



grass valley
A **BELDEN** BRAND

DESKTOP EDITING

User Guide

2018-09-21

Information and Notices

Copyright and Disclaimer

Copyright protection claimed includes all forms and matters of copyrightable material and information now allowed by statutory or judicial law or hereinafter granted, including without limitation, material generated from the software programs which are displayed on the screen such as icons, screen display looks etc.

Information in this manual and software are subject to change without notice and does not represent a commitment on the part of Grass Valley. The software described in this manual is furnished under a license agreement and can not be reproduced or copied in any manner without prior agreement with Grass Valley, or their authorized agents.

Reproduction or disassembly of embedded computer programs or algorithms prohibited.

No part of this publication can be transmitted or reproduced in any form or by any means, electronic or mechanical, including photocopy, recording or any information storage and retrieval system, without permission being granted, in writing, by the publishers or their authorized agents.

Grass Valley operates a policy of continuous improvement and development. Grass Valley reserves the right to make changes and improvements to any of the products described in this document without prior notice.

Contact Details

Customer Support

For details of our Regional Customer Support Offices please visit the Grass Valley web site and navigate to Support/Customer Support Contacts.

<http://www.grassvalley.com>

Customers with a support contract should call their personalized number, which can be found in their contract, and be ready to provide their contract number and details.

Conventions Used

Text

<Text>	indicates a specific key press on the keyboard.
NN/nn	indicates a value entered on a numeric keypad.
Text/text	indicates either an application menu function or a Windows/Grass Valley installation/system setting.

Symbols



See: Reference to items in other documents.



Notes: System, software and workflow points to consider and remember.



Tips: Useful hints and advice when undertaking tasks.

Contents

1. Desktop Overview	1
1.1 About the Desktop	1
1.2 Using the Application Bar	2
1.2.1 Enabling/Disabling the Desktop	2
1.2.2 Enabling/Disabling Video and Audio Output	2
1.3 Using the Media Bins	3
1.3.1 Changing Bin Display Views	3
1.3.2 Adjusting the Bin Columns	5
1.3.3 Sorting Data in Columns	7
1.3.4 Folder and Media Menus	8
2. Introduction to Floating Clips	9
2.1 About Floating Clips	9
2.1.1 Creating a Floating Clip on the Desktop	9
2.1.2 Using the Desktop Bin or Windows File Explorer	10
2.1.3 Floating Clips Associated with a Key Channel	10
2.2 Managing Floating Clips	12
2.2.1 Resizing a Floating Clip	12
2.2.2 Repositioning a Floating Clip	12
2.2.3 Renaming a Floating Clip	12
2.2.4 Copying a Floating Clip	12
2.2.5 Toggling the Timecode Display	12
2.2.6 Scaling Audio and Video Tracks	13
2.2.7 Revealing the Hidden Audio Menus	15
2.2.8 Zooming-in and Zooming-out on the Floating Clip Timeline	16
2.2.9 Selecting Multiple Floating Clips	17
2.2.10 Transferring a Floating Clip into an Application	17
2.2.11 Deleting a Floating Clip	18
2.3 Using the More Options Menu	18
2.3.1 Edit	19
2.3.2 Replace	19
2.3.3 Swap	19
2.3.4 Fetch Waveforms	19
2.3.5 Publish	19
2.3.6 Repeat	19
2.3.7 Respeed	19
2.3.8 Localize	20
2.3.9 Audio Stretch	20
2.3.10 Audio Repitch	20
2.3.11 Scene Detect	20
2.3.12 Source Order	21
2.3.13 High Bit Rate (HBR)	21
2.3.14 Make Stereo Clip	21
2.3.15 Copy Settings	22
2.3.16 Add Auxiliary Clips	23
2.3.17 Split VL/VR (Stereo 3D Option)	23
2.3.18 Flatten	23
2.3.19 Commit	24
2.3.20 Swap F1/F2 (Interlaced Clips Only)	25
2.3.21 Relinking Soft-mounted Clips	25
3. Working with the Floating Clip Controls	26
3.1 Using the Floating Clip Controls	26
3.1.1 Jog Control	26
3.1.2 Shuttle Control	27
3.1.3 Play/Pause Controls	27
3.1.4 Marking a Section	27
3.2 Combining Floating Clips	33

3.2.1	Creating a Sequence	33
3.2.2	Adding a Clip as a Key	36
3.3	Using the Clip Logging Function	37
3.3.1	Overview	37
3.3.2	Viewing Existing Events	37
3.3.3	Logging New Events	38
3.3.4	Saving a Clip Log	39
3.3.5	Deleting a Clip Log	39
3.4	Using the Respeed Function	40
3.4.1	Changing the Speed of a Floating Clip	40
3.4.2	Choosing a Respeed Mode	42
3.4.3	Selecting a Respeed Interpolation Method	42
3.4.4	Source Scan Conversion and Render Format Options	44
3.4.5	Reverse Checkbox	45
3.4.6	Audio Respeed Options	45
3.4.7	Using Keyframes in a Profiled Respeed	45
3.4.8	Render and Save a Respeed	53
3.5	Detecting Scene Changes in a Floating Clip	54
4.	Stereo Floating Clips	56
4.1	Stereo 3D Media	56
4.2	Metadata Display on Clip Segment	56
4.3	Using the Stereo Video Window Display	57
4.3.1	Combining Eyes on the Desktop to Create a Stereo Clip	58
4.3.2	Make Stereo Clip	59
4.3.3	Split VL/VR Tracks via Desktop	60
4.3.4	Swap Eyes on All Tracks via the Desktop	61
5.	Working with the Floating Clip Audio Track Controls	62
5.1	Hidden Audio Menu Options	62
5.1.1	Reveal Audio Level Controls	62
5.1.2	Reveal Audio Channel Controls	63
5.2	Setting Audio Levels	63
5.2.1	Using the Hidden Audio Levels Menu	63
5.2.2	Assign Audio Channels	65
5.2.3	Too Few or Too Many Channels	67
5.2.4	Enable/Disable Audio Track Filter Boxes	67
5.2.5	Audio Stretch	68
5.2.6	Audio Repitch	69
6.	Managing Clips	70
6.1	Publishing Clips from the Desktop	70
6.1.1	Why Publish Clips?	70
6.1.2	Publishing to sQ Server	70
6.1.3	Publishing to a Placeholder	71
6.2	Localizing a Clip	73
6.2.1	Why Localize Clips?	73
6.2.2	What Happens During Localization?	73
6.2.3	Setting Tail Frames	73
6.2.4	Localizing a Floating Clip	73
6.3	Saving a Floating Clip	74
6.3.1	Default Python Scripted Storage Functions	74

1. Desktop Overview

1.1 About the Desktop

The desktop provides a blank area that can be used to preview material, mark in and out points and assemble shots before editing, publishing or inserting into a playlist ready for playing-out. Editing can be performed on the desktop with or without other applications being open, for example, **Edit** or **MLT FX**, etc.

Clips can be taken from any available bin (sQ Server, clips, Media, etc.) and placed directly onto the desktop area. Clips placed on the desktop are referred to as **Floating Clips**, and can be assembled into sequences, dropped into other applications, or published back to the server.

