

Nucoda



Features & Benefits
Version 2013.2 Release 3

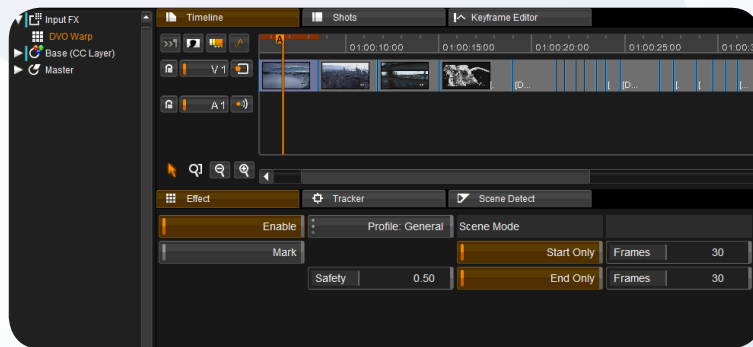
Doc Rev 2

New Effects

DVO Warp (part of DVO Restore)

DVO Warp is an intelligent and automatic tool for removing warping phenomena often associated with line scanners. The current version of the tool deals with the main issue of warping along the vertical. The tool is very precise with results hard to match for any manual/semi-manual process. Safety is a high priority for the tool so that it can be run largely unsupervised without creating issues

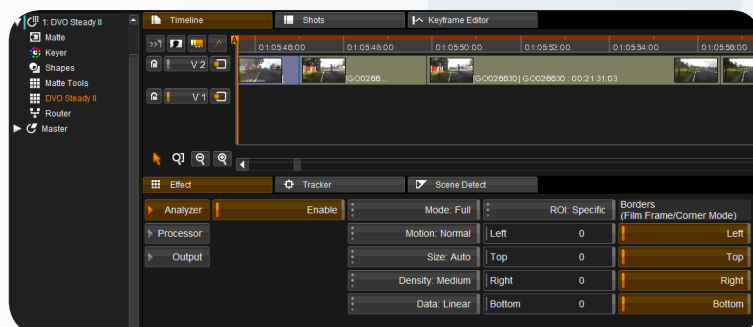
Please check at the end of this guide for full documentation for this feature.



DVO Steady II (part of DVO Restore and DVO Camera)

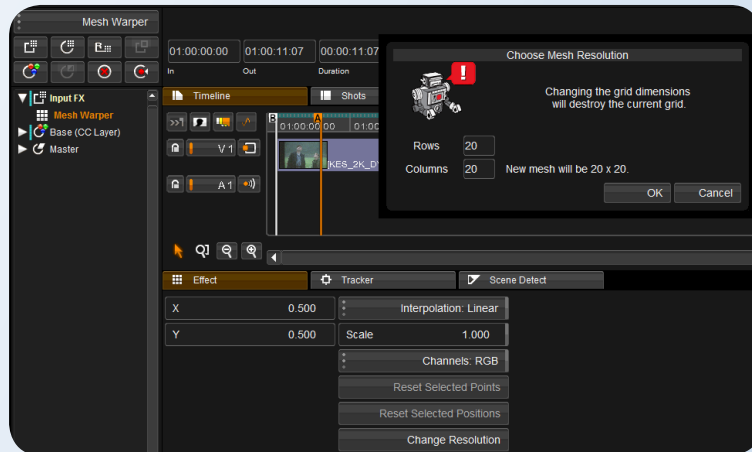
DVO Steady II is an updated version of the DVO stabilization tool. One of the main new features is the repair of splice jumps. DVO Steady II is now a single pass tool. The new version also includes smaller updates for better results, some more options and automation of some aspects.

Please check at the end of this guide for full documentation for this feature.



Mesh Warper

An extension to the current Warp tools. A user defined grid can be added to the Mesh Warper (Max 40 x 40). Controls for resetting selected points on a single frame or resetting selected point on all frames.



File I/O

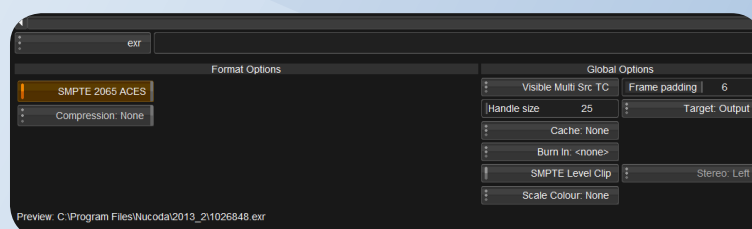
Support for Infra Red dust maps

New functionality added to support the embedded alpha in 10 bit DPX files used to store Infra Red dirt maps from film scanners and the Kodak Digital ICE system.

The two supported formats are the tri-level defect mattes and the bi-level dual image element files.

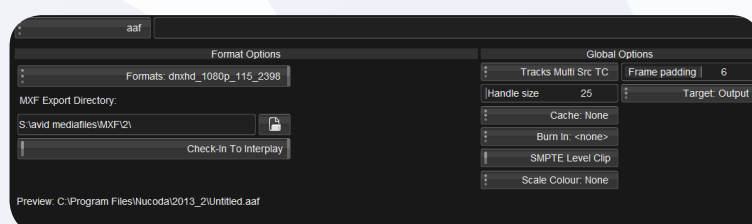
Source & Record TC export options now available in Stereo projects

When working in Stereo projects it is now possible to export media using the original source timecode of both clips (this will be different if the Left and Right eye files originally had different source time codes)



Enhanced path selection during export of AAF

An additional file browser has been added to the export options when exporting an AAF in Source mode. The main browser is to specify the AAF path as before. The new browser will now allow the user to specify any directory as the destination for the MXF files. Please ensure that the directory chosen can be scanned by an Avid workstation for the media to be available in the media tool.



