

# KLIKxHAFF 2019

## DIY DCP manual

You can create DCPs with multiple software packages these days. For instance, with: Easy-DCP Creator ([www.easydcp.com](http://www.easydcp.com)) or DCP-o-Matic ([www.dcpomatic.com](http://www.dcpomatic.com)), which works with Windows, Mac and Linux.

Viewing your created DCPs is also possible with EasyDCP player or see the DCP-o-Matic player which you can download [here](#).

Below, you can find a guide for creating a DCP with DCP-o-Matic. This is a totally free programme without advertisements, but feel free to donate some money to the developer [here](#)! DCP-o-Matic has a more comprehensive manual on [their website](#).

DCP-o-Matic consists out of multiple modules you can install separately, for example:

**DCP-o-Matic** – The main software (the minimum you need to install)

**Player** – To view your DCP (you need a very powerful computer for this)

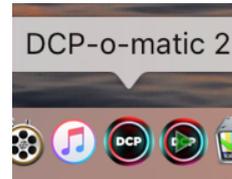
**Encode Server** – To distribute encoding over several computers

**Batch Converter** – To encode multiple DCPs in a row.

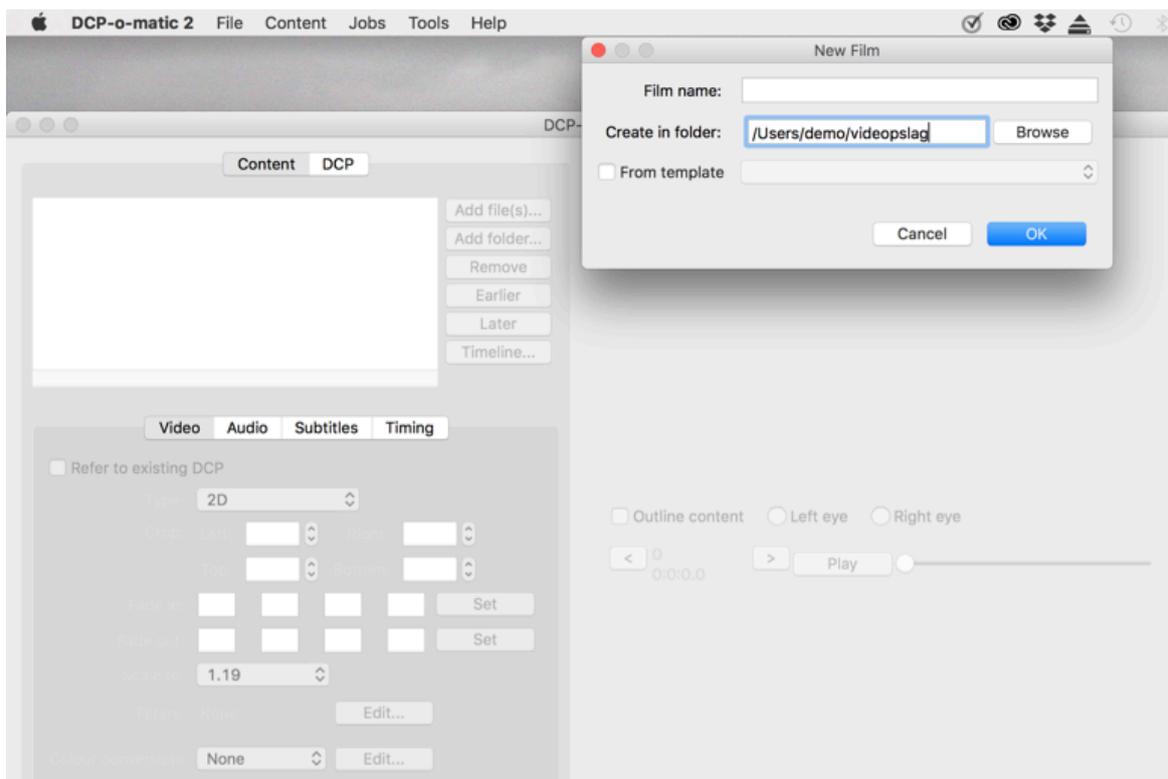
### Starting a project

After installation, start DCP-o-Matic.

