Phoenix

Film and Video Restoration

New Features Guide
2018.3

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Source Editor

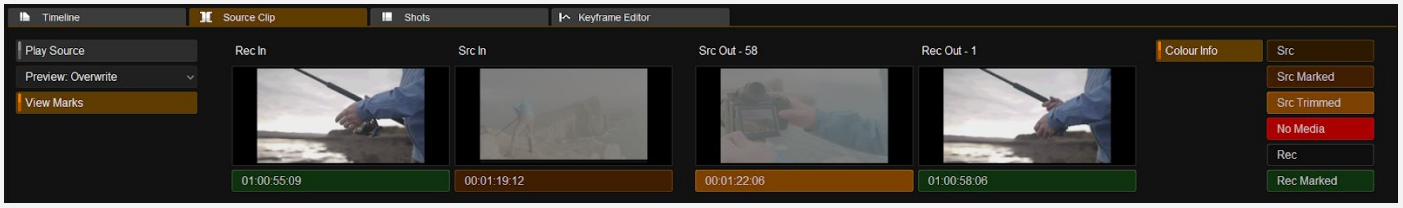
Source viewer to allow viewing and marking of material using a 3 point editing system

To allow the preview and marking of source clips before editing to the timeline a source mode has been added to Nucoda. Double clicking on a image clip will set the current status of the clip to “Source Clip” and load the clip into the new source clip viewer - located in a tab beside the timeline (access via F3)

Once in the source viewer the clip can be scrubbed and In/ou points can be set to allow splicing or overwriting of the clip into the record timeline. Mark in, Mark Out and Marked Duration columns have been added to the library to indicate whether a clip has been marked for in or out.

Using the source editing mode

Select the clip you would like to trim by double clicking the clip - the status will change to “Current Source” and the interface will switch to the Source Edit tab (F3). This clip remains in the source viewer until replaced by another clip.



The timeline below the thumbnails will be scaled to allow access to the entire clip. The source is indicated by a grey line, the orange line is the scrub bar, with no in or out point set the timecode boxes appear as dull orange.

Once a in or out point has been set (I or O) the colour in the timecode boxes will change - green for the composition and red for the source.An] or [indicator will appear on the scrub bar and on the image in the viewer. The on screen marks can be turned of using the View Mark button in the source viewer.

The Colour info button displays the meaning of the different interface colours.

Src - Colour of unmarked source

Src Marked - In / Out point added to source

Src Trimmed - The out point was trimmed to fit

No Media - No enough media to complete the edit

Rec - Unmarked composition

Rec Marked - In / Out point on timeline

Source viewer notes:

The text above the thumbnails wil give information on position and status for example:

- Rec In indicates you are viewing the frame you will replace
- Src Out -1 indicates you are viewing the frame you will replace

- If there is not enough material to make the edit you will receive a warning that there is not enough material
- Compositions cannot be loaded into the source viewer
- To clear In/Out points on a clip, right click on the clip and select “Clear Source Marks”
- Any audio attached to the media will be cut and placed in the same way as the video.

Editing example 1

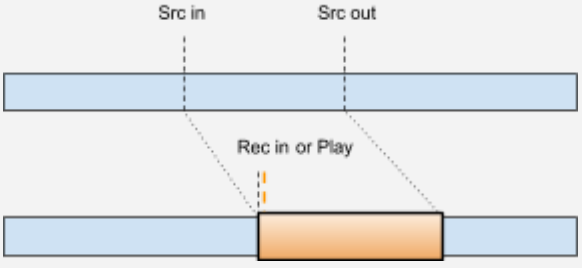
Adding a specific clip to the composition

- Source clip in and out
- Sequence in or playhead only

The in point of the source clip is placed at the in point in the composition, the duration of the edit is determined by the Source in and out. Seq in point can also be the active playhead.

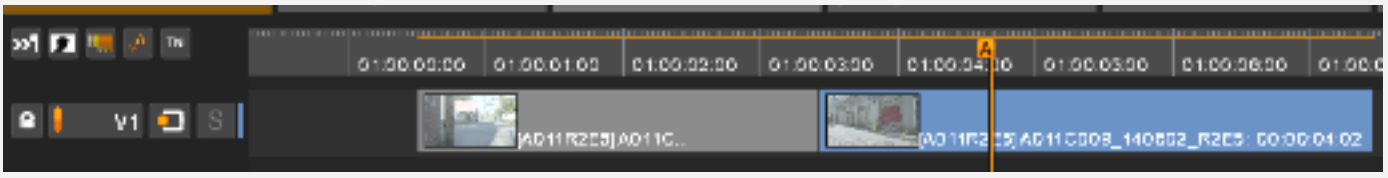
When using overwrite, the in point of the source clip is placed at the in point in the composition and the media is overwritten until the source out is reached.