User settings

Colour space for importing files can now be set in clip.prefs

By editing the clip.prefs file it is now possible to set the default colour space for imported files. This is now available for all file types (previously only available for DPX)

The following strings can be used:

- Film Log
- Linear (SMPTE)
- Linear (CGR)
- Video Log
- ACES

DVO Warp user documentation

DVO Warp is an intelligent and automatic tool for removing warping phenomena often associated with line scanners. The current version of the tool deals with the main issue of warping along the vertical. The tool should be considered very precise with results hard to match for any manual/semi-manual process. Safety is a high priority for the tool so that the tool can be run largely unsupervised without creating issues.

Enable: On/Off

Enables the tool.

Mark: On/Off

Enables diagnostic marking of the dewarped frames by drawing a white circle in the upper right corner of the image.

Profile: General, GE-III (a), GE-III (b)

This control is used to set internal configuration parameters to match specific behaviours which have been identified for example for a specific scanner type. The different modes are:

- **General** The general mode for sources which are unknown or don't have a profile.
- **GE-III (a)** Golden Eye III model A – the most common model
- **GE-III (b)** Golden Eye III model B – uncommon model with a different mechanical construction which affects warping behaviour.

NOTE: The profile setting does not visually change any of the other user parameters, but may in some cases affect how they are interpreted. In particular, the Sensitivity parameter may be interpreted for conditions matching a specific profile. The general mode has no specific tuning and expect this mode to have greatest effective range for a parameter such as Sensitivity.

Sensitivity: 0.0-1.0 (0.5)

This parameter sets the general sensitivity for the detection and selection of warped frames to process.

A low sensitivity corresponds to warps with high “amplitude” (more visible) and high sensitivity then corresponds to warps with low amplitude (less visible).

There's a lot more to the actual selection process (than this parameter), but it is important to note that if you set sensitivity too high the actual processing may become much harder even to the point that the algorithm cancels it for safety reasons.

Sensitivity should mainly be tuned for a common source and scanning. It should normally not have to be tuned for specific clips.

Safety: 0.0-1.0 (0.5)

The tool will determine how safely it can process frames/segments and this parameter let's the user set a desired safety level. In relation to this setting, the process will cancel the dewarp process if it is considered too unsafe.

This parameter is more of statistical nature targeted for setting a comfortable level for unsupervised processing (of a lot of material). The effect of the parameter's range may not always be noticeable for an individual and particular clip, e.g. for a segment cancelled the reason can be that it will always be considered unsafe for various reasons outside of which the parameter can control.

Offset: Keep, Try Stabilize

When a frame is warped it normally exhibits some kind of offset or jump. By default the dewarp algorithm will try to stabilize such offsets. "Try" symbolizes the fact that it is not in all situations it can stabilize such offsets. The internal stabilization is fairly basic and as an alternative the more advanced DVO Steady II can be used and might even be a preferred choice. This functionality only affects the actual frames being dewarped. To summarize the options are:

- **Keep** Keeps the average offset of each frame.
- **Try Stabilize** As described stabilizes frame offset/jumps when possible.

Scene Mode

Typically the frames affected by warping issues are on either side of a physical splice. By default the tool is set up to only analyze frames on either side of a scene cut, but it can also be set to analyze all frames.

Start Only: On/Off**Frames:** 0-50 (30)

Enables analysis/processing at start of scene. Is further specified by the number of frames after the scene cut which should be analyzed.

End Only: On/Off**Frames:** 0-50 (30)

Enables analysis/processing at start of scene. Is further specified by the number of frames before the scene cut which should be analyzed.

Full Analysis/Processing:

Full analysis/processing (of all frames) is enabled when both "Start Only" and "End Only" have been disabled.

Region of Interest

The use of the region of interest is a bit specific for the dewarp tool.

The left and right sides are used to isolate the area used for warp analysis. The effect will still be that the full image is processed accordingly. Basically, the use of left and right is useful for selecting an area which may be easier to analyze in some circumstances. The algorithm should be quite robust under many conditions, but if a part of the frame is largely filled with complex motions this can be a useful way to disregard those areas.

The use of top and bottom will have an effect on the actual processing. By setting top or bottom, you are telling the tool not to dewarp these areas. However, these areas will still be repositioned according to the position offset of the inside of the ROI (i.e. top and bottom line).

The following parameters control the region of interest:

ROI: On/Off**Left:** 0-Width**Top:** 0-Height**Right:** 0-Width**Bottom:** 0-Height

Left, Top, Right and Bottom are specified as the offset from respective frame edge. These can further be controlled in the graphical ROI overlay by selecting and repositioning the lines for left, top, right and bottom.

DVO Steady II user documentation

DVO Steady II is an updated version of the DVO stabilization tool. One of the main new features regard splice jump fixing. The tool has furthermore progressed to being a single-pass tool. The new version also includes smaller updates for better results, some more options and automation of some aspects.