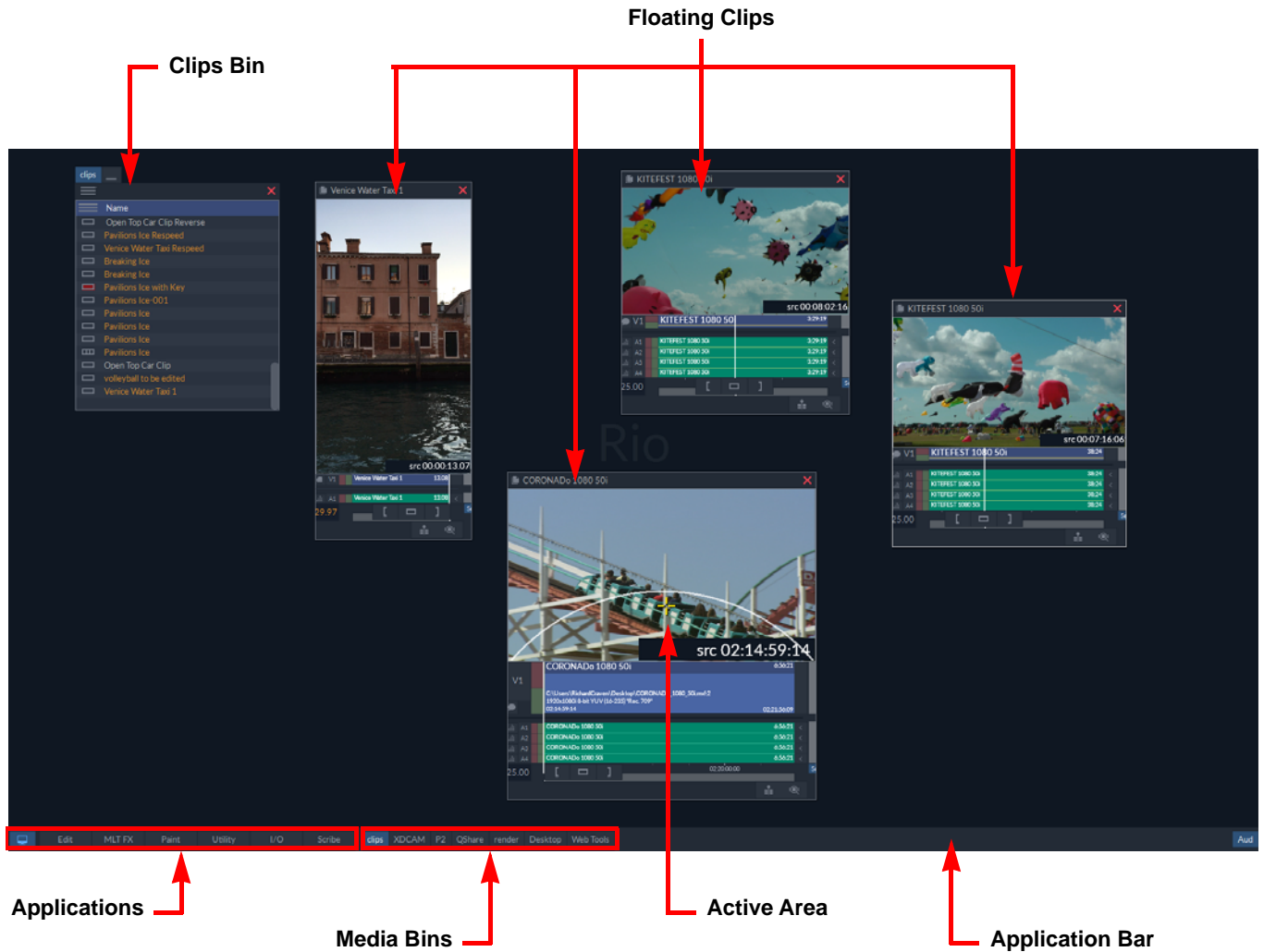


Figure 1 Overview of the Desktop

1.2 Using the Application Bar

The Application Bar runs along the bottom of the interface and displays applications and media bins. Available applications and media bins vary depending on the software or product in use.

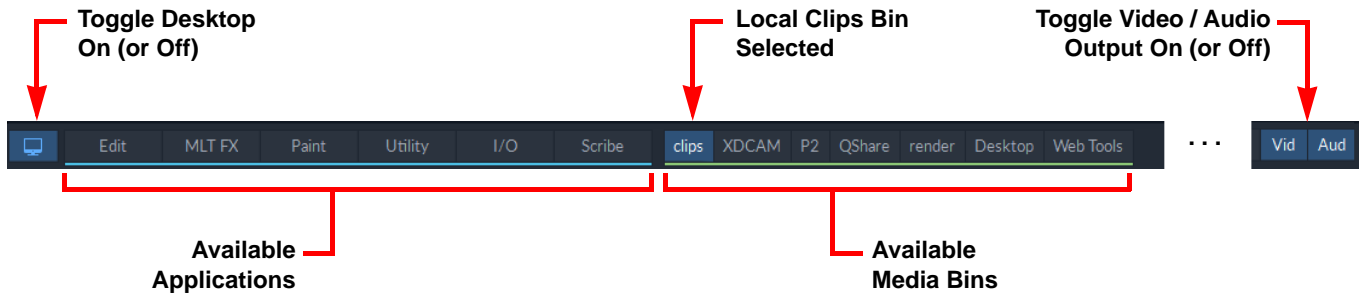


Figure 2 Desktop Application Bar

The Application Bar also includes buttons to

- Enable or disable the desktop
- Enable or disable the video output (useful to make the output black while previewing the video in the user interface.)
- Enable or disable the audio output.

1.2.1 Enabling/Disabling the Desktop

Press the button at the left of the Application Bar to toggle the desktop contents on and off .

In the MLT FX application, pressing the button also toggles the size of the timeline edit window, in addition to hiding the desktop contents.

1.2.2 Enabling/Disabling Video and Audio Output

At the right of the Application Bar (depending on the configuration) a **Vid** button and an **Aud** button control the video and audio output. If a video card is installed, when the **Vid** button is enabled it highlights and video is output to a display monitor. The output to an external video display can be toggled on or off.

If the **Aud** button is enabled it highlights and audio is output to external speakers. To enable/disable the video or audio output press either the **Vid** and/or **Aud** button as required.

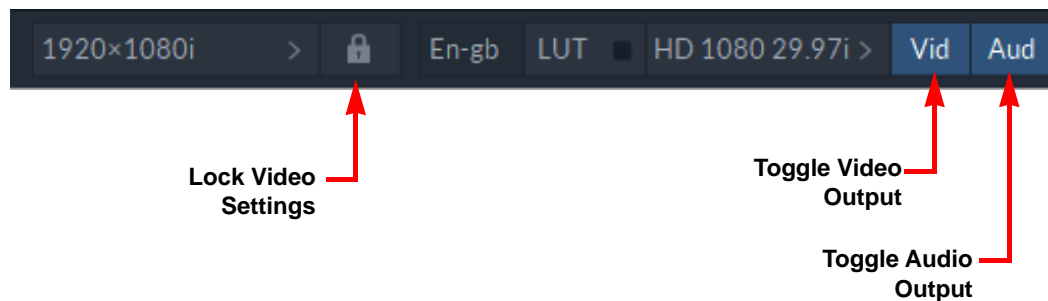


Figure 3 Desktop Video and Audio Output



Enabling/disabling the Vid and/or Aud buttons has no effect on publishing or saving a clip.