Using splice (insert) will use the source in and out and splice the source material into the composition starting at the Composition in point. Seq In point can also be the active playhead.



In and Out points are set on the source, only the Rec in point or playhead position is required to perform the edit.

In point will take priority over play head



Choose where you would like to place the edit on the timeline, with no in or out points set the playhead will indicate where the clip is to be inserted - the length of the clip is based on the source In and Out.

Switch between source and composition using the Play Source button in the source mode (Alt +F3) or use the tabs in the top.

Use the Preview button to see the result of splicing or overwriting the current source to the timeline. The four thumbnails will indicate what the result will be.

If you are satisfied with the marks, switch to the composition view and splice (V) or overwrite (B)
the clip into the composition. Make sure a track is selected. If more than one track is selected the clip will be placed on the top most track.

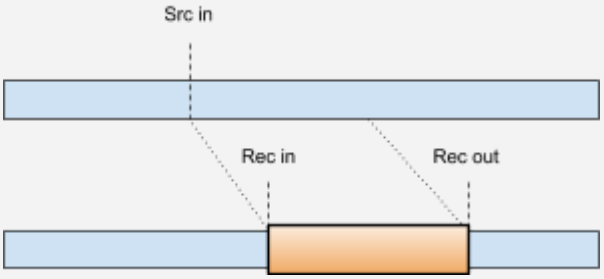
Editing example 2

- Source clip In only
- Sequence In and Out

The In point of the source clip is placed at the In point in the composition, the duration of the edit is determined by the composition In and Out.

When using overwrite the in point of the source clip is placed at the in point in the composition and the media is overwritten until the rec out is reached.

Using splice will use the source in as as a start and splice the rest of the source material into the composition.



When in and out points are set on the composition side the timecode boxes will have a green overlay to indicate this. In this case, even On the source side In and Out points are indicated with a dark red colour.

If there is not enough material you will not be able to overwrite to the timeline and you will receive a warning dialog.

In the source view there will be a bright red indicator in the timecode box to indicate that there is not enough media.

If there is enough media and the clip is overwritten to the composition, any additional source material will be trimmed. This will also be indicated above the out icon with the word trimmed and the amount of trimmed frames.

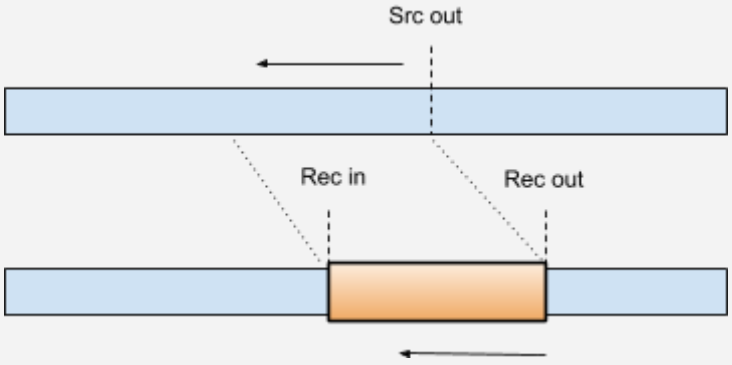
Editing example 3

- Source clip out
- Sequence In and Out

When using overwrite (B) the out point of the source clip is placed at the out point in the composition and the media is overwritten until the Rec in is reached.

Splice will use the source start as an in and splice the source into the composition from the rec in point.

If there is not enough media to complete the edit you will receive a warning and the edit will not be performed.



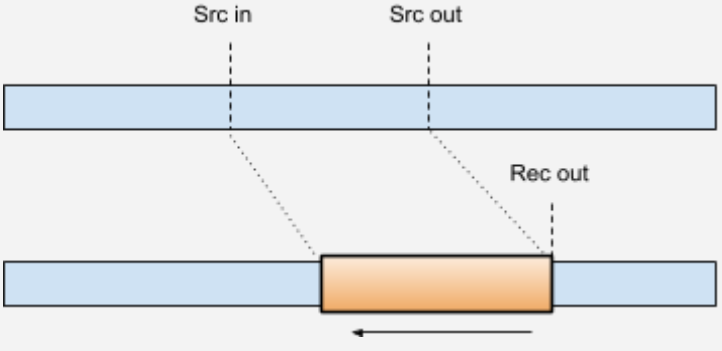
Only an out point on the source but In and Out on the composition, the source will be trimmed to fit when spliced (inserted)

A splice (B) since a splice would use the entire length of the source material after the mark in. If there is not enough media to complete the edit you will receive a warning and the edit will not be performed.