You will find most of the familiar settings available from the original DVO Steady, but it might be slightly reorganized. The settings are organized into three groups (and pages):

- 1) Analyzer Settings regarding the stabilization's focus of interest and particulars of the material.
- 2) Processor Settings related to the amount of stabilization to be performed for achieving a certain smoothness of the result.
- 3) Output Settings for the final output rendering, enabling the user to hide the visibility which stabilization has on frame borders.

Enable: On/Off

Enables the tool. This parameter is accesible from every page.

Analyzer

Mode: Full, Centre-Weighted, Border-Weighted, Frame Only, Corners

This parameter set the general mode for what the analyzer should focus on when detecting the perceived unsteadiness. Apart from the full image, the description similarly applies to a possibly specified region of interest. The different modes are:

- Full Regards all parts of the image equally.
- Centre-Weighted Has a higher focus at the centre of the image compared to borders.
- Border-Weighted Has a higher focus at borders compared to the centre.
- Film Frame Only uses the film frame borders in the image. Optionally, this can further be adjusted by specifying which actual borders to include in the analysis. The analysis is separated such that left and right borders are used for horizontal correction, and top and bottom borders for vertical correction.
- Film Corners Only uses the film frame corners in the image during analysis. Similar to the Film Frame mode, the selection of borders also applies here.

The most tried and tested modes are the Full, Centre-Weighted, Border-Weighted which essentially will try to stabilize the image content whether unsteadiness is a result of a scanning procedure, damaged sources or just camera movement. These modes will be refered to as the *normal* analyzer modes.

The Film Frame and Film Corner modes are only intended for when the images are overscanned, i.e. the image includes film frame borders and maybe also sprocket holes. The selection of borders should correspond to which sides have overscan available. These modes will try to only use the frame for stabilization, i.e. will not attempt to correct for camera movement. Typically region of interest should be set manually to where the frame border is or possibly an edge of any available sprocket holes. An automatic region of interest detection can also be used under some circumstances (see later description). Later also note some special things to consider regarding border selection for these modes. Furthermore these modes are faster than the other modes, but they should also be considered less robust and the frames themselves may sometimes actually not be the best thing to use for stabilization.

Motion: Normal, Fast

This parameter is used to describe the expected motion content of the material. Resort to the Fast mode, if you have fast moving material which on “Normal” seems to create breaks in the smoothness of the stabilization. This parameter only has an effect when “Size” is set to “Auto”.

Size: Auto, Small, Medium, Large, X-Large

The optimal size parameter is actually related to several things like image size, analyzer mode and motion content. The default “Auto” setting will figure this out automatically for you, but you can still override this by forcing one of the other settings. No further explanation is given here regarding the other settings, other than that Medium is a standard starting point.

Density: Low, Medium, High

Determines how detailed the analysis will be. The setting is related to the scene motion complexity (i.e. different objects with different and/or complex motion patterns). Medium is the normal setting and for high complexity scenes a High setting might help. The density setting will affect the processing speed, so a Low setting can be used for low complexity scenes to improve speed.

Data: Linear, Log

Describes the source's data format to better match analysis with how images are supposed to be viewed. Most of the time Linear will work just as well for Linear and Log formatted images, but don't use the Log setting for a Linear source.

Region of Interest

In the *normal* analyzer modes, the region of interest is simply used to isolate the part of the image which should be analyzed. If not used to target some specific part, it's usually best to set the ROI to exclude any “black” borders whether it's blanking or an overscan. In the Film Frame/Corner analyzer modes it's imperative that the ROI is set to where the film frame is or possibly aligned with the border of any sprocket holes. Actual parameters that control the region of interest are:

ROI: Disable, Specific, Auto

Left: 0-Width

Top: 0-Height

Right: 0-Width

Bottom: 0-Height

Where the ROI options are:

- **Disable** No ROI is used, or rather ROI corresponds to full image.
- **Specific** ROI is set manually either using the GUI control overlay or using the individual parameters Left, Top, Right, and Bottom for the offset from respective image edge.
- **Auto** Will find the relevant frame of content automatically removing for instance blanking or overscan. The automatic mode should work most of the time if the material has clean and undamaged borders. In the event of sprocket holes, if they are only available at the far top and far bottom they will be excluded, otherwise if running more towards the middle the auto ROI will be set to include them.
NOTE: Unfortunately, the GUI and Left/Top/Right/Bottom parameters will not reflect the result of the auto detect.

Borders: On/Off for each of **Left, Top, Right, Bottom**

In the Film Frame/Corner modes the user needs to select which borders can and should be used for the analysis. First of all, only genuine and completely visible film frame borders can be used, any others must be unselected. It's not always that the actual film frame is completely consistent in size between frames and if this seems to be the case (e.g. stabilization seems ineffective), one must resort to selecting only one of either left or right and one of top or bottom.

Regarding the Film Frame mode, left and right borders will only be used for horizontal analysis and top and bottom only for vertical analysis. So, if you for example unselect both left and right no horizontal stabilization will be performed.

Regarding the Film Corner mode, an unselected border implies that both corners on that border are unfit for use in the analysis.