1.3 Using the Media Bins

Media bins are used to access sQ Server (if applicable), local and network media libraries. Bins can be used to search for, preview and load material onto the desktop or into available applications. Media can also be saved or published back into the bins.

To open a bin press the desired tab in the media bins section of the Application Bar, for example:

- **Clips:** Displays local video and audio clips
- **Server:** Displays all material stored on a media server
- **Desktop:** Provides access to media located on external devices or network locations accessible from a desktop file browser.

Bin availability depends on the Rio application currently in use and also whether the platform is standalone, connected to a server or other connected system.

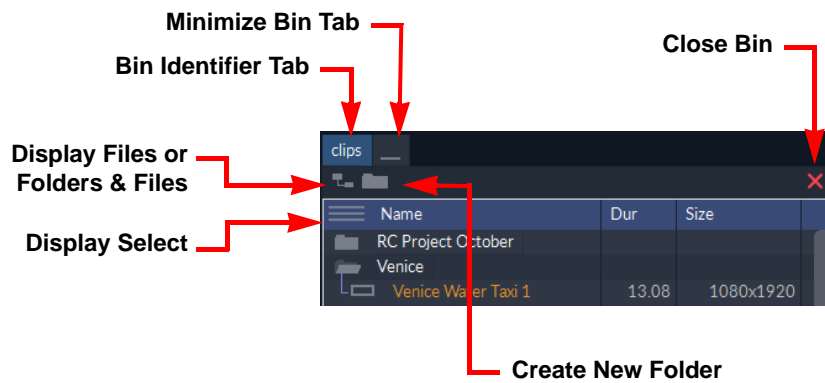





Figure 4 Clips Bin Controls

Minimize a bin by pressing the minimize bin tab  at the top-left of the bin. Pressing the <Esc> key shows or hides all minimized bins. To close a bin press  at the top-right of the bin.

1.3.1 Changing Bin Display Views

Clips can be displayed in a bin using several different views, as follows:

- Press the **Display Select** icon  to switch the view between clip metadata or clip miniatures.
- Alternatively, press the **Display Select** icon and drag up or down to select a combination view of metadata and miniatures from the slider menu:

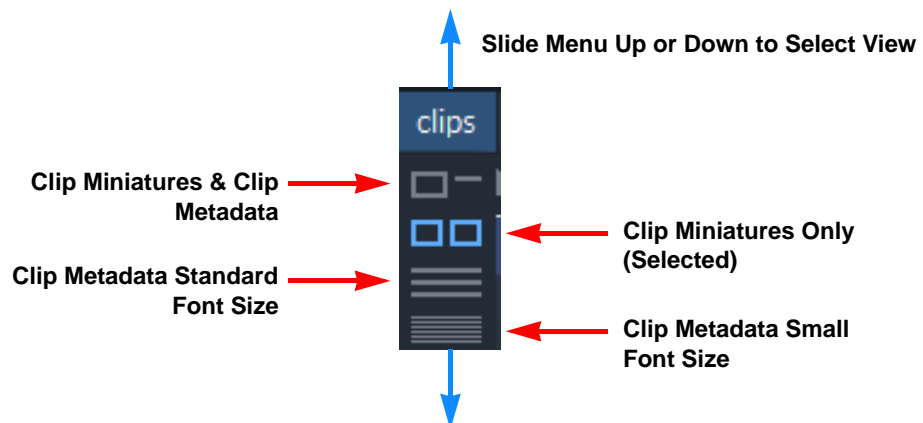


Figure 5 Bin Display Selection

Clips can be displayed using a folder structure or as a list of flat files by pressing either the Folder or Files icon respectively. To add a folder to the bin, press the New Folder icon.

Folder Icon:



Folder view:

Name	Dur
RC Project October	
Venice	
Volleyball	
RC Test Folder	
volleyball to be edited	23:22:00
volleyball to be edited	9:46:14

Files Icon:



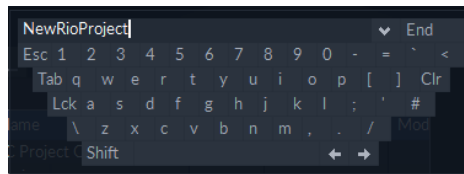
File view:

Name	Dur
file1	1:00:00
NewFile2	1:00:00
volleyball to be edited	23:22:00
volleyball to be edited	23:22:00

New Folder Icon:



Create new folder; opens a soft keyboard to enter the folder name:



To resize a bin hover in the bottom right corner until a triangle displays. Press and drag the triangle until the bin reaches the desired size.

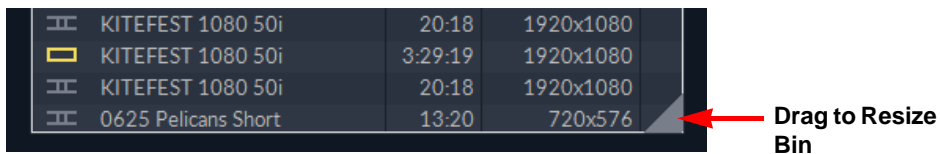


Figure 6 Resizing the Bin

Re-position a bin by pressing any blank area within the bin and then dragging it to a new position.

Lock a bin into position on the desktop by holding down <Ctrl> and pressing the resize icon. A gray dot appears in the bottom-right corner to indicate that the bin is locked.

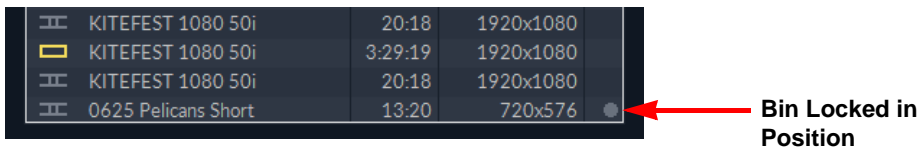


Figure 7 Locking the Bin Position

Press the gray dot again to unlock.

1.3.2 Adjusting the Bin Columns

Adjust the columns displayed in the bin using the **Columns** menu. Open the menu by hovering the cursor to the right, outside the right-most column of the bin, then pressing **Columns** to display the list of active and inactive columns.

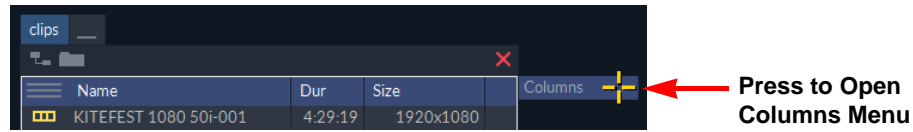


Figure 8 Bin Columns Menu

Active columns, currently displayed in the bin, are highlighted in blue; available but inactive columns are shown with a gray background. Either press an active column to remove from the bin or press an inactive column to include it in the bin. The background color of the column name changes accordingly.