Editing example 4

- Source clip in and out
- Sequence out only

When using overwrite (B) the out point of the source clip is placed at the rec out point in the composition and the media is overwritten until the Rec in is reached.



Splice will use the source start as an in and splice the source into the composition from the record out point.

Rec Out only and source in and out marked. Overwrite will write the material forward over the composition. Splice will insert the material from the Rec Out point on the composition.

In case of multiple tracks, where ripple is required the splice must be made to the top most track.

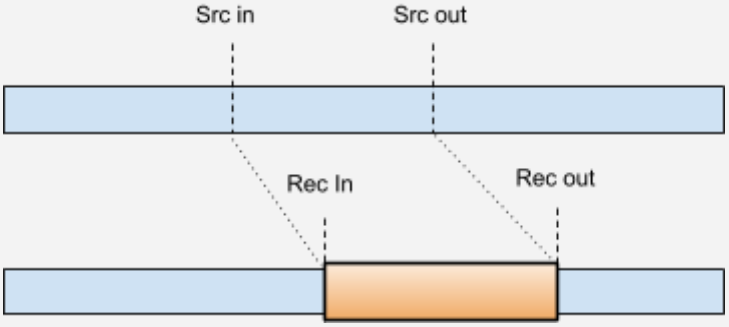
The clip can be moved down to another track if required by selecting Segment mode and moving the clip using the mouse or shift up/down arrow.

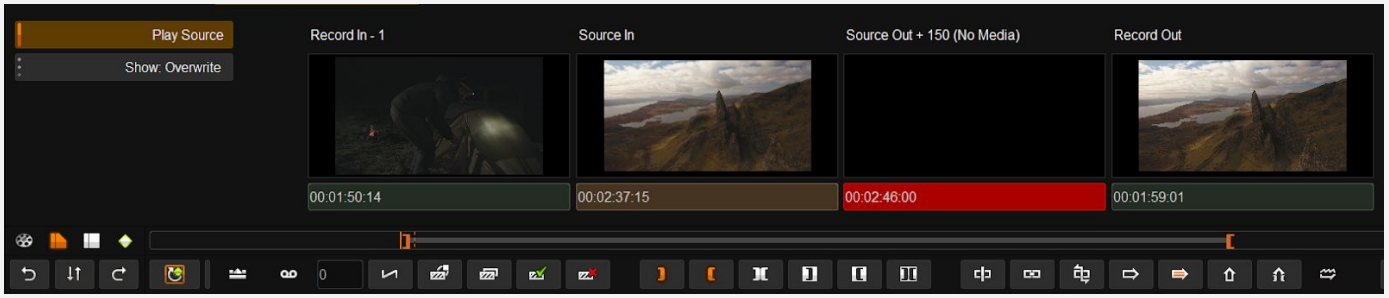
Editing example 5

- Source clip in and out
- Sequence in and out

In this case specific source will be spliced to a specific part of the composition. If the marked material is not enough the source is extended automatically.

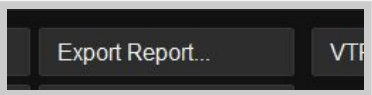
If there is insufficient material there is a dialog and bright red timecode box to warn the user.





Composition Reports

A new feature has been added to Phoenix and Nucoda to generate a report based on the current open composition. The **Export Report...** button is in the main library menu next to export media.



These reports can be useful for:

- Restoration reports
- Reports on VFX shots used in productions

Here you can choose the type of information you would like available in the report. This includes;

- DVO tools
- Colour tools
- Amount of fix strokes made by the operator (this includes per clip and totals)
- Comments in markers (bookmarks)
- Thumbnails

The user can select the sort order for the list based on Timecode sorting options
The report will respect the view state of the tracks - only active tracks are included
Export as Frames or Timecode

Selecting the Export Report button will automatically generate the report.
Making any changes to the required data will allow the report to be regenerated if you want to see the result

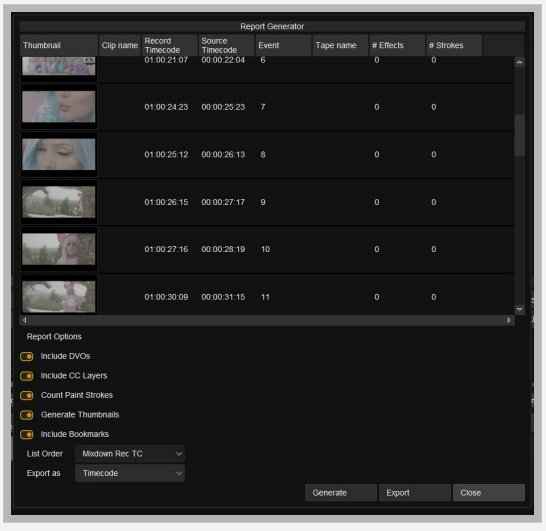
To export thumbnails they must exist in the event viewer as the same thumbnails are used.