Processor**Aggressiveness (X, Y):** 1-10 (5)

The aggressiveness determines the level of smoothness that the stabilization can achieve. The setting should relate to both the amplitude and the temporal natural of the unsteadiness which is targeted for stabilization. Low values are used for fine errors with small amplitudes and short temporal effect (e.g. frame-wise jitter). High values are used for coarse errors with large amplitudes and long temporal effect (e.g. handheld camera shake). This parameter can be set separately for horizontal (X) and vertical (Y) stabilization.

Safety**Motion:** 0-10 (5)**Quality:** 0-10 (3)

The stabilization process is adaptive such that when difficult situations arise it can react and proceed with a robust behaviour. This essentially means that the stabilization effect will be reduced such that possible errors in unsafe situations will not appear.

There are two aspects of safety which are considered, motion and quality. With regard to motion, high motion frames will be considered less safe as analysis can become more complex and visibility should be considered higher for potential "errors". Regarding quality, a low quality can indicate a complex scene or other difficulties which similarly then will be considered unsafe. The user does not have to consider this behaviour specifically, but rather just set a level of safety he/she wants applied for each aspect, i.e. higher value always corresponds to higher safety. Obviously, if safety is set too high the stabilization will be less effective.

Reduction (X, Y): 0-100 (100) %

This parameter allows the full stabilization effect to be reduced to achieve a specific result exhibiting some of the original unsteadiness. In other words, by setting a value lower than 100% some of the original unsteadiness is being kept for each frame. This parameter can be set separately for horizontal (X) and vertical (Y) stabilization.

MaxAdjust: On/Off**MaxAdjust (X,Y):** 0-100 (20) pixels

By enabling Max Adjust it's possible to set a limit for the maximum adjustment allowed for the stabilized frames. The limit can be set separately for horizontal (X) and vertical (Y) adjustments.

NOTE: These parameters may also have an effect on some Output settings and will be therefore be visible on that page as well.

Splice Fix

Start/End: Disable, Manual, Auto

Frames Start/End: 0-25 (7)

Splice fixing refers to being able to correct for large frame jumps which can occur around scene cuts or what is physical splices in the original reel. This feature is based on finding the number of frames affected on each side of the scene, which can be done automatically or if necessary manually. When set manually, use the setting as a frame count number to the first frame which is considered unaffected (counting from the first respectively last frame in the scene) - e.g. 0 corresponds to disable and 1 corresponds to a correction for the first frame only, and so on.

NOTE: When a splice fix is actively processing, this feature overrides the effect of Scene Cut Transition. "Actively processing" means that the Auto mode has detected an actual jump or that the Frames setting is non-zero in Manual mode.

Scene Cut Transition

Start/End: Locked, High Safety, Medium Safety, Low Safety

Scene cut transition refers to special processing modes at start and end of the scene, trying to take into account that the temporal information is unbalanced. This basically means some form of information extrapolation is necessary, and the options are best described according to how safe they are. In the end the different safety settings can be seen as corresponding to how large a correction is allowed to be. For better or worse a Low Safety allows a larger correction than High Safety. The actual behaviour may a lot of the time be very similar for the different modes.

There is further an option to set stabilization to perform such that the start/end frame will appear as locked to the original position. The lock option can be useful when a scene is edited and will allow the edit to hold together – such scene edits may be used when one want to change the parameters within a scene for different behaviours.

NOTE: As mentioned, all this functionality is effectively disabled when splice fixing is actively processing.

Output

Mask: Disable, Specific, Follow Max Adjust

The options regarding the output are all connected to the masking of the frame/image border. The most normal mode is to use the complete or interior frame for stabilization. While the interior will become steady the image/frame borders may instead move around. The masking operation can then be used to blank these potentially moving border areas. The mask can be set up specifically for each border or can be set to follow the max adjustment set for the processor. If the Processor's Max Adjust is disabled, the actual masking will be considered as 0 pixels but the other options in output will still be taking into account (unlike when Mask is set to Disable). The complete masking operation will further be able to include the source's original blanking area (see further below).

NOTE: When Mask is set to Disable, Blanking and Zoom options have no actual effect.

Soft Border: On/Off

Make a nice soft border where the masking is performed. Only affects 1 or 2 pixels on border (at this stage).

Blanking: Disable, Specific, Auto

Left: 0-Width

Top: 0-Height

Right: 0-Width

Bottom: 0-Height

The blanking setup is used to describe the original blanking of the source or how it would be set in the source. This information will then be taken into account by the masking operation. See further the description of the Analyzer's Region of Interest, the setup and behaviour is essentially the same except there is no GUI overlay to adjust the blanking manually – the GUI overlay always and only show the Analyzer's manually set Regions of Interest.

NOTE: If Mask is set to Disable, Blanking has no effect.

NOTE: If Mask effectively is 0 pixels, then masking will be performed exactly as Blanking is setup.

Zoom: Disable, To Blanking, Fill Letter/Pillar Box, Fill Full Screen

The zoom option allows the final masked result to be zoomed according to the selected principle as follows:

- Disable No Zoom
- To Blanking Zooms to the blanking setup (for the source).
- Fill Letter/Pillar Box The masked output is centered and zoomed such that it fills either letter or pillar box whichever is reached first. The original pixel aspect ratio is maintained.

- Fill Full Screen The masked output is centered and zoomed such that it fills the full screen and if necessary clips image either at top/bottom or left/right depending on what is necessary. The original pixel aspect ratio is maintained.