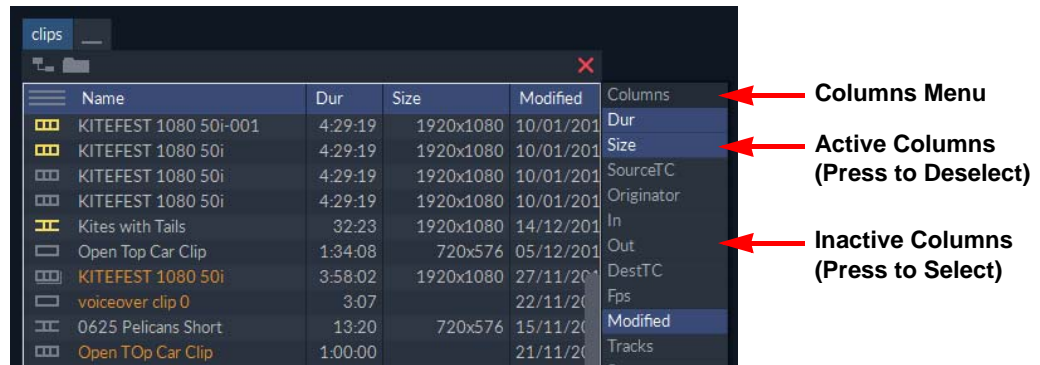


Figure 9 Selecting Columns to Display

1.3.2.1 Changing the Displayed Order of the Bin Columns

The order in which columns are displayed in the bin can be changed by dragging a column heading horizontally to a new position.



The position of the Name column is fixed and cannot be moved.

1.3.2.2 Searching or Filtering Data in a Column

Any column can be used to define a search (or filter) for specific data contained in that column. For example, to search by clip name:

1. Select the **Name** column heading.

A soft keyboard is displayed.

2. Start to enter the name of the required clip name using either the soft or external keyboard.

The search is not case-sensitive.

The data displayed in the column is automatically filtered in real-time to match the entered text string. The search string also replaces the column title.

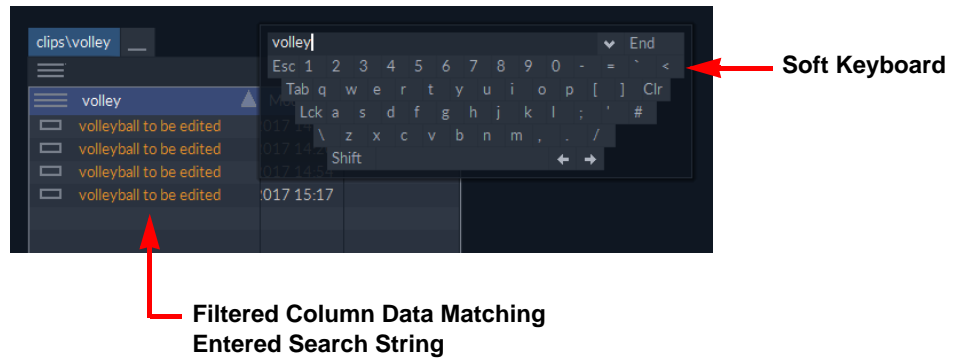


Figure 10 Searching the Clips Bin

3. Press **End** or **<Enter>** to complete the search.
4. Use additional columns to filter the bin content further until the desired clip(s) are located.

To clear a search filter from a single column:

- Press the filtered column heading and then **Clr** on the soft keyboard.

To clear all search filters applied to a bin:

- Double-click on the name tab of the bin (e.g. **clips**).

1.3.2.3 Using Wildcard Characters in Filters

The following wildcard characters can be used to enhance the search process:

Wildcard	Description
&	When typing two or more keywords separated by an ampersand (&) the search looks for corresponding words either of which display in the title. For example, typing PRESIDENT & AIRPORT finds <i>President Arrives at Airport</i> and also finds <i>London's Third Airport</i> .
?	? is a single character wildcard, for example ?ART finds <i>Cart</i> but not <i>Art</i> or <i>Start</i> .
*	The asterisk (*) is a multiple character wildcard, for example *ART finds <i>Art</i> , <i>Cart</i> , <i>Start</i> , etc. Asterisk (*) wildcards can be used both before and after characters, for example *Art* finds <i>Start</i> , <i>Starter</i> , <i>Party</i> , etc.

1.3.2.4 Filtering on Dates and Date Ranges

Columns containing dates and times, for example the **Modified** column, can be filtered to show data for a specific date or within a date range.

To filter a column to match material for a specific date:

1. Press anywhere in the column header (except at the far right-hand side.)

This displays a calendar to the right of the column, with the current date highlighted in blue. If necessary, use the left and right arrows to go to an earlier or future date.

2. Click the desired date on which to filter.

The column contents automatically change to show material matching that specific date.

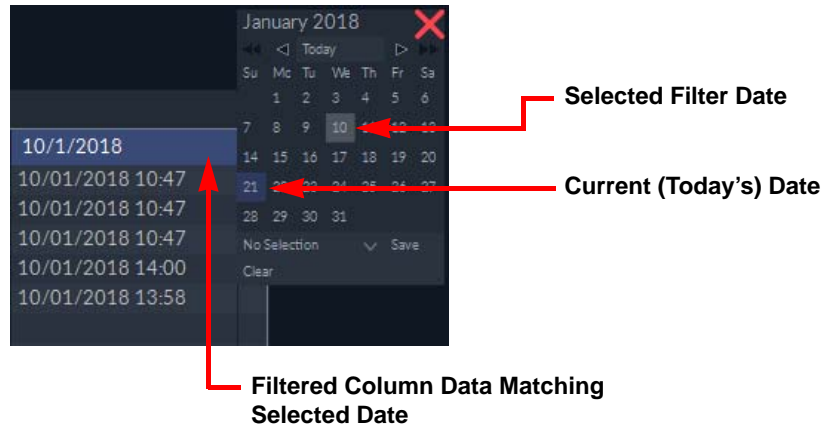


Figure 11 Searching the Bin by Date

To filter a column for material matching a date range:

1. Press anywhere in the column header (except at the far right-hand side.)

This displays a calendar to the right of the column, with the current date highlighted in blue. If necessary, use the left and right arrows to go to an earlier or future date.

2. Click the earliest date of the range on which to filter.
3. Click the most recent date of the range on which to filter.

The column contents automatically change to show material matching the specified date range.