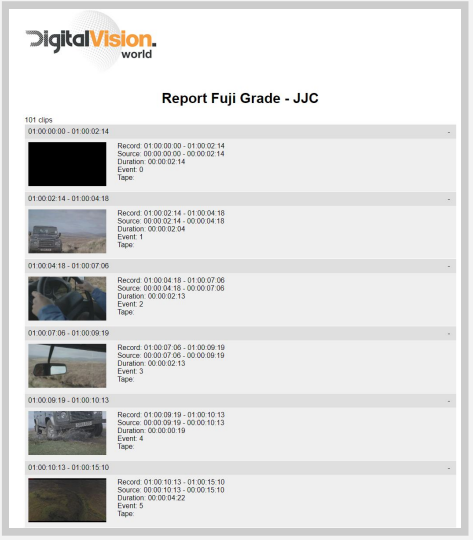
Once generated, the report can be saved as CSV file (no thumbnail support) or as HTML using the supplied template. The template can be customised for your requirements and can be found in C:\2018/3\Root\Presets\System

The HTML file and a directory with the required data will be saved in the same location. The directory will have the same name as the name you specified for the HTML file.

A custom logo can be added by replacing the logo.png file in “C:\Nucoda\2018_3\root\ReportTemplates” with your own company logo. The html template is also located here.

Information on customising the html template file is in Appendix A.



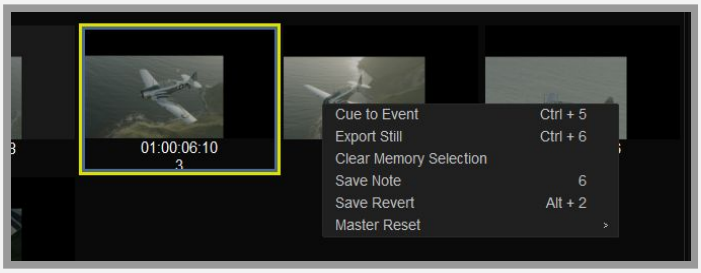


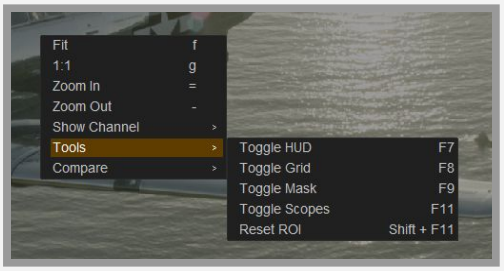
Interface Improvements

Context sensitive right click menus have been added to Nucoda and Phoenix

Menus have been added for the Timeline, Timeline clips, Viewer, Library, Notes & Event view and the Project screen. Menus will display commands and current hotkeys for the command.

Right click anywhere in the GUI to see if there are menus currently available.





User Default setting for Effects

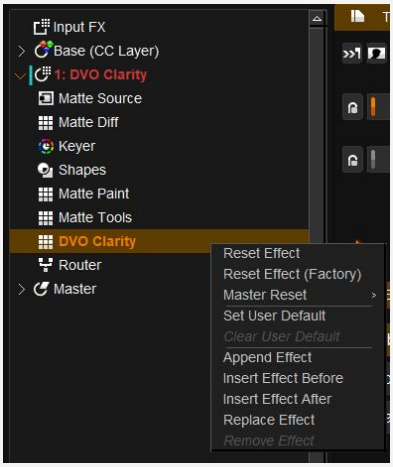
This version introduces user defaults for effects. It will work with any effect that is applied as Input FX or Effects Layer.

Currently it is only possible to add one User Preset

Presets are stored per user in a folder names EffectDefaults, this will contain all the presets that the user saves. Deleting this folder will delete the presets but will not affect any projects.

The process for saving a user effect is simple

- Add the effect you would like to save a default for (eg Clarity)
- Set the effect to the desired settings
- Right click on the effect and choose “Save Default” from the menu.



When applied again Clarity will use the new values as the Defaults.

- The effect will show as edited in the layer stack (Bold)

Other options in the menu:

- Reset effect (same as reset in the GUI) - will reset the effect back to user default (if it exists)
- Reset Effect (Factory) will reset the effect to the shipped values - it will not change the defaults
- Clear User Default - This will remove the User Default

More options include :

Master Reset
Append
Insert Before
Insert After
Replace Effect

When adding layers make sure that your layer is selected before right clicking to add, insert or append.