NOTE: If Mask is set to Disable, Zoom has no effect.

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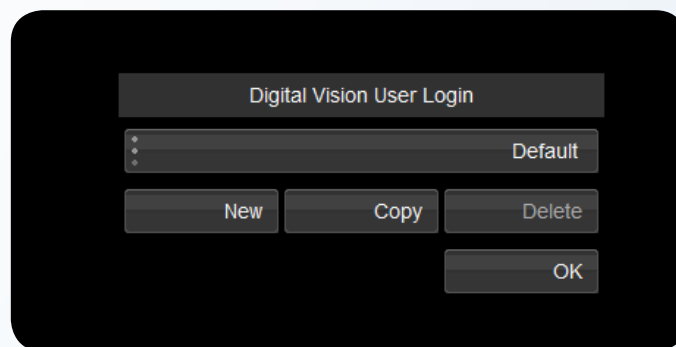
Changes to the GUI

User Login

A User Login feature has been implemented which will enable users to modify settings to suit their own requirements, and then have these settings loaded when the application is started. This will enable multiple users to use the same system with a lot more ease.

It enables users to:

- Have individual settings
- Use settings inherited from an “allUsers” folder,
- Keep settings after an application update and
- Get new settings introduced by an application
- Update on a per entry (not only per file) basis.



When the software is run the new “User Login” choice screen will appear.

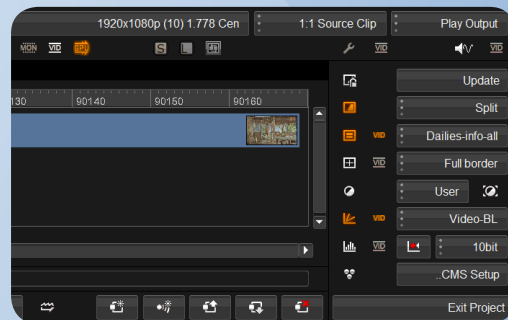
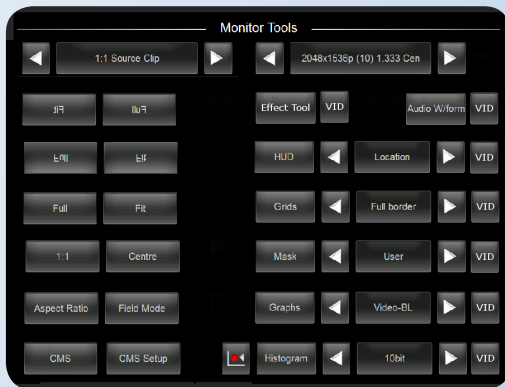
Full details about this new feature can be found in the “Install Guide” please refer to this before using this feature for the first time.

Control of Overlays on Video output

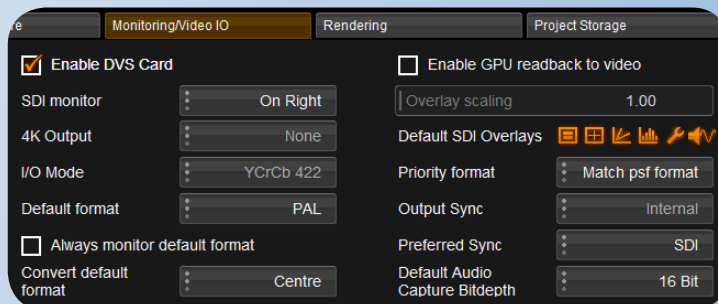
New functionality has been added to allow the user to control whether an overlay (ie HUD) is shown on the SDI output of the system.

This is for the user who is working in Dual Monitor mode and only wants the overlay on their screen and not the client screen.

Controls are available in the GUI and also on the updated Precision menu.

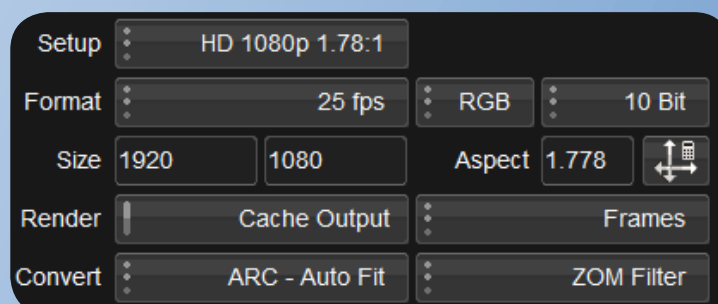


Defaults can be set in the Preferences.



Aspect Ratio calculate button

An Aspect Ratio calculate button has been added to the projects screen - also the label ARC has been added to the Auto convert values to make their functionality more apparent. The aspect ration is calculated to 6 decimal places, only 3 are displayed.



Video I/O

Atomix Video card options

- Enable HDMI output at same time as SDI
- When using HDMI output as well as SDI from the Atomix HDMI card, added “Preferred Sync” monitoring preference.
- Allow users to select SDI-3G level A or B output (for Atomix only)

Add video IO support for some missing 2K output formats

The following rasters have been added:

- 2048 x 1080psf @25,
- 2048 x 858psf @23.98,
- 2048 x 858psf @24,
- 2048 x 858p @23.98,
- 2048 x 858p @24
- 1998 x 1080psf @23.98,
- 1998 x 1080psf@24,
- 1998 x 1080p @23.98,
- 1998 x 1080p @24

Workflow Improvements

Expand the Metadata fields currently passed through in MXF files

With the new version of Avid Media Composer (6.5) clients are able to use any Avid metadata field as a source for re-linking. The following four additional fields have been added when we read / write mxf files, and will be passed through correctly.

