tracks (MARK IN at first frame, MARK OUT at last frame)
	• Right Click on (PICTURE-LOCKED) SEQUENCE
	• Click 'Export'
	• In 'Export As', choose AAF
	  ○ TICK: Use Marks, Use Enabled Tracks and AAF Edit Protocol
	  ○ TICK: Include All Video / Data Tracks in Sequence, Include Audio Tracks in Sequence
	  ○ Export Method: Link to (Don't Export) Media.
	• SAVE
		

	• Open DaVinci Resolve 17
	• Create New Project
	• File > Import Timeline > Import AAF, EDL, XML…
	• Locate the saved .AAF File
	• In the 'Load AAF…' window. Ensure the following is checked:
	  ○ Set Timeline Name
	  ○ Set Master Start Timeline
	  ○ Ensure Settings are Correct (Project Settings,	

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	Ingesting Source Clips into Media Pool) ○ Set Timeline Resolution • Click OK. • Wait for DaVinci to load .AAF (*Resolve is currently scanning media storage/hard drive for the original media and preparing the sequence for grading automatically*).	

Offline Edit ➜ Sound Edit/Design/Mix

Avid Media Composer ➜ ProTools

Typical Requirements from Sound Designer/Re-Recording Mixer: A VIEWING Deliverable + AAF (with Embedded Media) + 'X' amount of handles

Step 1: Exporting an AAF
Step 2: Delivery of AAF & Associated Files to Sound Mixer
Step 3: Reimporting Mix & Output

	Exporting an AAF • With your sequence setup and pre-mixed, turn on all tracks in the sequence. From the file menu, choose EXPORT… • In 'Export Setting', change the Preset to CONSOLIDATE AUDIO TO FOLDER • Click 'Options' • In 'Export As…' – change to AAF. • TICK: Use Enabled Tracks • TICK: AAF Edit Protocol • TICK: Include All Audio Tracks • On the Audio Tracks tab, set Export Method to CONSOLIDATE MEDIA but change handles to something between 120-180 frames to give sound mixer handles to work with.	

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	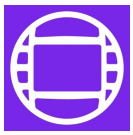						
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	• TICK: Include Rendered Audio Effects and Render All Audio Effects
	• UNTICK: Remove Track Effects
	• Change the Convert Audio Format to AIFF.
	• In the Media Destination section, switch the audio option to be EMBEDDED IN AAF.
	• Double-check all settings and then choose SAVE.
	Delivery of AAF (and Associated Files) to Sound Mixer
	• Check Prior Correspondence from Sound Designer / Re-Recording Mixer about any specific/unique delivery specifications
	• Create a Folder on the Project's Hard Drive called 'PROJECT_TITLE_FILES_FOR_PROTOOLS' and include:
	  ○ X1 Viewing Deliverable
	  ○ AAF (with Embedded Media)
	• Create Google Drive Folder entitled the same as above: 'PROJECT_TITLE_FILES_FOR_PROTOOLS' and include:
	  ○ X1 Viewing Deliverable (as above)
	  ○ AAF (with Embedded Media) (as above)
	• Share GDrive Folder with the Email Address of the Sound Designer / Re-Recording Mixer.
	• They should be able to open the Project in ProTools and begin mixing.
	Re-Importing Mix & Output
	• **Final Mix should be received as a .WAV bounced file**. Where possible,	

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	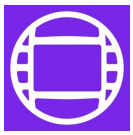						
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	request from the sound mixer the individual STEMs and ProTools Session File to re-access later on (for further editing and/or archival) later on. These will be subsequent WAVs / Project Files. Enquire within. • Import the sound and ensure the AVID track matches the output of the mix. (i.e if the mix is 5.1, set the new sequence to 5.1 – do NOT use the existing avid sequence). • Output Project – see above for MASTER and VIEWING methods.	
	•	

Grade ➜ VFX
DaVinci Resolve ➜ NUKE

Grade ➜ Sound Edit/Design/Mix
DaVinci Resolve ➜ ProTools

Grade ➜ Offline Edit

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	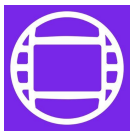						
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DaVinci Resolve ➜ Avid Media Composer