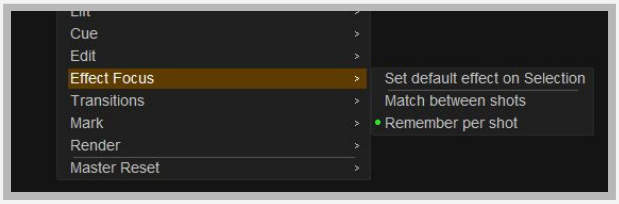
Layer Focus on shot change

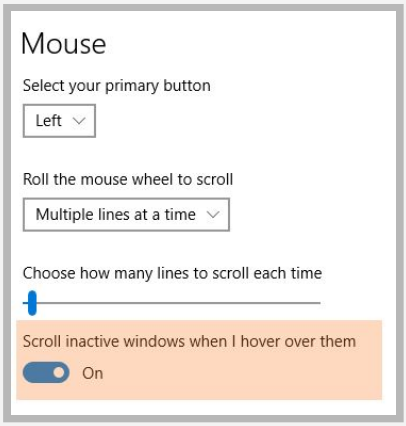
The preference to choose whether to match layers between shots or remember per shot is now available from inside Nucoda by right clicking on the timeline - setting it to match between shots is a handy feature **Dolby Vision** work.

Reset Layer default tool

The default colour tool when moving to a new clip can now be reset from within Nucoda, double click the colour tool you would like to set as the new default colour effect for all selected clips in the composition, right click on the timeline and select the Set Default effect on selection command.

The selected effect will be the default tool on any selected clip. Layer selection may change when using this tool, especially if you have differing number of layers on clips.



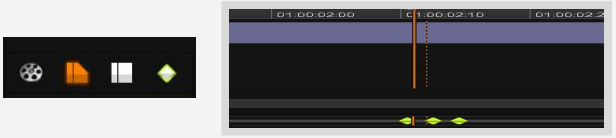


Misc interface changes

- In Win 10 the default mouse settings will work correctly
- Text is now left justified in menus and button
- Arrow to replace three dots on menu buttons
- You can now delete or detach multiple projects at once
- Cleaned up GUI inconsistencies
- Fix text overlaps on buttons
- Tabbed interface for clip properties

New timeline zoom level

Ctrl + G will zoom the timeline to a level where keyframes are easily visible and editable - the zoom is based on the proximity of keyframes to each other at the playhead.



The timeline view mode must be set to Timeline mode

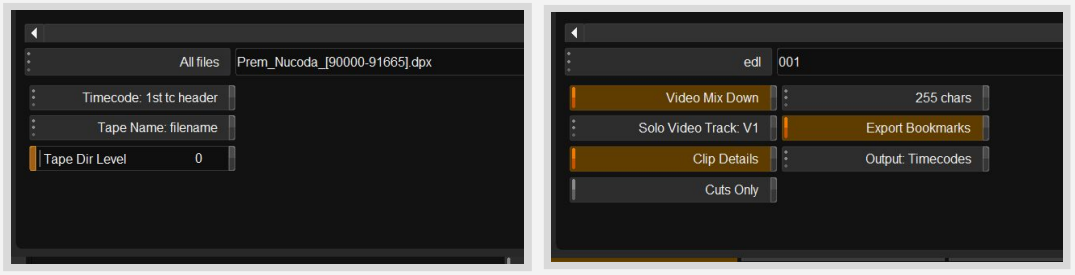
Setting the timeline view to Clip mode will also make editing keyframes easier when zoomed out of the timeline as it will display the keyframe area of the current viewed clip to the width of the timeline in the keyframe display area.

Rename tracks dialog

The rename tracks dialog is available from composition properties or by right clicking on the timeline or a composition in the library. Once open double click the name field to update the track name.

Changes to Import and List dialog boxes

Options that were previously hidden have now been placed prominently in the dialog box, this makes certain functions more discoverable for users.

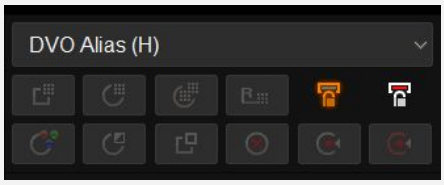


Deform tracker - new defaults

Defaults for Flexibility and tightness can now be set in preferences. Setting Flexibility to lower values will prevent the shape from deforming - although it will still scale. Tightness will change where the tracking points are placed - this is best left at current defaults.

Lockable tracks and clips

Tracks and clips can now be locked to prevent any accidental changes to grading parameters. Locking can be per clip or multiple selected clips, selected tracks or all tracks. All panels and the GUI is affected.



Make sure you have the playhead over a clip, pressing the lock icon will lock all tracks,.
Ctrl+click to lock only the track with the active clip.

With clips or multiple clips selected - clicking the clip lock icon will lock the clips - to unlock - select the clips to unlock and make sure the playhead is on a locked clip. Click the clip lock icon.