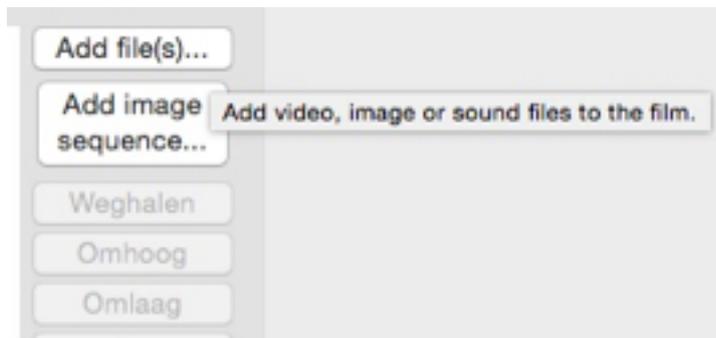
After startup, you will find that the “Add files” button is still grey. You will have to create a new project first to continue.



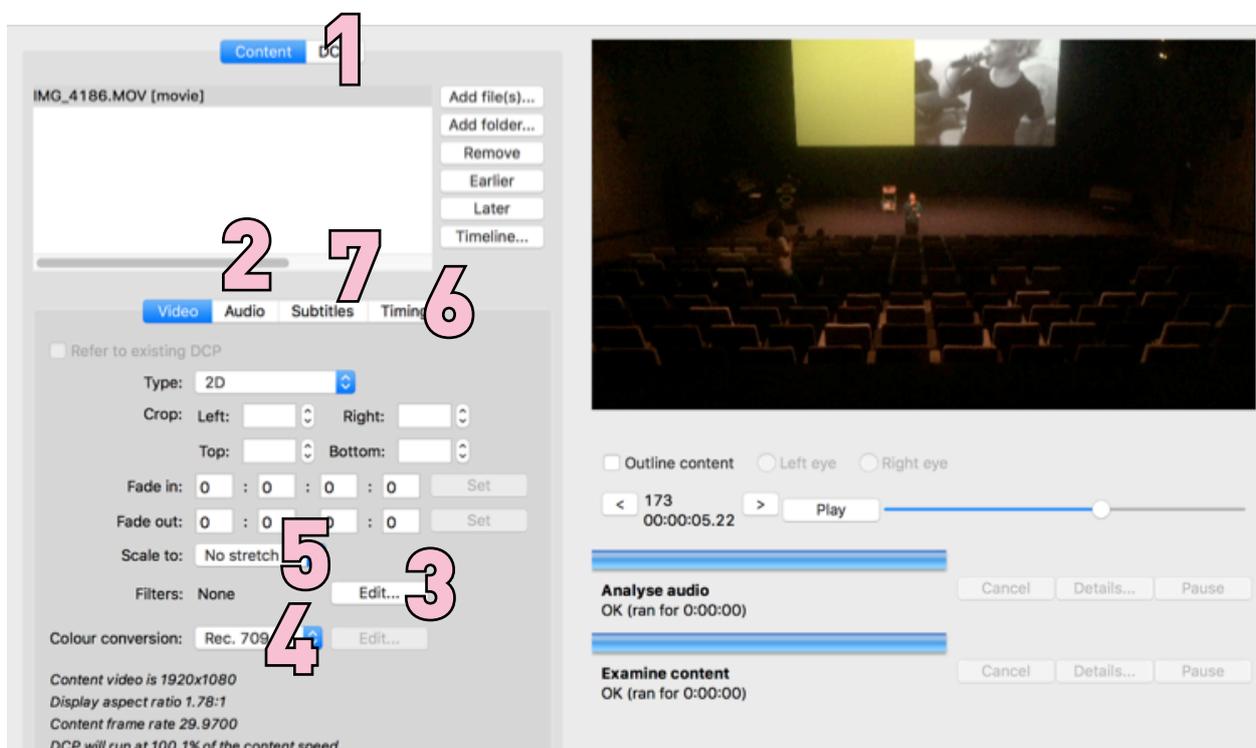
- Click File > New. A dialogue screen will open.
- Enter the title of your project and press “Browse” to select the destination folder.