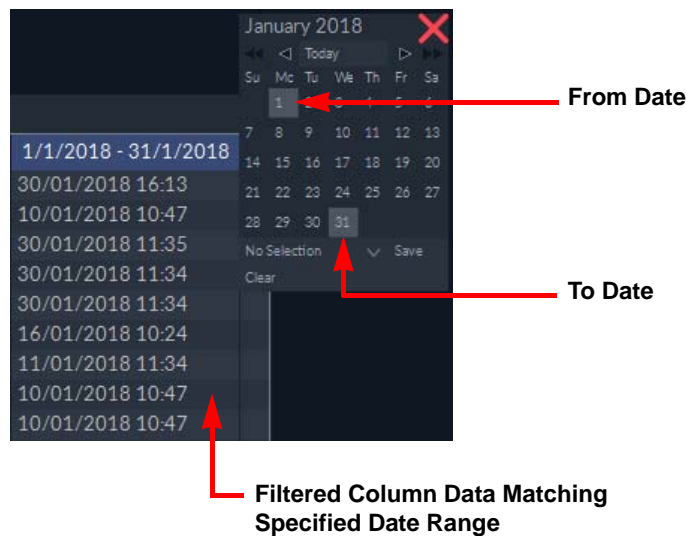


Figure 12 Searching by Date Range

1.3.3 Sorting Data in Columns

Each column heading includes a sort key to change the order data is displayed in the column. To sort data in a column, hover over the right-hand side of the column header and activate the sort key as follows:



Press the sort key once to sort in ascending alphabetic, numeric or date/time order, lowest to high, for example, A - Z, 0 - 999..., earliest date - most recent date, etc.



Press the sort key again to sort in descending alphabetic, numeric or date/time order, highest to low, for example: Z - A, 999... - 0, most recent date - earliest date, etc.



Simply cycle through the sort keys to change the data order displayed in the selected column.

1.3.4 Folder and Media Menus

Pressing on a media title or media folder in the Clips Bin displays a menu listing a number of options that can be executed on the selected item.

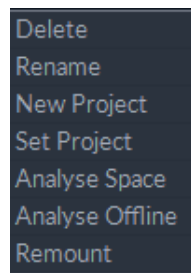


Figure 13 Project Folder Menu Options

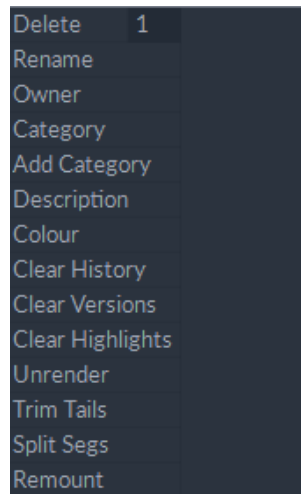


Figure 14 Media Menu Options



For further information about the various bins available and their full functions see the *Media Bins Guide*.

2. Introduction to Floating Clips

2.1 About Floating Clips

A **Floating Clip** is a miniature editor that allows the assembly and editing of clips on the desktop. Each floating clip consists of a video window, a timeline and a set of associated editing tools.



Figure 15 Overview of a Floating Clip Panel

2.1.1 Creating a Floating Clip on the Desktop

Floating clips are created by placing any clip onto the desktop area, using one of the following methods:

- Drag a clip from a bin and drop onto an empty area of the desktop.

When clips are dragged and dropped into or out of a bin, the current frame position is retained (indicated by the vertical timeline cursor).

- Import a clip from the Desktop bin or a Windows File Explorer by dragging and dropping onto the desktop.
- Lift, cut, or copy a selection from a timeline clip or floating clip and place on the desktop.
- Copy an entire Floating Clip and place in a new position on the desktop.

2.1.2 Using the Desktop Bin or Windows File Explorer

If media is required that is not held within the application workspace, use the Desktop Bin to access the network directories of the platform.

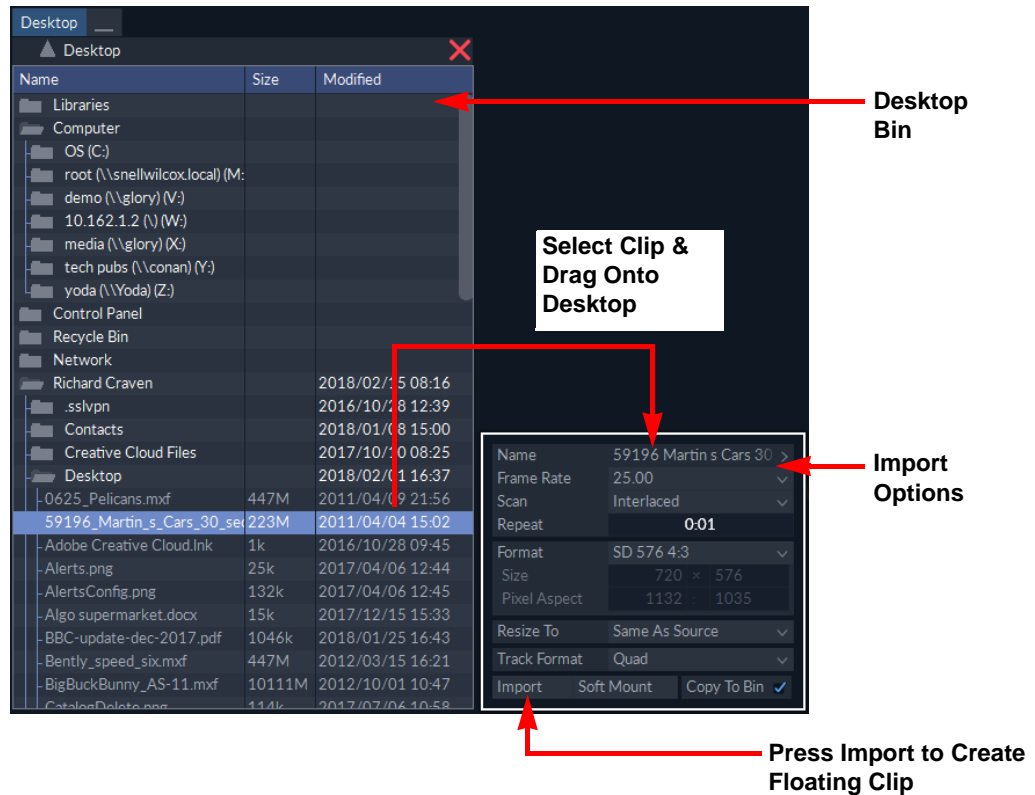



Figure 16 Using the Desktop Bin

Media files from the Desktop Bin can be imported by dragging them from the bin and dropping them onto the desktop.


1. Locate the desired file in the Desktop Bin.
2. Press on the file name and drag to the desktop area.
A pop-up appears providing options to apply to the clip.
3. Set the required options then press **Import**.
4. The imported clip displays as a Floating Clip on the desktop.

Alternatively, press the MS Windows **Start** button  to access the MS Windows File Explorer and drag the desired file directly from Windows onto the Desktop.



See the **I/O User Guide** for more information about importing media.

2.1.3 Floating Clips Associated with a Key Channel

Any clips in the clips bin associated with a key channel are indicated by adding a red background to the icon: 

When a clip with an associated key is dropped onto the desktop area, a **Key** tab is displayed at the top left of the Floating Clip.