On Precision, use the Lock button on the Transport panel. Transport keys are not affected.

Markers

Export in EDL

There is now support for Avid timeline and segment (clip) marker types

When exporting an EDL from Nucoda, the syntax for the EDL matches the Avid format, allowing them to be imported into Avid from Nucoda - this includes notes. Segment markers will retain specific colour information while timeline markers are always Red.

005 REEL0B02 V   C   00:21:19:14 00:21:25:12 00:58:17:20 00:58:23:18
* FROM CLIP NAME:
* FROM FILE: S:\NAB Demo_Material\Flight\REEL0B02_SCENE001_TAKE_0009_camB_0031900.ari
* FROM COMMENT:
* LOC: 00:58:19:11 GREEN Test
* 00:58:22:00 TImeline Bookmark

Merging and Importing bookmarks

When merging grades, bookmarks that are merged to the new track can be identified using the new Track Column in the bookmarks list - this makes finding and deleting duplicate bookmarks easier.

If the EDL option to import bookmarks is selected during the merge, a check will be done for new bookmarks and they will be merged. Any duplicates will not be merged

Adding and Deleting markers from the Timeline

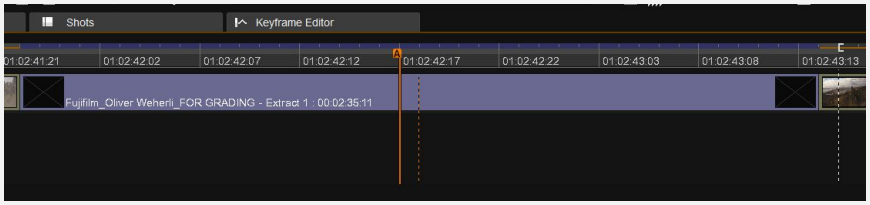
Right clicking on the Timecode track will show the bookmark menu, you can Add, Delete or move between bookmarks.

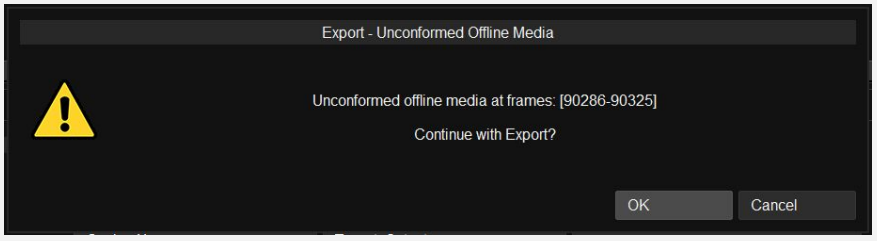
- Right clicking to add a bookmark will add the bookmark at the playhead position
- Right click and delete will directly delete the bookmark (timeline and segment)

- The bookmarks list can remain open while working and double clicking a bookmark will locate the playhead to the bookmark.
- The list is also an easy way to delete bookmarks

Media offline warning

A blue timeline bar will indicate offline media in the composition, trying to export when media is offline will present a warning that media is offline and indicate where the issues are.





Dolby Vision 2.9 and 4.0 Integrated Content Mapping

Please note that projects approved to use CM 2.9 should still use the CM 2.9 processing pipeline.
Do NOT update projects automatically to CM 4.0

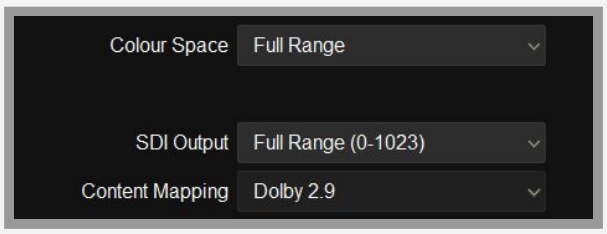
Dolby Vision - License

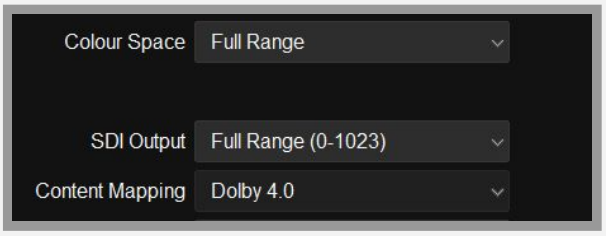
Access to the Trim features in the Integrated CM versions requires a license from Dolby. The license file should be renamed to *"DolbyCM_License.bin"* and placed in the c:\Nucoda\Licenses directory.

Any attempt at altering the license will invalidate it.

