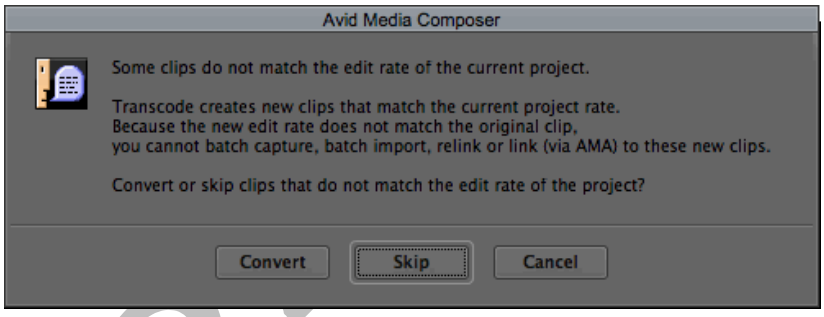
Transcode and Relink Across Projects with Different Frame Rates

With the introduction of Avid Media Composer v6, Avid's Mix & Match allowed for sources of different frame rates to exist in the same timeline. In order to match back to the source for a conform via a relink, it is recommended that the source clips first be opened in their native project type, AMA link, then transcode if needed, before opening it up into the master timeline project. From there, the user can manage sources by decomposing the timeline, sorting by frame rate, and going back to the original project if a relink and transcode to a higher resolution was needed from the camera originals, or access to the higher resolution with FrameFlex, new with Media Composer v7.

But it is quite common for these steps to not be adhered to, as the user may be new, doesn't read the manual, or just basic human error of not creating the proper project to start with and start editing right away. To me, good solution design is not only designing for when everything is perfect, but also anticipate most if not all the errors than can happen in a workflow and allow a user to continue editing. The following steps can be used to bring a timeline back to the original frame rate of the sources if a transcode was done at the wrong time, in the wrong project that did not have matching frame rates.

Whenever you start a transcode project in a project where the frame rates do not match, you are presented with a warning dialog box and three options.



Most people do not read this carefully enough, but it is pretty clear as to what will happen. The most important part of this warning message is:

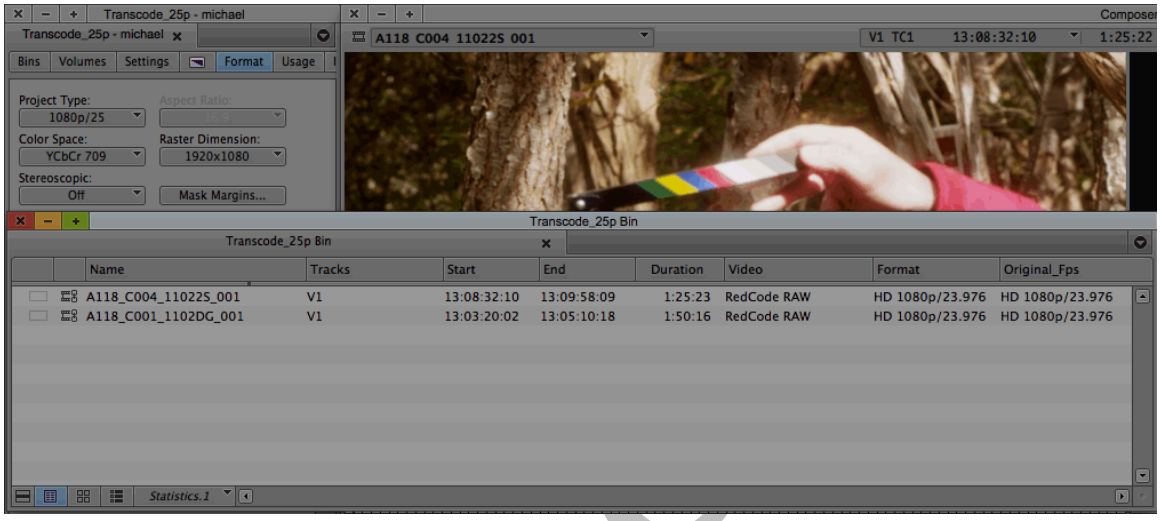
"Because the new edit rate does not match the original clip, you cannot batch capture, batch import, relink, or link (via AMA) to these new clips."