	• Ensure ALL Colour Grading is complete. • Click the 'DELIVER' tab (the launching rocket) • Choose the Avid AAF Preset. • Click Browse and select a well-named location for Rendered Files. (i.e – AAF Export from DaVinci). • Make sure Individual Clips is selected. This will render out individual MXF Files for each shot in your sequence. • Select 'MXF OP-Atom as the File Format'. • For Codec, select 'DNxHR'… (ensure resolution, colour space etc all matches to original source media). • Tick 'Render at Source Resolution' or select the Final Delivery Resolution the project intends to be. • Click 'Add to Render Queue' and Launch. • Await for Render to be complete, it'll be in destination folder – this will contain the new MXF media files for Avid and an included AAF file as well.	
	• Now, for Avid Media Composer – these are the steps that are necessary to conform the GRADED project back into the film's project. • Copy MXFs • Copy new MXF files that DaVinci Resolve created into a new numbered folder inside your 'Avid MediaFiles' folder. Go to your hard drive >> Avid MediaFiles >> MXF and create a new numbered folder. • Open Avid Media Composer (once STEP A is complete) • Create a new bin titled "DaVinci to AVID".	

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	• Right-click on bin, select Input > Import Media • Navigate to new numbered folder in Avid MediaFiles folder and select precisely the **msmMMOB.mdb** file. • Import AAF • Input > Import Media • Navigate to same folder where Resolve saved the Renders and select the included AAF file. Click OK. You should see a new sequence icon show up in the bin. • This is your sequence from DaVinci Resolve with the new colour correction changes.	

Sound Edit/Design/Mix ➜ Offline Edit
ProTools ➜ Avid Media Composer

VFX ➜ Online Edit
Nuke ➜ Avid Media Composer

Exporting a MASTER Deliverable

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	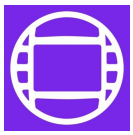						
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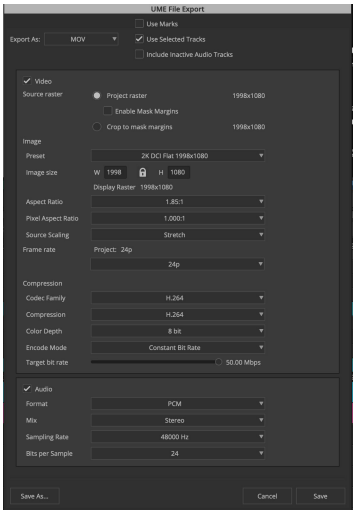
- In the desired sequence, select ALL Tracks (Cmd+A)
- Right-click on the 'Record' window of the film/programme itself
- A dialogue box will appear prompting selection of a save location - Select 'Options'
- In Export Options (now known as UME File Export) ensure the following are selected:
    a. Export As: **MOV**
    b. Use Selected Tracks
    c. VIDEO
    d. Source Raster - **Project Raster**
    e. Image Preset - **keep same as sequence** (unless otherwise required). This preset refers to Resolution & Aspect Ratio.
    f. Aspect Ratio; **keep same as sequence** (unless otherwise required).
    g. Pixel Aspect Ratio; **keep unchanged**.
    h. Source Scaling; **keep unchanged**.
    i. Frame Rate; **keep same as sequence** (unless otherwise required).
    j. Codec Family: **Apple ProRes**
    k. Compression: **Apple ProRes 422 HQ**
    l. AUDIO
    m. Format: **PCM**
    n. Mix: **Stereo** (unless otherwise required)
    o. Sampling Rate: **48000 Hz**
    p. Bits per Sample: **24**
- **Click Save. The export will begin.**