Once the project is created, click on "Add files" and add your film file. Preferably add a high-quality master movie file like a ProRes422HQ, DNxHR or better, the better your final film will look like.



After adding the film, your interface will look something like this (depending on the version you are using).



## 1. DCP-settings in the DCP-tab

Select the DCP-tab. You will see all properties. In the "name" field, enter the title of your film. The number of characters is limited. Under the "ISDCF-name" check box you will see the final name of your DCP.

Under "Content type" select the type of film. (most likely "Short")

Select "Use ISDCF name" to create an official DCP-name. Click on "Details" to add additional information. Enter your initials at "Studio" and/or your company name at "Facility". Also add your film's language / subtitling-language. This makes it easier for us to understand the properties of your film. Enter as much information as possible. When in doubt, leave a field empty. For more examples see:

<http://digitalcinemanamingconvention.com>

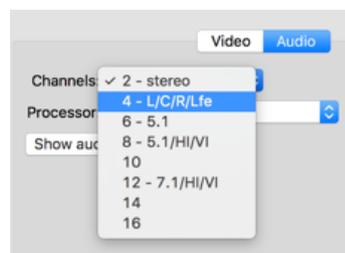
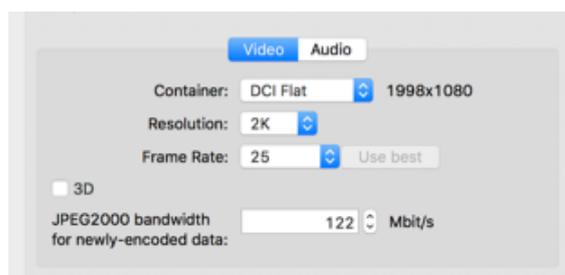
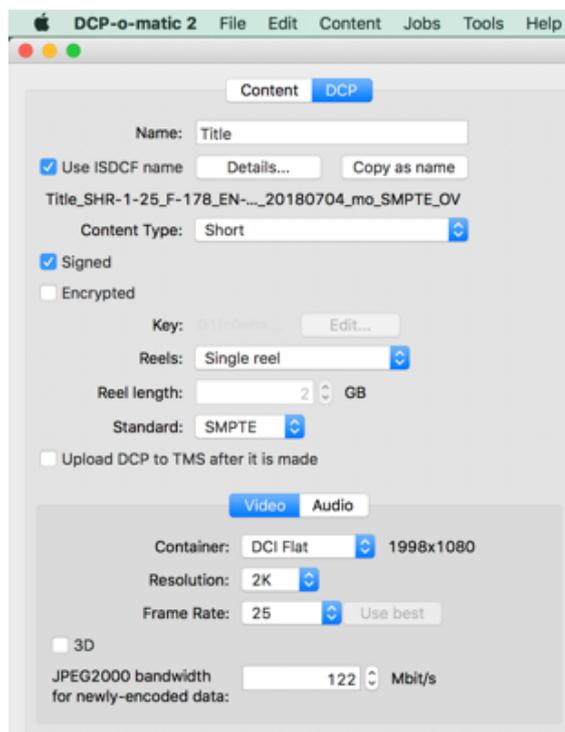
Click on "ok" to confirm and continue.

Below you see the framerate, which will be auto-detected depending on your movie file, so don't touch it.

Under "Container" select the aspect of the film (FLAT=normal SCOPE=Super-wide). For other aspects like 16:9 or 4:3, choose FLAT. The framerate

Under "JPEG2000 bandwidth" select something that's not too high and not too low, 184Mbit is roughly comparable to ProRes422HQ quality.

Now go to the Audio tab and under "Audio" select the number of audio channels for your film, usually 2 (stereo) or 6 (5.1 surround).



## 2. Audio

Go back to main "Content" tab again. And then click on the tab "Audio".

Now you can see how many audio channels there are in your audio stream. Depending on your film this is for instance, 2, 6 (5.1) or 8 (7.1) audio-channels.

When there are 2 channels, check if L and R are selected in green under DCP. (see image)

In the example the audio of channel 1 will go to the left and the audio of channel 2 will go to the right side.