This will help users in a file based workflow, please be aware that the data must be entered before the MXF files are created in order for it to be embedded in the MXF file.

- Camroll
- Labroll
- Soundroll
- Disk Label

Open EXR Optimisation

Optimisations have taken place to improve the speed of working in Half Float projects and when using EXR files.

Speed increase seen will vary depending on the power of your PC - for the very fastest PC's there will be minimal speed increase (EXR already plays back in excess of 60fps) but users will notice a significant drop in processor use to play the files.

Improve system setup to better support 4K project performance

Adjustments have been made to the settings to better optimise a systems for 4K playback.

- The automatic Memory pool initialisation has been changed to better use the full amount of memory in the system.
- Default player memory buffer usage has been changed to use a % of the Memory pool rather than a fixed amount, and to calculate the amount based on time rather than frames

Precision

Monitor touch menu revised to accommodate SDI overlay functionality

Add sensitivity multipliers for the precision shape control wheel

User Preferences

New user Preference have been added for the following features:

- Control for default behaviour of SDI overlays.
- Use Video I/O card as audio monitor has been moved to General and enabled by default.
- Focus change between Timeline, Mems, Library and Viewer requires a mouse click, this change was made because when renaming items, the text box would lose focus if the pen or mouse was moved outside the text box.
- Preferred sync (SDI/HDMI)
- SDI-3G level A or B output

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Changes to the GUI

Enhanced GUI dual monitor support

New functionality has been added to enhance the dual GUI monitor support.

To start with new Preferences for dual monitor support have been added in the Monitoring/Video IO tab.

Users can now choose from different pre-set layouts, with different options for the Timeline, Memories/Library and Image display. There is also an option to set the Timeline to be on the left or right side of the dual monitor configuration. The same option is also there for the SDI monitor, this will affect which way you need to move the mouse to get to the SDI screen.

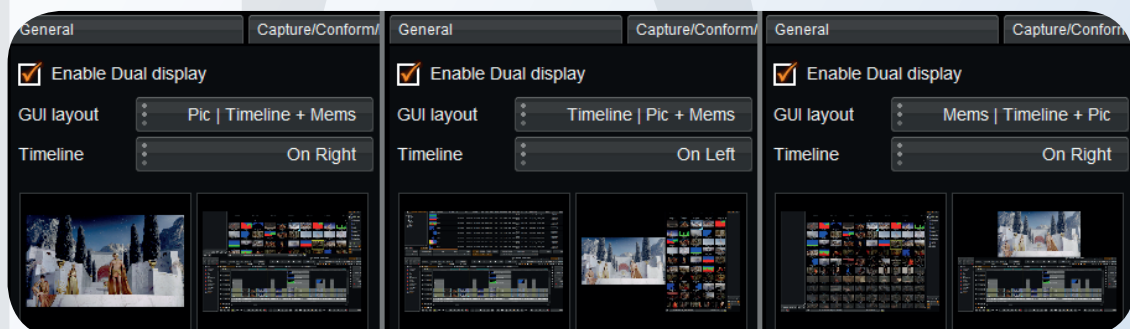
Using the new screen modes, you will now be able to do shape and key creation, using the picture on the GUI and not image on the SDI monitor.

There is a new triple height mode for the Timeline, Shots, Effects GUI, this is accessible by pressing Ctrl F2, the 3 modes will cycle through. If the Image and Timeline are on the same monitor, and it is set to full height mode, pressing TAB will hide/display the image.

With the Image on the Memories monitor TAB will toggle the image and mems as fullscreen.

F1 will toggle between the Library and Mems. On the Precision panel the Manage button on the Precision Touch panel will now switch to the library view.

There is also support for monitors of different resolutions, this would be mainly for users who have a projector connected to the DVI port that they want to run in a higher resolution than the Nucoda GUI monitor.

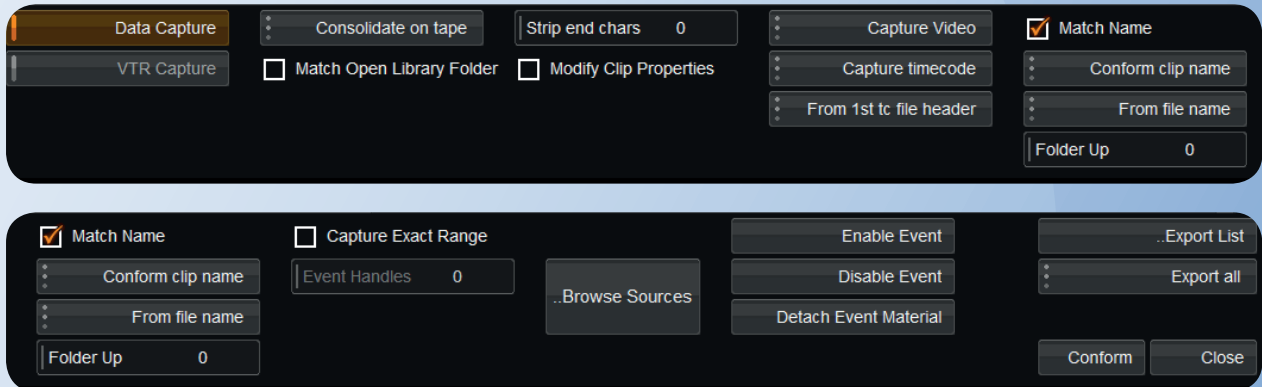


Conform

A new option has been added to the Conform GUI. The “Strip end Characters” option can be used to remove up to 9 of the last characters from a “tape” or “clip” name prior to the search for the file.