MASTER Deliverable Settings

VIEWING/REFERENCE Deliverable Settings



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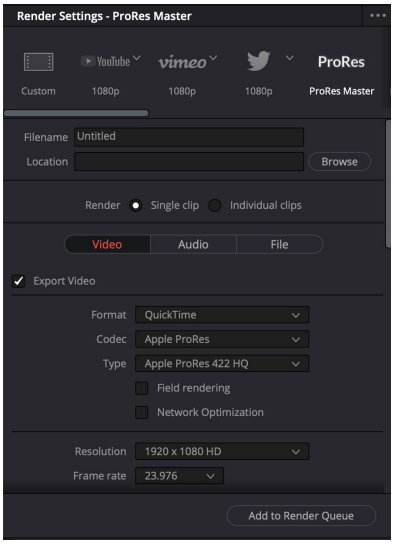
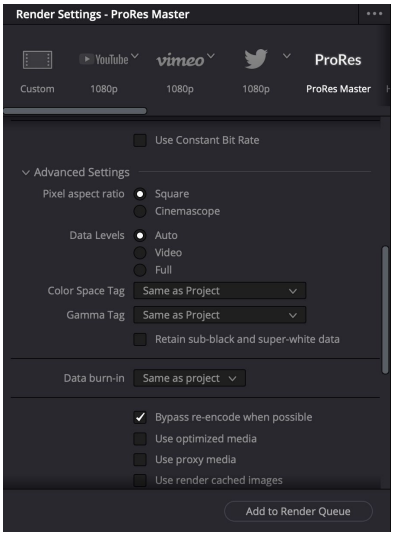
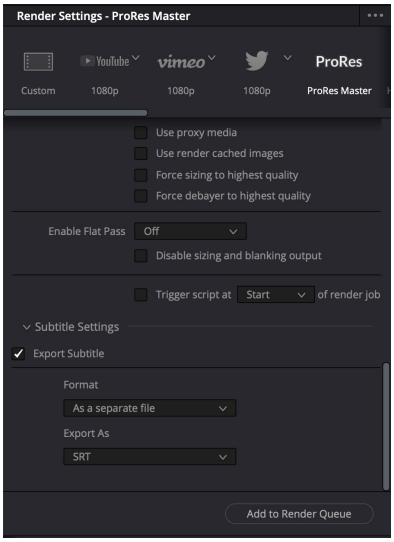
- In the desired sequence, go to the **DELIVER Tab** indicated by a rocket-ship icon at the bottom.
- In Render Settings - **select ProRes Master** and check/change the following as appropriate to the project's delivery requirements:
    a. Filename: **Change to Project**
    b. Location: **Browse and Select a Save Location**
    c. Render: **Single Clip**
    d. Export Video: **TICKED**
    e. Format: **QuickTime**
    f. Codec: **Apple ProRes**
    g. Type: **Apple ProRes 422 HQ** or **4444**
    h. Leave Field Rendering and Network Optimization **UNTICKED**
    i. Resolution: **Set to Desired Resolution**
    j. Frame Rate: **Set to Desired Frame Rate** (keep to same frame rate as original media to avoid jumping effects!)
    k. Leave Other Settings Unchanged







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Authoring a DCP from a MASTER Deliverable using *DCP-O-Matic 2*

Things You need to know:

- Cinema Projectors can only ingest and play a certain type of file: a DCP (Digital Cinema Package)
- Cinema Projectors can only recognise certain hard-drive formats: Extended Filesystem (i.e EXT-2)
- DCPs cannot be played or tested using conventional 'media players' like QuickTime or VLC and require specialist applications and hardware. For best results, DCPs should always be tested in an actual cinema.
- Most film festivals require filmmakers to have a DCP deliverable.

How to make a DCP:

- **Step 1: Have Your File Ready**
  - Very simply, you will need to use your master file to make the DCP, which will always output at 2K minimum. Don't worry if your file isn't in 2K Resolution, if your file is in HD, you should create a 2K DCP. Any text/subtitles should be burned in and you should have the relevant sound levels required. Make sure there is no more than 3 secs black at start/end.
  - Ideally your master file should be a QuickTime Apple ProRes File, as it is more than likely you will also be required to submit this type of file as well for festival consideration.
- **Step 2: Open DCP-O-Matic**
  - DCP-O-Matic is a free open-source application that you can download from the internet here.
  - Create a new file, name it, and make sure you know where it's saving.