The same applies with surround sound:

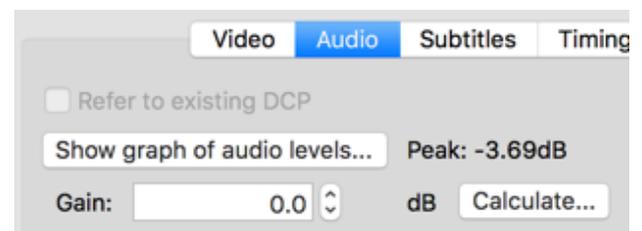


If you have 5.1 (6ch) audio or even more, you will want to create a 5.1 or 7.1 DCP. In this case, make sure to select 6 or 8 channels in step 1. Otherwise you can't assign all channels like in the picture on the right. Make sure all 6 or 8 channels are marked green, so each audio track goes to the corresponding speaker.

We won't get into "mastering audio for cinema here" but we can make a start by making sure your film is not too loud. Click "Calculate", wait and when it's finished click "Show graph of audio levels". The audio of the film will now be analyzed. This graph is also very useful to see if all audio channels are correct and how the sound levels out across the whole film. Just play with it.

In case you see any red db's under "Peak", it means the film is very loud. So, lower the volume of the film with "Gain" until peak shows  
 - 3.00 dB. Even better is to master your film  
 - 6.00dB or  
 - 9.00dB to be very safe.

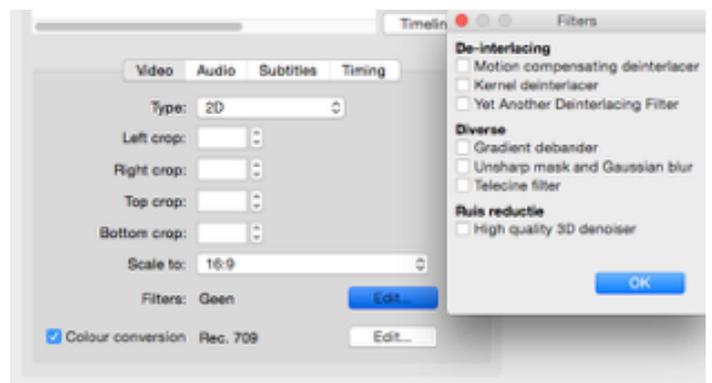
If you see a very low value coming out the analysis like -20.00dB your film is probably very quiet or mixed at a very low audio level.



Peak: -0.19dB

### 3. The filters menu (Content, video tab)

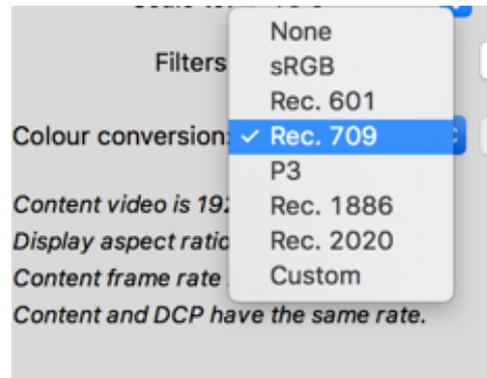
DCP-o-Matic gives you the possibility to add several filters. For instance, 'de-interlacing' to de-interlace interlaced footage. Only use filters when you need them.



#### 4. The colour space menu

DCP-o-Matic automatically detects in which colorspace your film is when you add the files.

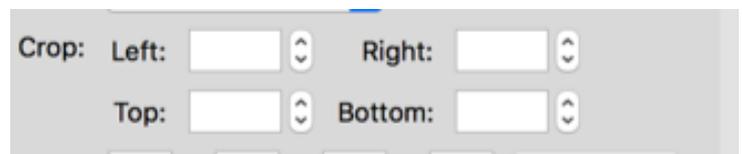
Commonly, at the time of writing, this is REC709 for video. In case you know for sure that it's not stated correctly in DCP-o-matic, you can adjust it here.



#### 5. Scaling and cropping

'What you see is what you get' goes here.

