

# MPEG Telecine

## A Not So Simple DVD SP Helper

**MPEG** Telecine is a simple drop-on application that will take one or more MPEG-2 files and set three flags in each frame of the video so that it is interpreted as 23.976 fps progressive video and fields will be repeated to mimic the 3:2 pulldown pattern used with NTSC video to present film based material.

This approach has several advantages over encoding film material that has already been subjected to the 3:2 pulldown process. The telecine process introduces duplicate fields that increase the apparent frame rate from 24 fps to 30 fps, but the duplicate fields have no new information. Yet when you encode those extra fields as if you were working with fully interlaced video, a considerable amount of bandwidth is wasted encoding those fields, particularly with fixed bit rate encoders like the one supplied with DVD Studio Pro.

When you encode without the extra fields, you can encode longer programs or encode the same program with a higher bit rate and quality. When the appropriate in-player telecine flags are set, standard interlaced DVD players will insert duplicate fields at the same interval as the mechanical telecine produced, but without wasted bandwidth. This works with all DVD players because it is the same method used to produce Hollywood films on DVD.

In addition, computers and high-end progressive mode players can take advantage of the progressive nature of the original film frames to produce higher quality output with much less processing in the player.

The result is video that looks better on traditional interlaced DVD players, progressive DVD players and computer based DVD players.

There are two downsides to using this technique:

1. True progressive video can be hard to come by. The extra fields are inserted as a matter of course

### Quick Start:

Choose the first file to convert, for example "MudPie.m2v"

If you want to append additional files, rename each of those additional files the same as the first with a numeric suffix, like "MudPie.m2v.1" and put them in a folder with the first.

So a Finder list will contain:

MudPie.m2v, MudPie.m2v.1, MudPie.m2v.2, MudPie.m2v.3 etc.

Drag MudPie.m2v onto the MPEG Telecine application.

Specify a file name and location. Click Save.

When it is done, you will have one large file with the in-player telecine flags set and continuous timecode.

in the standard NTSC telecine process. Progressive video cameras have been very rare and expensive until recently.

2. Many encoders are not particularly cooperative in producing progressive output MPEG video and setting the correct flags.

MPEG Telecine deals with the last part of the second problem. Given an MPEG video stream encoded from progressive source material, it will adjust the flags in the MPEG stream so that it will be recognized by NTSC players as progressive frame based and the player will be instructed to repeat fields appropriately to keep the timing correct.

If you supply it with true interlaced MPEG video material, it will perform the same actions, but the resulting file will not be usable

**For a detailed description of the options and general behavior of this and other applications based on MPEG Append, see the MPEG Append documentation.**

(motion will be slow and will not synchronize with the audio, fields will be mixed up and ugly).

MPEG Telecine, like other MPEG Append tools, transfers markers originating in Final Cut Pro and encoded with compatible encoders then adds new markers at the junction of files. These markers will appear, pre-placed, when you use the asset in DVD Studio Pro.

You can choose to have the output file use Non-drop Frame timecode, or whatever timecode the first file uses using the pop-up at the bottom of the 'Save As' dialog.

For almost all cases, the default Drop Frame timecode is preferred because it avoids a persistent bug in DVD Studio Pro which causes audio synchronization problems during preview.

However, if you are using subtitles with markers in your authoring you may encounter another DVD Studio Pro bug which causes it to generate errors indicating that the subtitles cross a marker point when Drop Frame timecode is used. You can avoid this problem by using Non-drop Frame timecode (but your audio may seem to be out of sync).

MPEG Telecine is based on MPEG Append, another DVD SP Helper. For detailed information refer to the MPEG Append documentation.

## Acquiring Progressive Video

Earlier it was mentioned that progressive video is hard to come by. This is because the consumer accessible products have yet to catch up fully with digital technology.

If you are preparing a DVD from film source, the video will usually be delivered to you in telecined form with 3:2 pull down (duplicate fields). You can use a process called inverse telecine to remove the duplicate fields and convert the 29.97 fps telecined (but interlaced) video into 23.976 fps progressive video.

Then with an appropriate encoder, you can encode that footage to MPEG 2 and post-process it with MPEG Telecine to make it suitable for use as an asset in DVD Studio Pro.

A new alternative is to use a PAL progressive video camera to produce 25 fps progressive video. Then slow it down slightly to 23.976 fps, scale it to NTSC proportions, encode it to MPEG 2 and treat it like film.

## Encoding Progressive Video

Many encoders support 23.97 video input and output rates. Many fewer will set the in-player telecine flags appropriately for NTSC DVD playback (MPEG Telecine will do this, however).

The QuickTime MPEG encoder will only encode NTSC shaped video at 29.97 fps. It is possible to use the QuickTime MPEG encoder if you adjust the timing (without changing the frames) of the source movie so that it appears to be 29.97 fps video (although it would naturally be 23.976 or 24 fps). In other words, the motion looks sped-up significantly on playback.

If you encode such a file with the QuickTime MPEG Export component, then run the result through MPEG Telecine the speed will be corrected and the video will be treated as progressive.

## DVD Film Transformer

DVD Film Transformer is a paid product from the author of MPEG Telecine that performs several useful functions in the processing of progressive video.

It performs inverse telecine quickly and accurately. It scales the video to PAL or NTSC sizes, and standard or anamorphic display aspect ratios. It scales the audio as necessary so that synchronization is maintained. It can export 23.97 fps video as if it were 29.97 fps so that it can be used with the QuickTime MPEG Export Component that is supplied with DVD Studio Pro.

If you are interested in progressive video processing, try the trial version for a few days.

## Cautions

MPEG Telecine makes the bold assumption that you have some idea what you are doing (boy, does that simplify the programming).

If you give it a collection of files that are named appropriately, it will process them.

If you supply a combination of spreadsheet files, application files and your laundry list, you will not get anything useful on the output. But MPEG Telecine will happily do it for you.

MPEG Telecine for Mac OS 9 is free. MPEG Telecine for Mac OS X is a paid product and part of the MPEG Append Suite for Mac OS X.