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	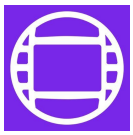						
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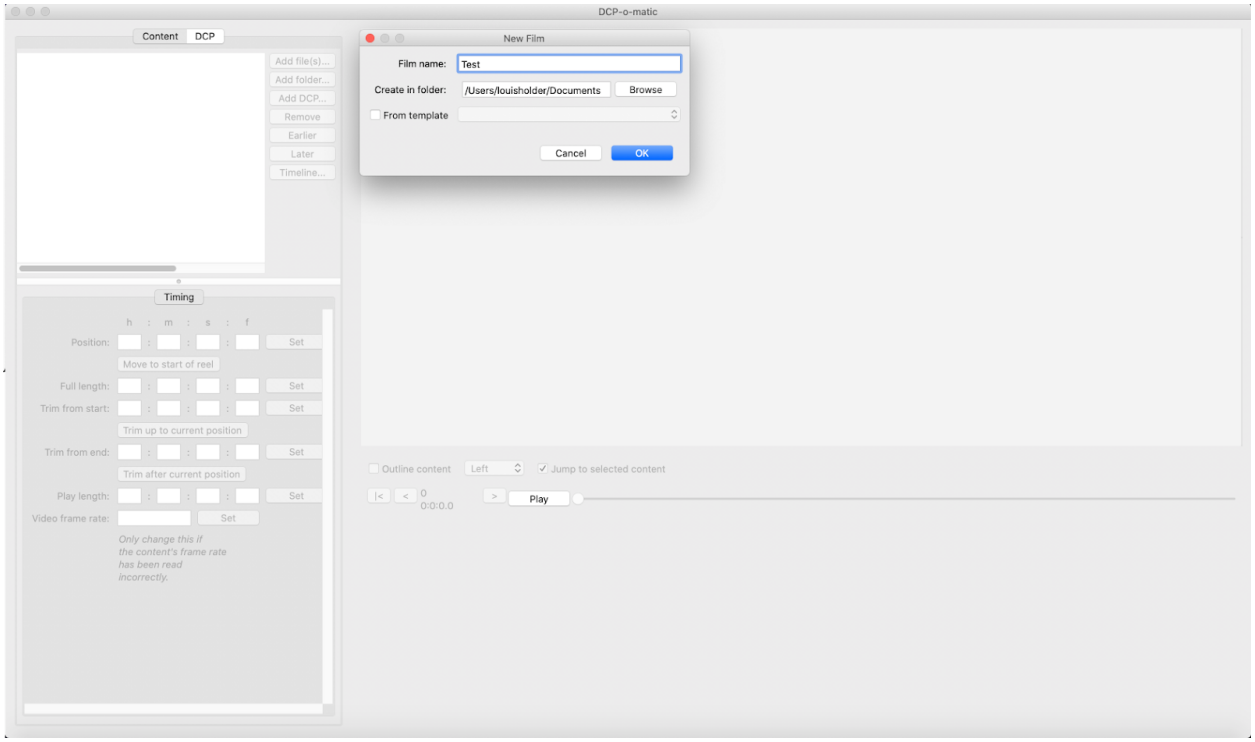

- **Step 3: Add Your File**
  - Click Add File and choose your Master File.
  - The programme will then check the file automatically and you will be able to see a preview in the window.