And many uses will just click convert and move on from there. If you are transcoding to a high quality finishing codec, this may not present a problem, but if you are in an offline/online workflow, this will create headaches when trying to return to the camera originals via a relink/conform process.

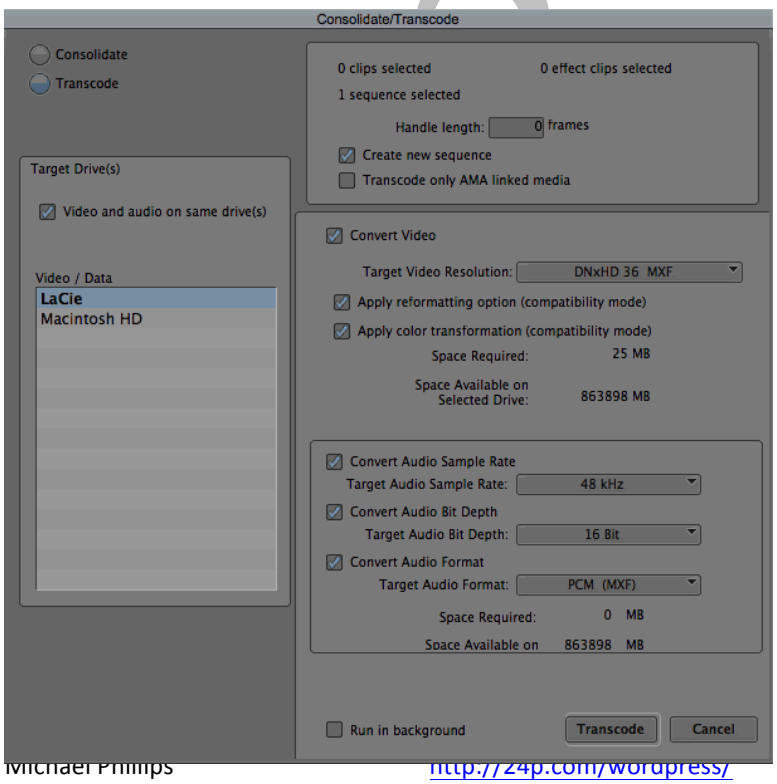
The following shows the steps to take to take a sequence that has been created from transcoded clips of a different frame rate. The process is the same for any frame rate, this example shows original R3D 23.976 files opened in a 1080p/25 project and transcoded directly to DNxHD 36 as part of an offline editorial. In this scenario, the user was not paying attention when creating the project in their hurry to start editing.

Also note that Media Composer v7 was used, but this can be done in v6.5 with the introduction of Source and Target in the relink dialog box.

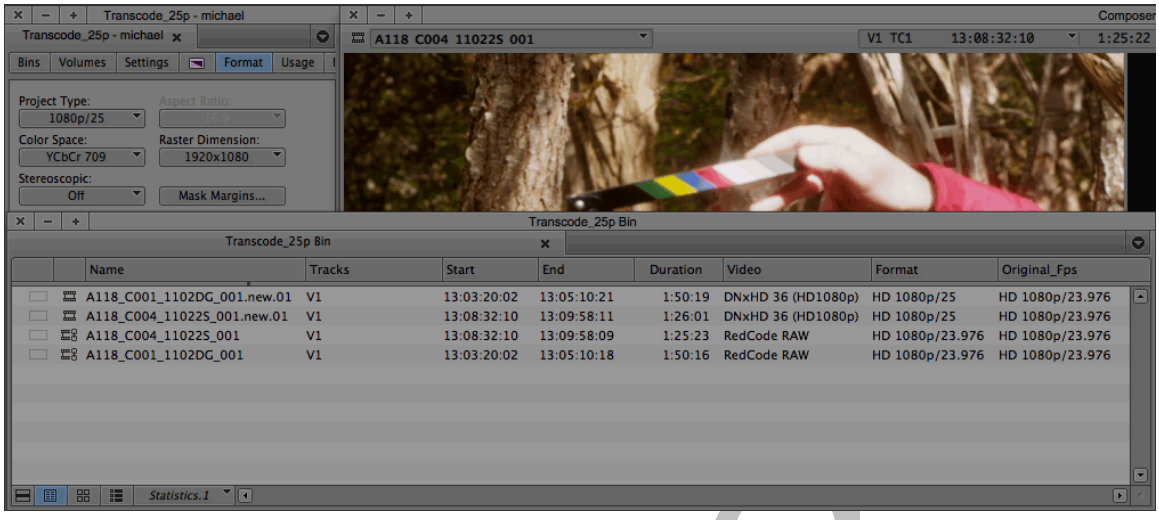
As seen in the graphic, the R3D 23.976 clips have been AMA linked directly in a 1080p/25 project directly. They did not go through the recommended practice of first opening in a 1080p/23.976 to have a matching frame rate. The column “Original_Fps” is something I created with a custom column. It would be great if Avid provided this automatically when doing a transcode. I have added it to better keep track of original source rate and better demonstrate what is happening after a transcode.