Contact Dolby dolbyvisionmastering@dolby.com for license information

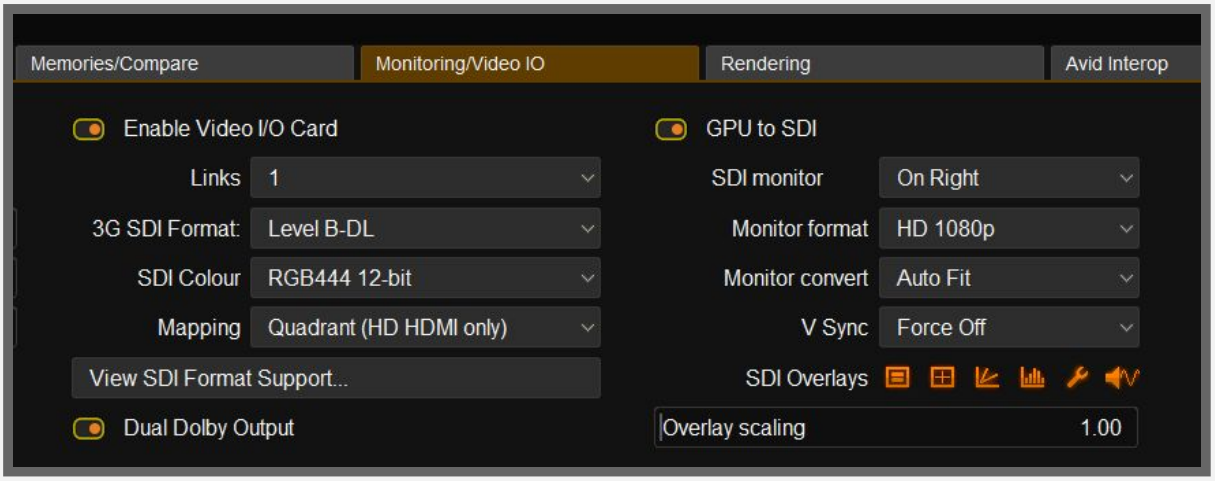
- CM 4.0 or CM 2.9 version are selected on project creation.
- Projects cannot be converted between versions - all values will be lost when switching.
- External CMU is available only in a 2.9 project and can be selected from the config menu.





There is a new viewing mode available that will output the HDR and SDR Trim versions using the Kona4 card (Output 3 and 4) - this allows viewing of both version simultaneously while trimming. It is only available in HD up to 1080P 30 at 444 12 bit - 3G

For UHD projects set the monitor format to 1080P (see below)



To view both the HDR master output and the Trim pass at the same time with the **Integrated CM** Option, select the Dual Dolby Output.

Please note this is only supported in HD resolutions and 444 is not supported in frame rates above 30fps

In Dual Dolby mode the Dolby Vision view will be on SDI 3 of the Kona 4 and the HDR output will be on SDI 4

Changes in Dolby Vision 2.9

Integrated Content Mapping 2.9 and External CMU - Firmware v2.6.3 and v3.0

- Added Scene Analysis mode - multi select analysed clips and press scene merge - will apply averaged analysis across all selected clips
- Lockable Trim controls for Precision Panel and GUI
- Dolby Vision bypass per clip
- XML Validation on export
- It is no longer possible to manually edit L1 Analysis Values
- Per clip masking and letterboxing
- There is now an Enable button for every clip that can disable the Doly Mapping effect on a per clip basis.
- Main trims and colour trims can be bypassed

What's in Dolby Vision 4.0

- Improved Tone Curve
- Custom Mastering monitor (one per project)
- Lockable Trim controls for Precision Panel and GUI
- New Mid Offset control
- New Trim metadata per target
    - 2.9 Metadata calculation for backwards compatibility
    - Updated Global Trim behaviours - LGG, Chroma Weight offset, Saturation Gain, Tone Detail Weight offset
    - 6 Vector RGBCMY Saturation and Hue trims
    - Mid tones offset, Mid contrast Bias and Highlight Clipping adjustments
- New licensing mechanism for Dolby Vision
- New Mastering and Target display updating mechanism
- Per clip masking and letterboxing
- It is no longer possible to manually edit L1 Analysis Values
- Scene based analysis - select multiple clips and apply average analysis to all selected clips
- XML Verify option for 2.9 and 4.0 XML files

New Precision controls option for Dolby Vision

A new mode has been added to the Precision Panel that will allow users to use the familiar Master Reset, Bypass All, Recall and Append buttons on the panel while doing Dolby Trims.