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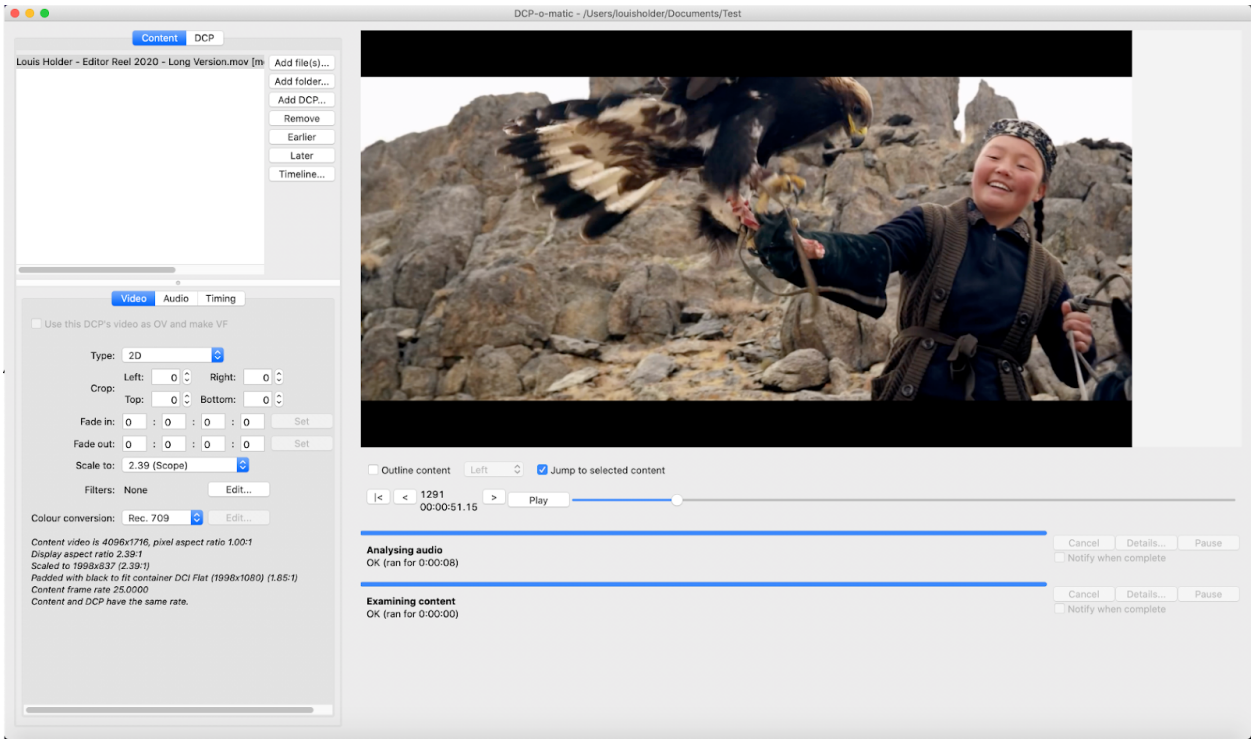

- **Step 4: Set Your Content**
  - These are really important - as you can't check the file, you need to be very sure before you create the DCP, that all of the settings are set correctly.
  - When setting the content, ensure the preview pane has someone's face in it so you can look out for stretching errors.
  - Settings:
    - Type: 2D (Leave Unchanged)
    - Scale To: Set your Aspect Ratio (Only change if necessary)
    - Colour Conversion: Rec. 709 (Leave Unchanged)
  - Beware: Files that are 16:9 should be using 16:9 on both tabs as their setting, and the same goes for 1.85.1 etc. I'd only suggest using Full Frame if your film is cropped/masked so the container is actually different to the picture you see. If this is the case you can try different settings (changes viewable in the preview window) until it looks correct.

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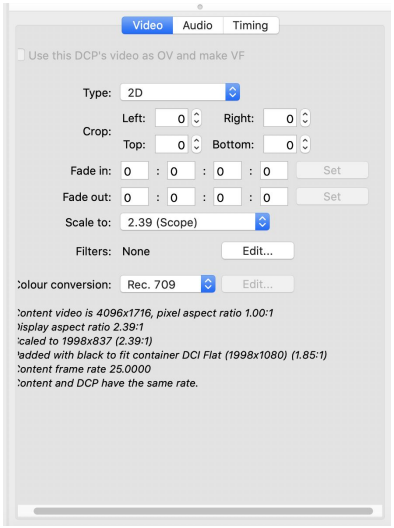
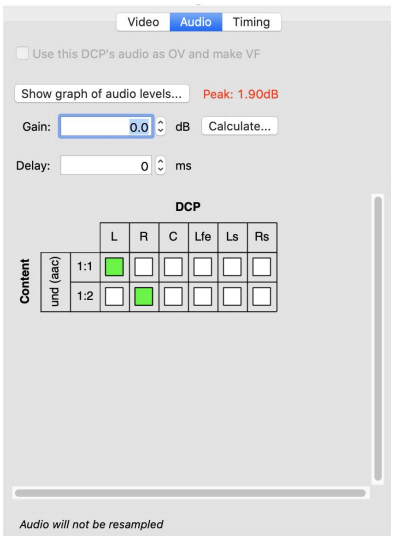
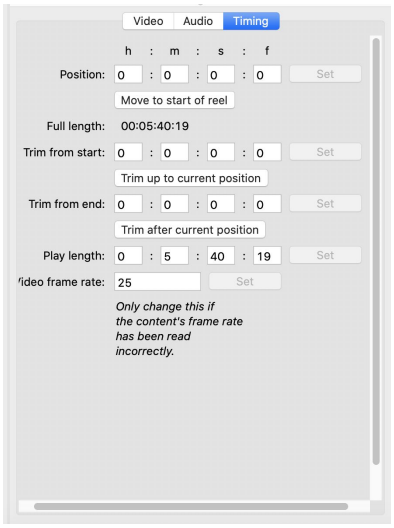
Hedge	Avid Media Composer	DaVinci Resolve	NUKE	ProTools	DaVinci Resolve	DCP-O-Matic 2	Frame.io
Ver: 20.3.1	Ver: 2020.10	Ver: 17.0.0	Ver: N/A	Ver: 10.5.1	Ver: 17.0.0	Ver: 2.14.38	Ver: 2.5.2