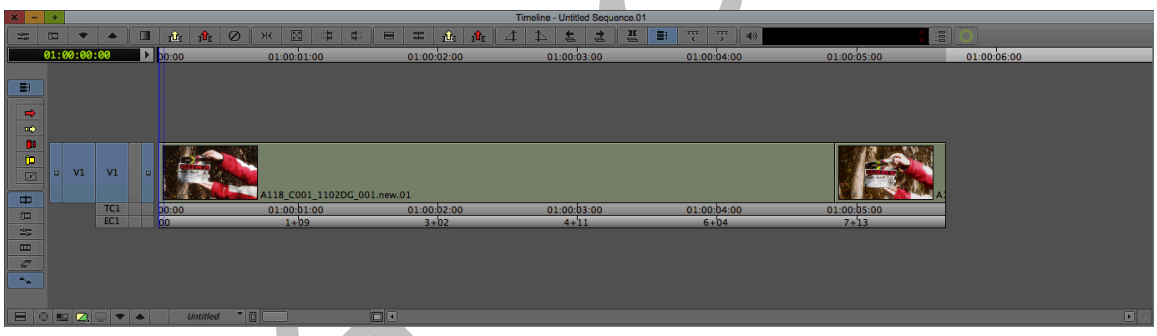
Select the clips and then Transcode from the Clip menu. The following is an example of that looks like when creating DNxHD 36 for an offline workflow:



At this stage, you will be presented with the transcode warning dialog box previously shown. Click "Convert." After the transcode has completed, the bin will show both the original and the transcoded .new clips. Note that the custom column indicating original frame rate also carries forward:



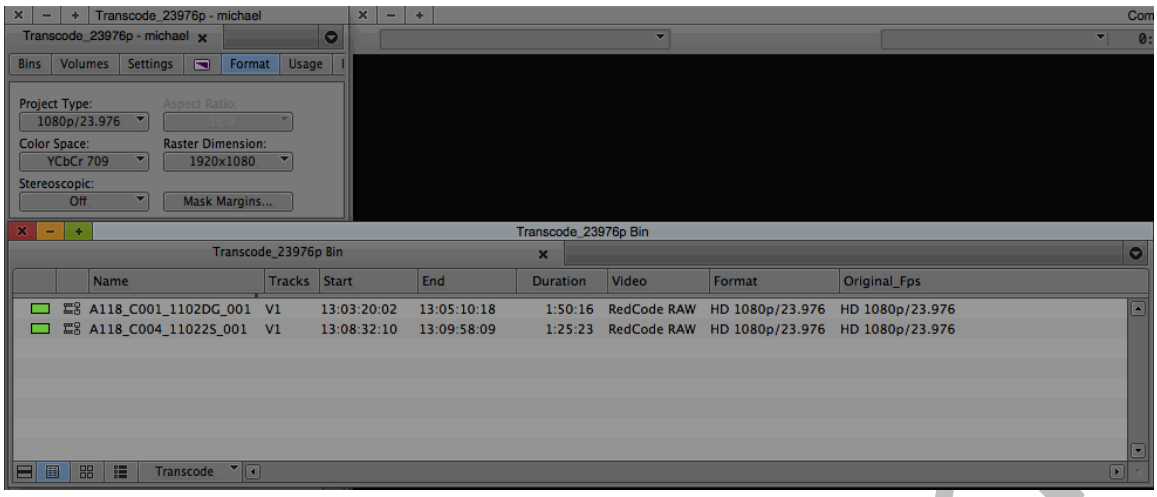
From the .new clips, a sequence is created. The lack of green dot on the clips in the timeline indicates that the clips and frame rate match the project rate of 1080p/25.