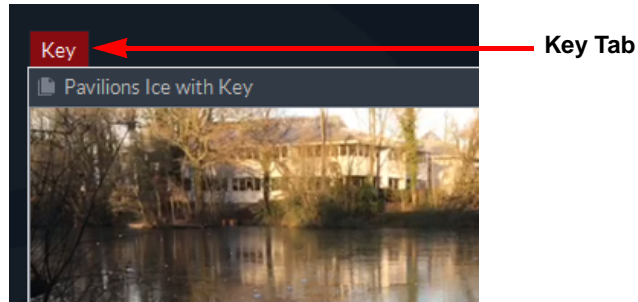


Figure 17 Floating Clip Associated with a Key Channel

To view the key channel separately from the video, press and drag the **Key** tab to an empty part of the desktop. This creates a copy of the key channel as a Floating Clip.

To remove the key channel from the clip:

- Hold down <Ctrl> and drag the **Key** tab to an empty space on the Desktop.

The key is separated from the clip but remains on the Desktop for further selection.

2.2 Managing Floating Clips

2.2.1 Resizing a Floating Clip

To resize a Floating Clip hover in the bottom-right corner until a triangle appears. Press and drag the triangle until the clip reaches the required size.

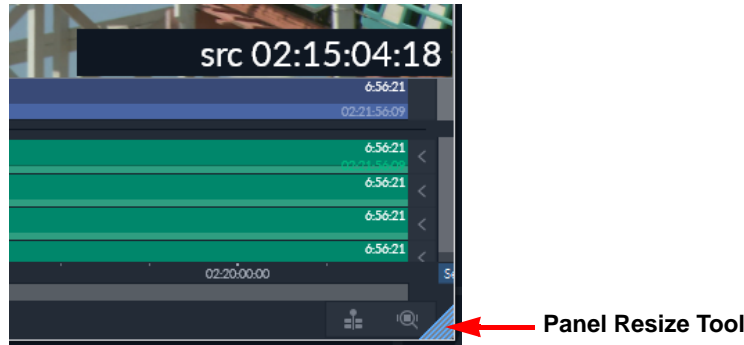


Figure 18 Resizing a Floating Clip

To set the default size for all subsequent Floating Clips taken from the Clips Bin or Server Bin, hold down <Ctrl> when dragging the Floating Clip window to the desired size. Any clip dragged from a bin from this point will now have the same default size.

2.2.2 Repositioning a Floating Clip

To reposition a Floating Clip:

1. Press and hold on the clip's Video Window in any area outside the Active Area.
2. Drag the Floating Clip to any new position on the desktop.


2.2.3 Renaming a Floating Clip

To rename a Floating Clip:

1. Press on the clip name in the top-left of the Video Window.
2. A soft keyboard is displayed. Use this or the external keyboard to edit the name.
3. Press **End** or <Enter> to confirm the change.

2.2.4 Copying a Floating Clip

The copy tool is located in the top-left corner of the Floating Clip.

To copy a floating clip, press the copy icon  and drag the copied floating clip to a new position on the desktop. This method can be used to create one or multiple copies of a floating clip.

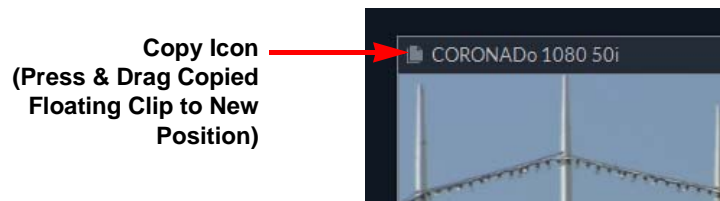



Figure 19 Copying a Floating Clip

2.2.5 Toggling the Timecode Display

To display the Floating Clip timecode, hover in the bottom right area of the Video Window (outside the active area) until the timecode toggle icon  is displayed. Press the icon to display the source (**src**) timecode for that clip.

To toggle through the available timecode displays, press in the area directly above the display to show a preview of the next available timecode; press again to change the displayed timecode.

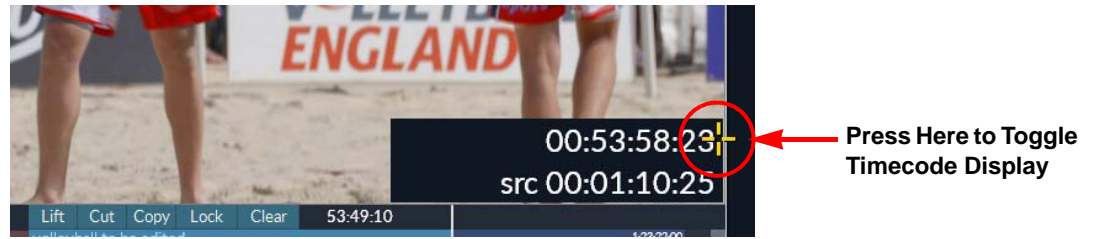


Figure 20 Toggling the Timecode Display

The following timecode displays are available:

src 10:00:11:23	Source Timecode
00:00:11:23	Destination Timecode
tod 10:56:41:20	Time of Day Timecode

Hold down the <Shift> key and press the timecode toggle icon to display two different timecodes simultaneously (for example, Source and Destination). Other possible timecodes (such as Keycode) can be made available by first activating them in the **Clips** section of the <F1> Configuration Window.

2.2.6 Scaling Audio and Video Tracks

Several methods are available to scale the video and audio tracks included with a Floating Clip.

The track filter boxes to the left of the video and audio tracks (for example, **V1**, **A1**, etc.) can be used as handles to expand or reduce the vertical scale of the video and audio tracks linked to the Floating Clip. Click on a track filter box and drag up or down to resize (or scale) the corresponding track.



Figure 21 Scaling Audio & Video Tracks in a Floating Clip Using the Track Filters

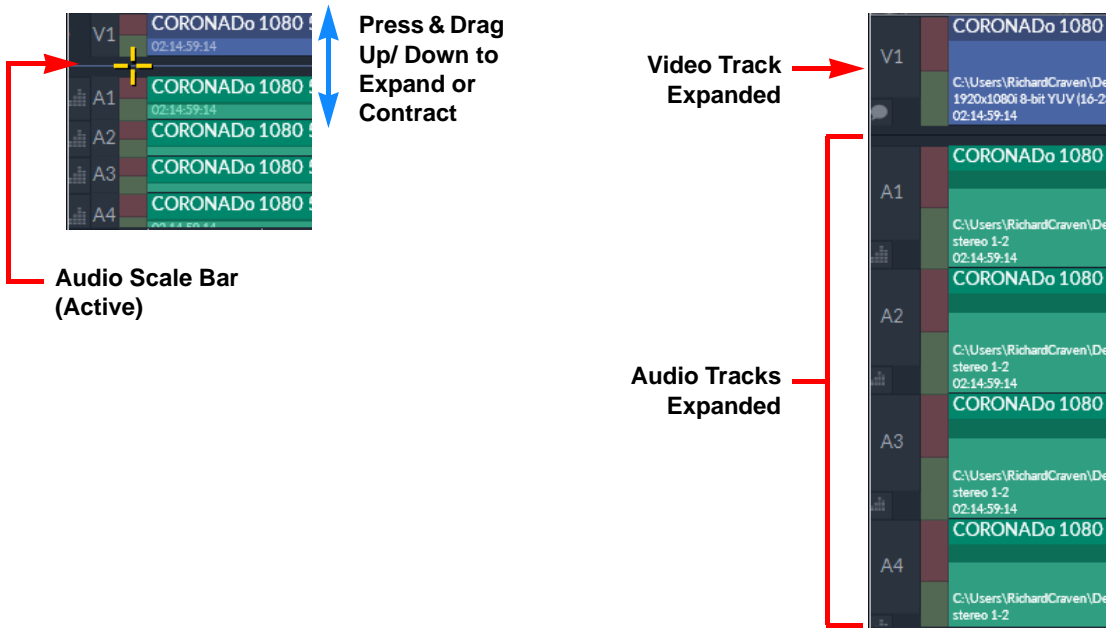


Figure 22 Scaling Audio & Video Tracks in a Floating Clip Using the Audio Scale Bar