The name will not update in the conform list based on the setting.
An associated tick box will apply the modified name to the clip in the library.

The buttons in the conform dialog tool have been rearranged in a more logical way. Pressing “Conform” will no longer conform and exit to the library, it will remain in the conform view. To exit to the library view, press the close button.



GPU Direct (DVS Atomix only)

As an additional enhancement to the monitoring features above we have also implemented GPU Direct in this version.

This feature is still not 100% finished. It has been turned off by default. Users who wish to test can turn it on with the following item in the GeneralPrefs set to True
`enableGpuDirect True`

This is an optimised pipeline for the transfer of video from the Nvidia GPU to the DVS Atomix video card. GPU direct utilises shared pinned system memory, removing a copy to the system memory and thus making the primary video output from the system more responsive. We have measured the delay and it is now only 4 frames, down from 9 frames before.

This improves the response of the cursor and shape overlays on the SDI monitor output. It also improves the responsiveness of the image while grading.

NOTE: This is only available on the Atomix video card. The Centaurus card has been EOL'd by DVS and does not support GPU Direct. GPU Direct is also only supported by the Quadro family of Nvidia cards and is not supported on GTX cards.

Please see the Known Issues in the release notes.

Workflow enhancements

CMS Improvements

Increase number of CMS files held in memory. In previous versions the number of CMS files (LUT's or ODT's) held in memory was limited to 5. This has now been increased to 30 and a Pref "cmsCacheSize" has been added in the Gen Prefs file to allow users to override this value. An optimisation has also been added to allow projects containing a large amount of CMS files to open more quickly.

Matte-Link

When using Pan & Scan as input effect, this feature links and controls the scaling and position of all Mattes and Shapes, affecting all layers in the stack. The link extends to adjustment layers on tracks above the clip.

The Pan & Scan tool can be used to Pan, Tilt, or Scale the input image, and all shapes and mattes in the effects stack and adjustment effects will be positioned and scaled accordingly.

This feature also supports multiple output resolutions.

AAF Improvements

Avid Add Edits are now supported

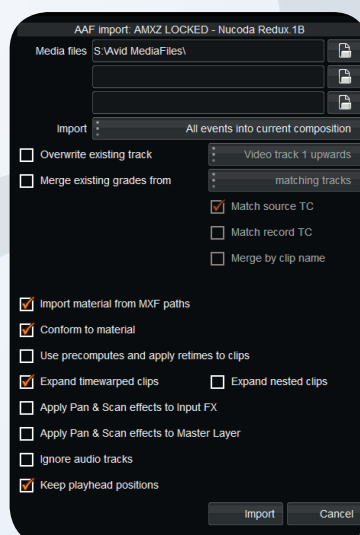
New button for "expand nests" only available when Expand Timewarps are selected.

Use precomputes and Expand Timewarps are mutually exclusive

Freez Frames must be rendered for Precomputes workflow

If timewarps are the same length as the clip (such as 50i to 25P) conversions

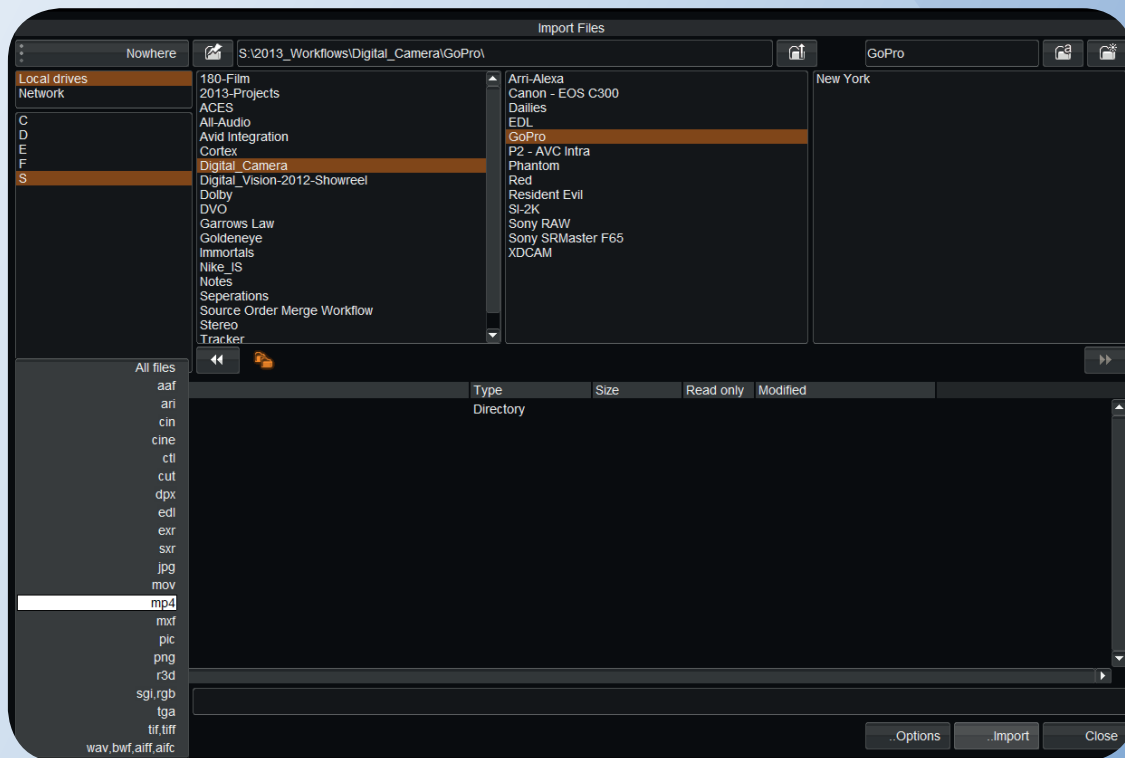
or speed ramps, they will not be expanded.