In order to see what the frame rate conversion is doing when we go back to the original clips in the 1080p/23.976 project, the first and last frame of each event displays xx:xx:xx:15 on the SmartSlate.

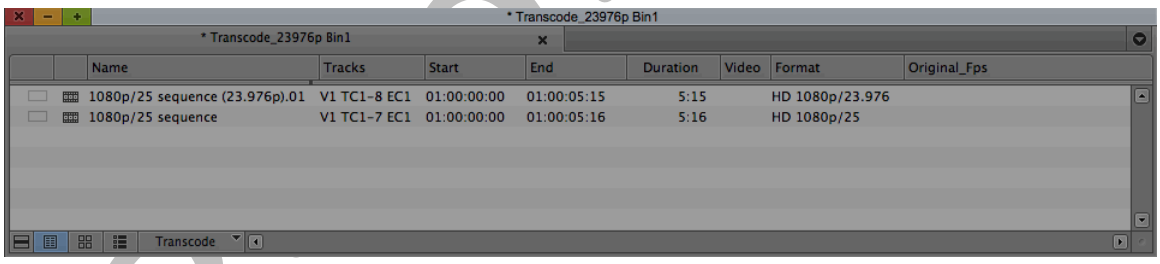
At this point, the user realizes the error of his or her ways, or wants conform back to the camera originals. Despite the draconian sounding warning message of the transcode dialog box, it is possible to do.

Create a project type that matches the camera original frame rate, in this example, it will be 1080p/23.976. AMA link to the original camera files. As seen here, I have labeled them green to better illustrate the success of the conform process once relinked.



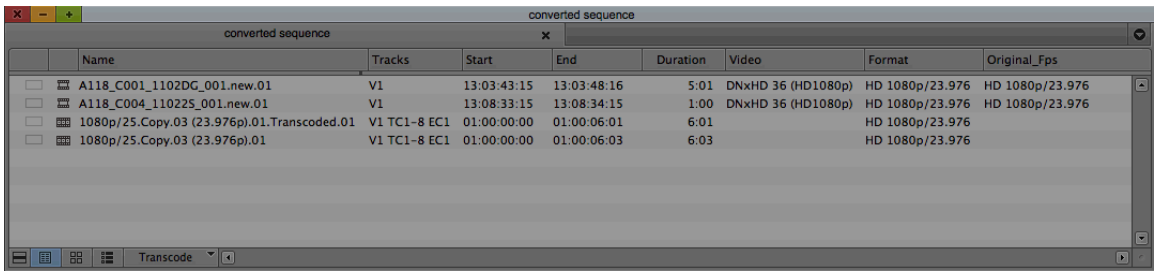
Open the bin with the original 1080p/25 sequence and copy the sequence to a new bin within the 1080p/23.976 project. Double click the sequence to load it into the record monitor and you will be asked whether you want to convert the sequence to the current project format. Click yes.

A new sequence will appear in the bin with the transcoded frame rate listed in parentheticals:

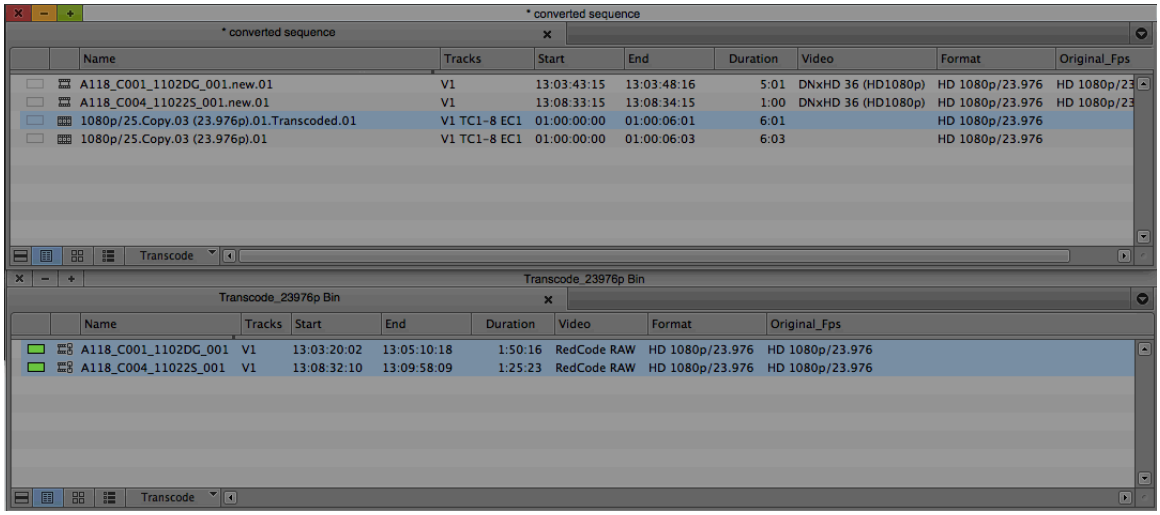


You will see notice that the sequence duration can be +/- 1 or 2 frames depending on the frame conversion between different formats. There can never really be an exact match as the frame boundaries per second are different. At this point, highlight the (23.976) sequence and select Transcode again. This will bring up the same “transcode warning” dialog box about some of the clips not being at the correct rate. Click OK.

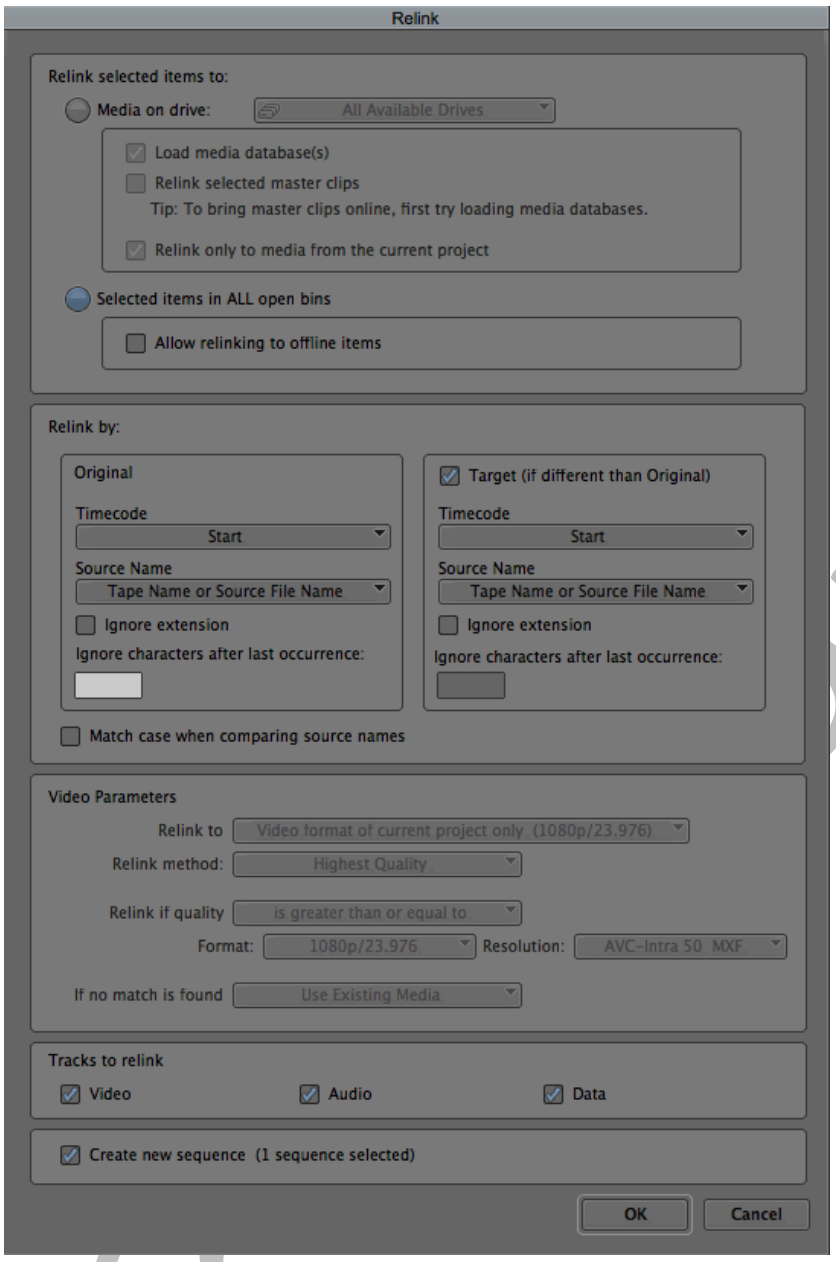
Unfortunately, a transcode needs to happen before a relink will work to the original clips. The bin will now have a copy of the original (23.976) sequence with “.Transcoded.01” appended to the name. You will also see a .new clip for the events associated with the sequence:



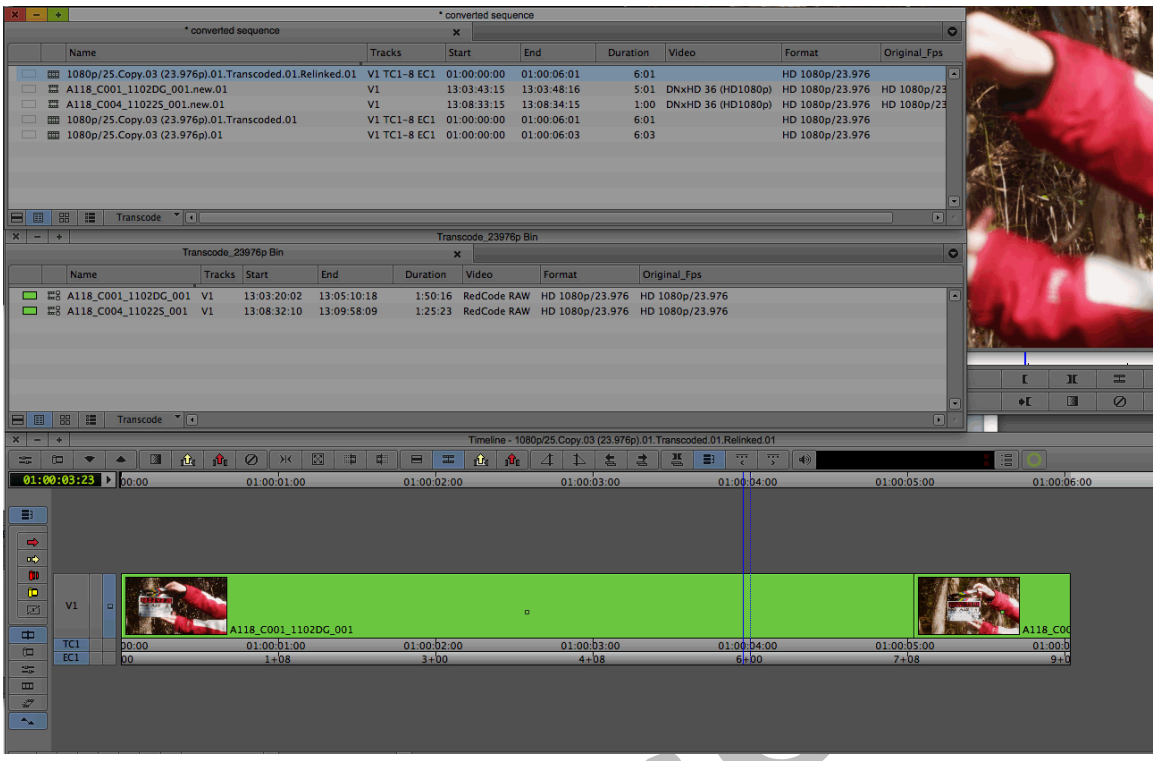
Highlight all the original camera clips that are AMA linked. These can be in the same bin or multiple bins depending on organization. Then select the ".Transcoded.01" sequence.



Right click the sequence and select "relink" from the menu. The relink settings should look the following:



Clicking OK will result in yet another sequence with ".Relinked" now appended to the sequence name. Once loaded, and setting timeline clip color settings to show "source color", it is easy to verify that the sequence is now relinked back to the original R3D file via AMA. The green color associated with the R3D files from the bin appears in the timeline.



When looking at the timecode of the slate, the original events started and ended with xx:xx:xx:15 on the SmartSlate. The converted and relinked sequence shows the first event being exactly matched, while the second event shows xx:xx:xx:14 at the head, and xx:xx:xx:13 at the tail. So the timecode adjustment slipped by 1 frame, and further adjusting for time by trimming the tail by an additional 1 frame.