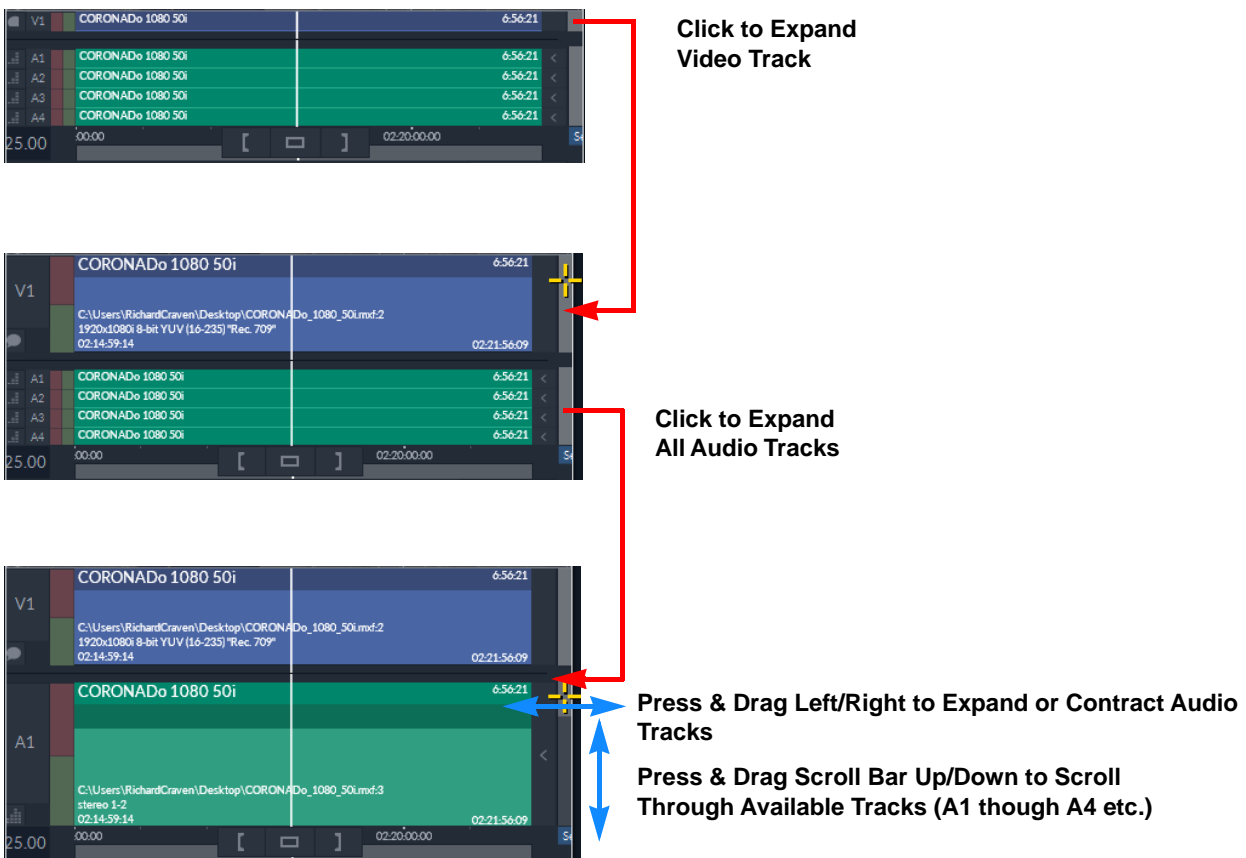


Figure 23 Scaling Audio & Video Tracks in a Floating Clip Using the Scroll Bars

2.2.7 Revealing the Hidden Audio Menus

To reveal additional audio controls, press and drag one of the open icons at the top-right of the video and audio track and drag to the left.

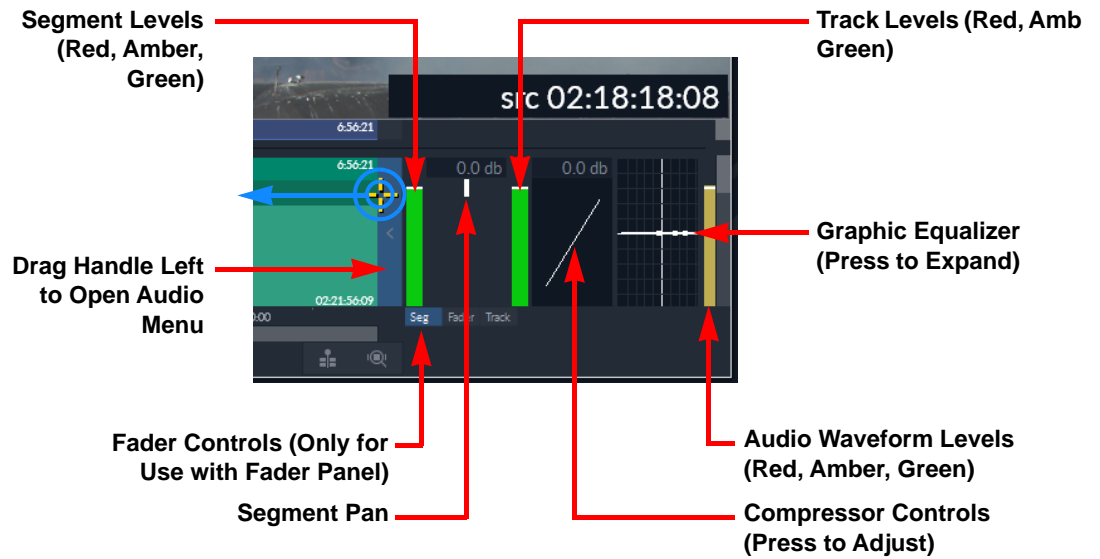


Figure 24 Hidden Audio Levels Menu

Similarly, press on any track filter box (e.g. V1, A1 etc.) and drag to the right to reveal additional audio input/output controls and options.