Import and Export

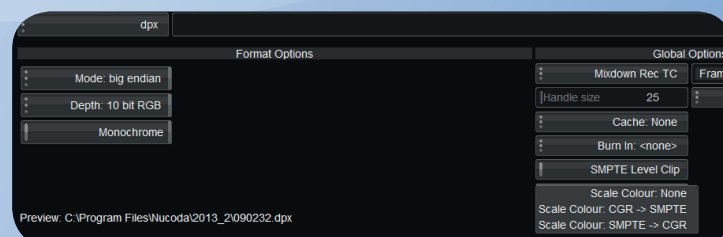
GoPro (MP4) import

Support has been added for the import of GoPro (MP4) files. This includes the addition of an MP4 filter in the file and folder importers. (Note: This is only for GoPro MP4 and is not a generic MP4 importer)



Function to change colour scaling during file export

This new function added to the “Export Media” dialogue allows users to select colour scaling to be applied during file export. There are CGR->SMPTE and a SMPTE->CGR modes.



Function to tag DPX exports as LOG or LIN during file export

When exporting DPX frames from the application they are tagged in the metadata with the image type (this is based on the application project settings). Now it is possible from both the GUI and from the CLI to override this and tag the images as Log, Linear, or SMPTE



Precision

Use the Manage button on the Precision Touch panel to switch to library in GUI

New Precision Tool Layouts for DVO Chroma and Channel Align tool.

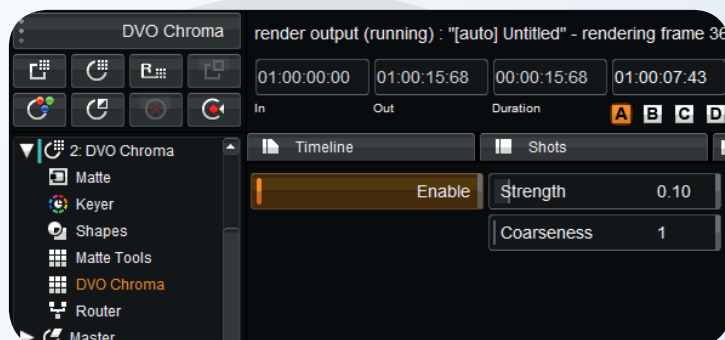
New Tools

DVO Chroma (DVO Camera, DVO Restore and DVO Video)

This new tool will fix chromatic aberration flaws of lenses particularly seen on high contrast items or on the edges of a film frame.

Will also fix chroma bleeding in video often seen using early video cameras and various colour sub-sampling techniques.

Controls:



Strength :

Higher value will process harder and can take care of larger colour mismatches.

Coarseness :

If very large bleeding occurs this may be risen to a higher value, use with caution.

Channel Align

A new tool to be found in the Effects section of the toolbox

This tool can be used to fix a common problem with older video where the YC channels don't align. It can be switched between YUV and RGB mode and used to align RGB or UYV colour channels.

For YC Alignment:

Set the Y channel value,

For C Channel set the U and V channels to the same value

The tool also includes a U and V Swap, and a YUV legalizer for both HD (rec 709) or SD (rec 601)

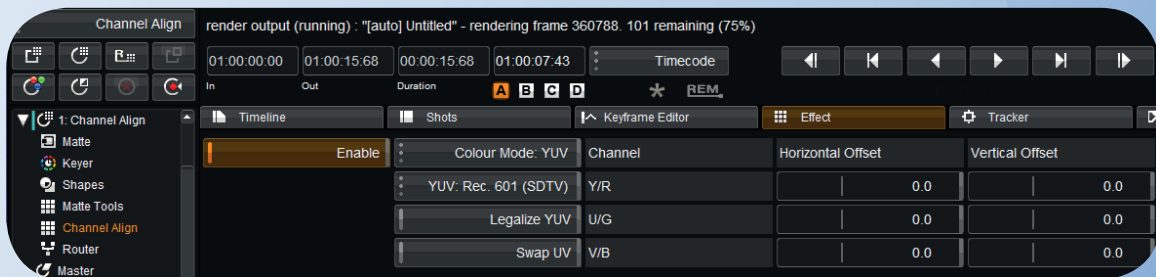


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