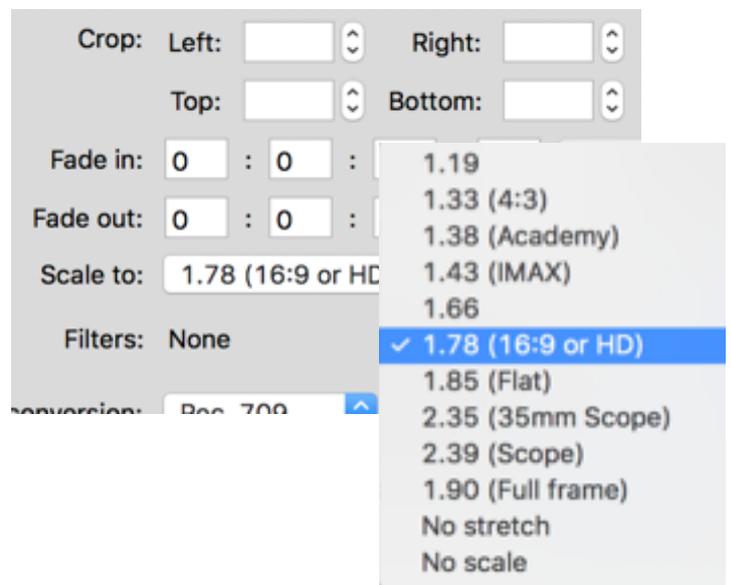
Crop first, then scale. Cropping is the removing of unwanted parts of an image such as black bars from a letterboxed film. Once cropped to the desired image, you can scale the video to the right format. Mostly you don't need to crop. It's normal to have a few lines of black around a video, especially in footage from older camera's. Then it's better to not crop them away.



If you followed this manual correctly, you already selected a FLAT or SCOPE aspect ratio (or container size) in step 1. Check if your film looks okay now in the preview windows top right.

DCP-o-Matic will autodetect the scale of your movie! In most cases you're okay!

If you have a 16.9 (1.78 aspect) video in a FLAT DCP container, you will see black bars left and right near the video. This is correct. Because standard Flat DCPs for cinema have slightly wider (1.85 aspect) than normal full HD (1920x1080) video. **It does not matter if this happens. You will not see the black bars in the final screening! It's okay!**



Extra info: official cinema video formats are:

2K Flat: 1998x1080 pixels

2K Scope: 2048x858 pixels

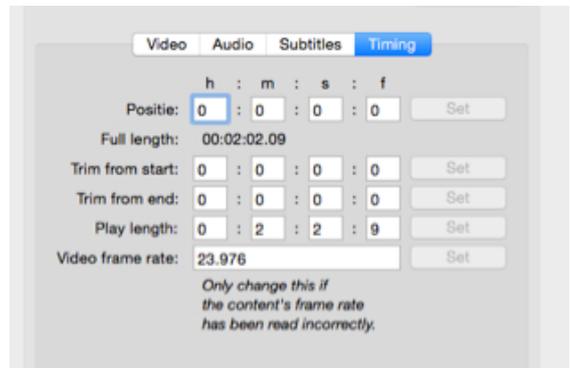
4K Flat: 3996x2160 pixels

4K Scope: 4096x1716 pixels

"No stretch" or other settings are often used in case you need or want to (counter)correct something. Here goes the 'What you see is what you get' rule. Probably you won't need this.

## 6. Timing

You can create a clean cut with this option. Like removing unwanted Bars&Tone or Slates. If you leave them in, they will be screened in the cinema since we cannot remove them anymore when the DCP is finished.



## 7. Subtitles

If you did not already burn subtitles in your master movie, you can add a separate subtitle file here.

In the main window (content tab) you can add a subtitle file just like you added your movie before. After that you can select that file and edit its properties in the subtitles tab.