In a Dolby project, press the Turbine button, this will place the layer focus on the Dolby Content Mapping effect and place the panel in Dolby group mode, in this mode the following buttons will have their functions changed as follows:

MReset - Reset trim values - LGG and Colour
Ctrl + MReset - Reset Secondaries (4.0)
Hold MReset - Reset Analysis

Recall - Recall trim values - LGG and Colour
Ctrl + Recall - Recall Secondaries (4.0)
Hold Recall - Recall Analysis

Append - Analyse single frame
Ctrl + Recall - Analyse Scene Average

Bypass All - Bypass all trim values - LGG, Colour and Secondaries (4.0)
Ctrl + Recall - Bypass Colour and LGG
Hold Recall - Bypass Secondaries (4.0)

ACES 1.1 Support

New HDR Output Transforms

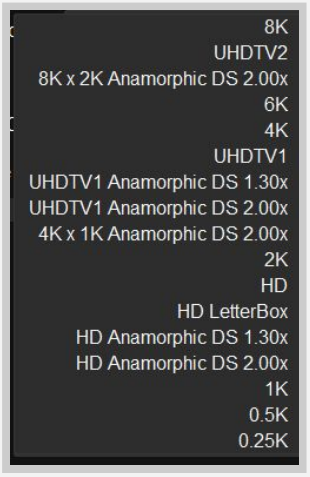
With the ACES 1.1 update there are new Output Transforms added, mainly for HDR, this includes new 2020 and P3D65 Transforms.

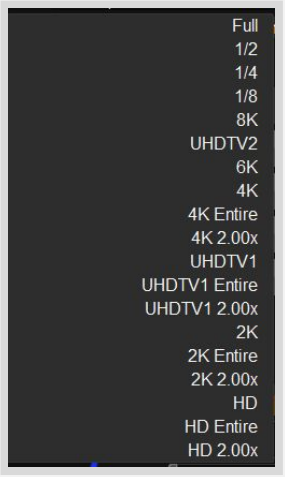
Some Output Transforms have been renamed for consistency

Support for Sony Venice/CineAltaV

X-OCN RAW file support - renamed image resolutions

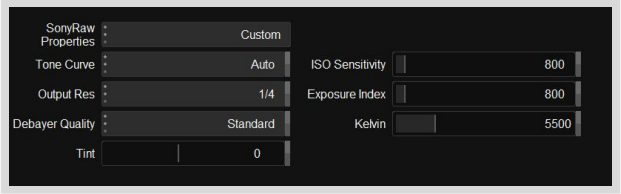
With the update to support the Sony Venice/CineAltaV bitstreams some changes were made to the naming of image resolutions in the clip properties. Old projects will correctly remap to the new resolutions.





Old Sony Menu New Sony menu

- Anamorphic 1.30x options have been removed
- 1K, 0.5K and 0.25 K has been replaced with 1/2, 1/4 and 1/8
- We have removed the word Anamorphic - it is now indicated by the 2.00x
- Letterbox has been replaced by the word Entire - this indicates that the whole image will be shown but scaled to fit, which may cause letterboxing.



Kelvin and Tint tool has been added to the properties and will read any metadata from the RAW file.

De-Bayer

Standard and High are available debayer settings. F55 and F65 RAW files cannot use the high setting, it is only available to F5 and F700 bitstream of 2K or less.

Appendix A - Report generator template information:

HTML template file located here: “C:\Nucoda\2018_3\root\ReportTemplates”

Some knowledge of HTML and CSS is required to edit - please make a copy before editing

A section is a part of the report that is repeatable. A section is denoted by "#section <name> ... #end" where <name> is to be replaced by with the name of the section. Anything up until the "#end" keyword will be repeated. Some sections are only available from inside of another section.

The current sections are:
composition: this section is implicit and does not need to be defined
└ clips: the content to be repeated for each clip in the composition
├ effects: the content to be repeated for each effect on the clip
└ bookmarks: the content to be repeated for each bookmark on the clip

A variable is just some dynamic value to be inserted into the report. These are denoted by a prefix of "$" - these are sensitive to the section that they are inside of. Variables are fairly trivial to implement should we want to make more information available. The current variables available in each section are:

Composition:
• $name
• $numclips: number of clips in the composition
• $numeffects: total number of *non-default* effects
• $numstrokes: total number of paint strokes

Clips:
• $record: record timecode
• $source: source timecode
• $event: event number
• $tape: tape name
• $name
• $numeffects: number of *non-default* effects on the clip
• $numstrokes: number of paint strokes on the clip
• $thumbnail: path to the clip's thumbnail

Effects:
• $name
• $numstrokes: number of paint strokes on the effect
• $count: number of times this effect occurs on this clip

Bookmarks:
• $name
• $note
• $record: record timecode

There is also the ability to do conditionals. These are fairly primitive in that they only include their contents if a variable has a value. Conditionals are denoted by "#if <variable> ... #end" where <variable> is to be replaced by a variable name.

For example:

```
#if tape
        $name has a tape name of $tape
#end
```

The contents would only be output if $tape has a value.

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