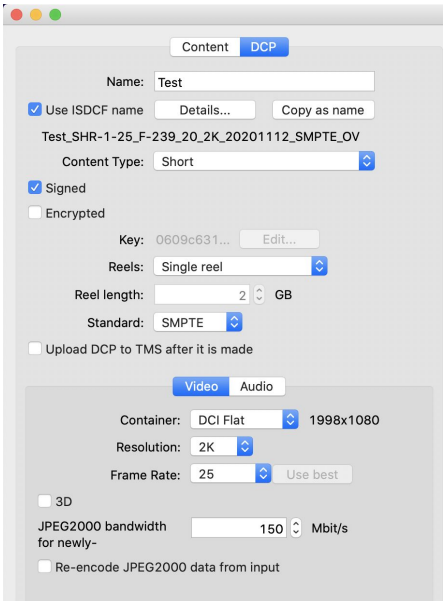






(Switch to DCP Tab above these settings)

- Rename DCP to film name etc
- Next to 'Use ISDCF name' click Details and change details where appropriate.
- Content Type: Change as Appropriate (i.e Short)
- Leave Everything Else Unchanged
- The 'SMPTE' (ISDCF) name box should always be TICKED too.
- Unless specifically requested by a festival, NEVER tick the 'Encrypt' box - this can prevent cinemas from ingesting the DCP.
- The 'signed' box will not visually affect your DCP, however I would always UNTICK this as it prevents the DCP from being manipulated by whoever is receiving it.
- Video Container/Resolution/Frame Rate should match (or be changed to match) the source file.



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- **Step 5: Jobs > Make DCP**
    - Click 'Jobs' in the taskbar at the top > Make DCP
    - A 'Hints' dialog box may appear showing you some potential issues that may arise in the DCP you are about to launch. Check again your aspect ratio settings; frame rate settings and audio levels and, if satisfied, click 'Make DCP'.
    - When finished it will say "OK - Ran for (time taken)"

Authoring a BLU-RAY DISC from a MASTER Deliverable using *Compressor*

For Full Information on how to author a Blu-Ray Disc (or DVD) from a MASTER Deliverable using *Compressor*. Click Here.

Uploading a MASTER or REFERENCE/VIEWING Deliverable to *Frame.io*

Frame.io is increasingly becoming an industry standard all-in-one cloud-based media management, project reviewal and active/archival storage space which works via a web-based app from a browser. It can also be installed on your computer and even integrated as a native 'plug-in' which lives within your commonly used editing applications such as *Final Cut Pro X, Premiere Pro, After Effects, DaVinci Resolve* and *Avid Media Composer*. It is a paid software which you can download by clicking here.

Find out more about uploading to your Frame.io account here.
Find out more about Creative App Integrations here (so you can directly deliver to *Frame.io* inside the editing application itself).

Software Packages & Version Information							
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