For more information about subtitling see: <https://dcpomatic.com/help>

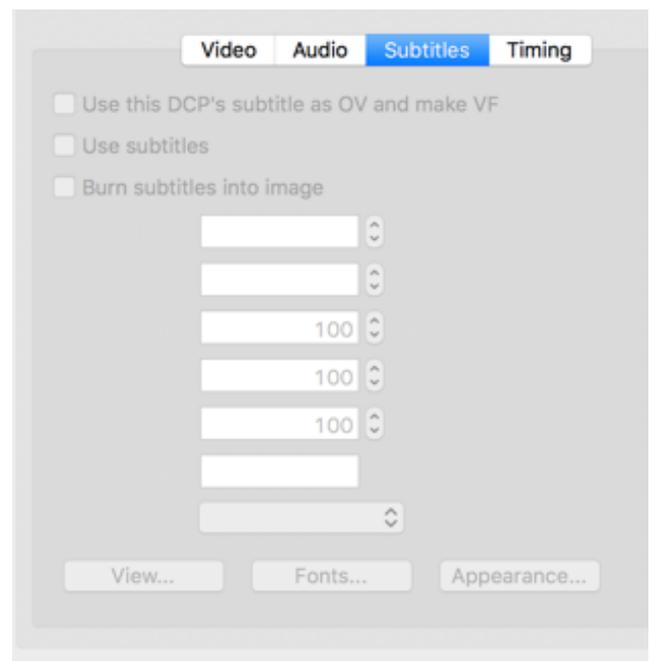
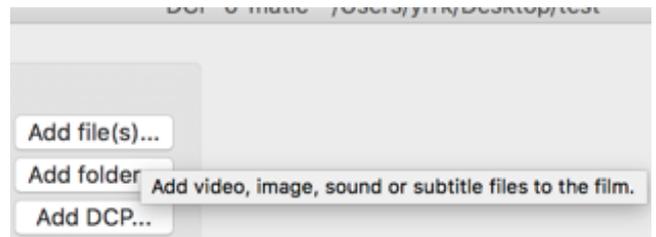
Creating subtitles goes beyond the scope of this manual but there are multiple ways to create subtitles. And again, you can also burn them in your film before, without using DCP-O-Matic See for example:

<http://www.jubler.org>

<https://www.belle-nuit.com/belle-nuit-subtitler>

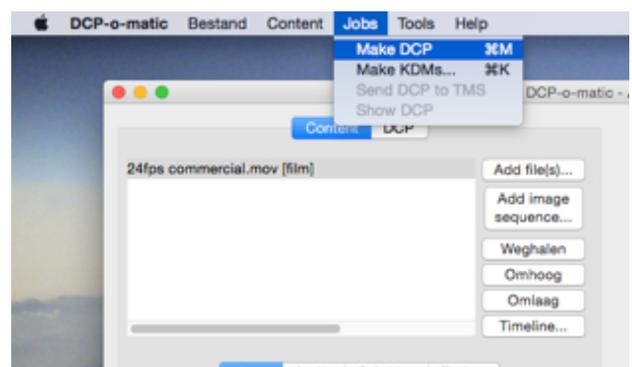
<http://www.nikse.dk/subtitleedit/>

Make sure the subtitles are not too far below the film safety margins or they might fall off the screen. Subtitles also shouldn't be in the black-bar/letterboxed area of the screen.



## To finish:

Make sure you save the project. And then choose "Jobs" under the menu to "Make DCP", to render the DCP. Depending on the speed of your computer, rendering can take some time.



Once the DCP is ready you can find it in the destination folder you selected earlier. There are multiple project files in there, but you can recognize the right DCP folder by the DCP title, which looks something like this: Titletest\_SHR-1\_178-119\_2K\_FST-VLL\_20171204\_IKKE\_SMPTE\_OV

**Only take this folder from your project** and send this entire folder to the film festival. Keep the files in it and naming as it is. Don't rename the DCP folder! You may zip the folder if desired.

When uploading on services like GoogleDrive please zip everything definitely, otherwise we'll have trouble downloading the DCP.

When sending by postal use USB, SD-Card, harddisk or optical disc. Be aware cheap optical discs and high burning speeds tend to be a risk of failure once ingesting it in the cinema. So please use a high-quality transport medium like a Verbatim data-DVD or data-Blu-ray, and a low burning speed with data check. Data-Blu-Ray's (not video blu-rays!!!) are cheap and offer 50-100GB of space! Another option is to send us a hard disk, but please make sure it's very well packed - package drops will cause hard disks to break, so USB is better. Also make sure it has a USB or sATA connection.