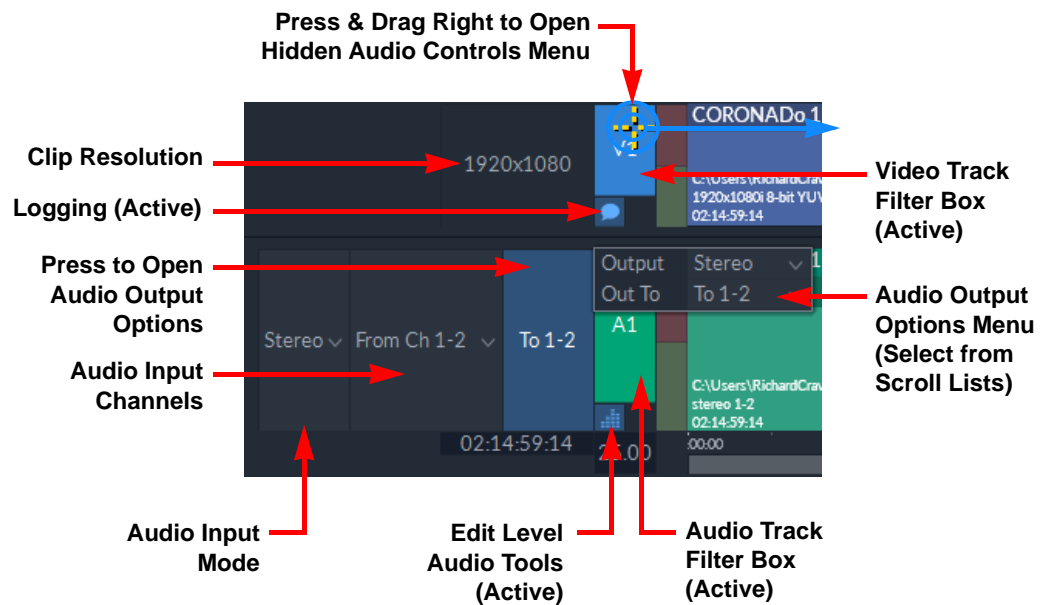


Figure 25 Hidden Audio Controls Menu

Drag the track filter box back to the left to re-hide the controls.

See Chapter 5. *Working with the Floating Clip Audio Track Controls* on page 62 for more information.

2.2.8 Zooming-in and Zooming-out on the Floating Clip Timeline

To zoom in on the Floating Clip timeline:

1. Place the cursor on the gray bar directly below the timeline.

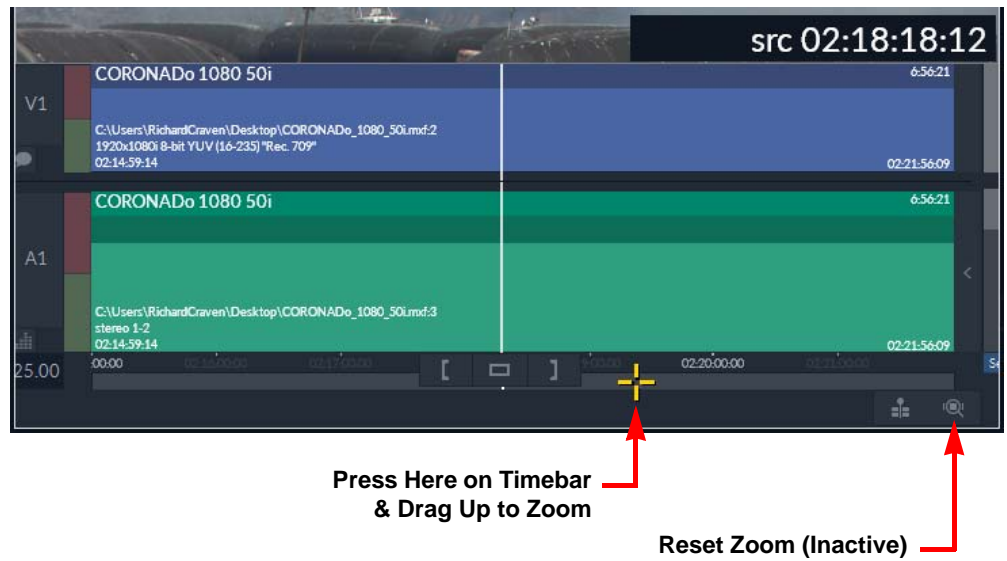



Figure 26 Zooming-in on a Floating Clip Timeline

2. Press and drag up to zoom in.

The gray bar decreases in size to show that the timeline is zoomed-in and the Reset Zoom box  is activated.

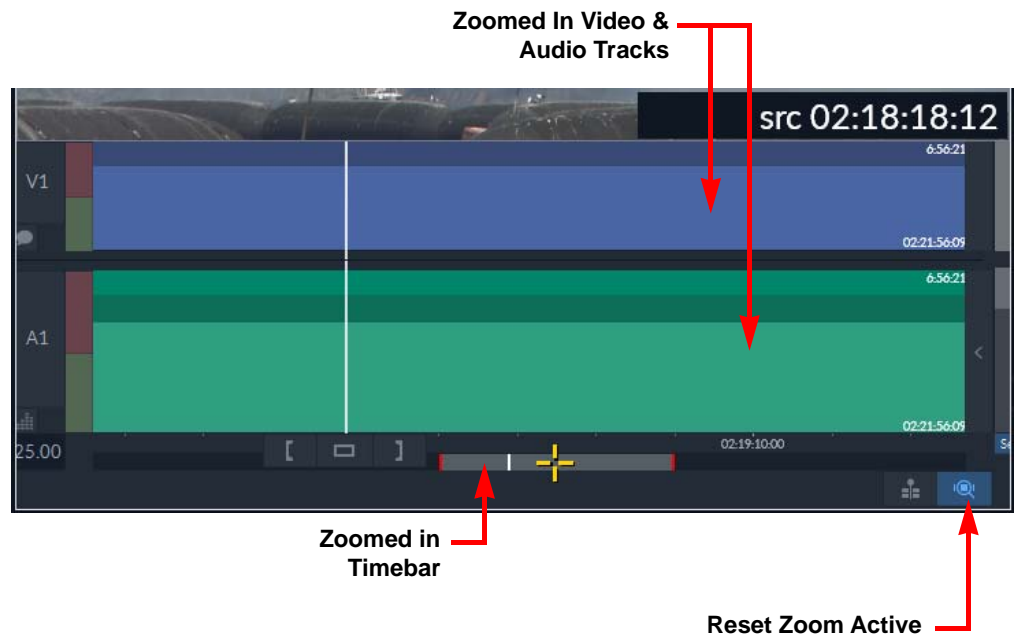



Figure 27 Zoomed-in Audio Track in Timeline

To zoom out again, press on the timebar and drag down.

To return to the default scale, press the Reset Zoom icon  at the bottom-right of the timeline. If the Reset Zoom box is highlighted in blue, a zoom is enabled; if not, the timeline is displayed at the default scale.

2.2.9 Selecting Multiple Floating Clips

Floating Clips can be locked together and treated as a single group.



Select by Dragging Lasso to Enclose All Clips

Figure 28 Selecting Multiple Floating Clips

To select several Floating Clips, either:

- Press on a blank area of the desktop and drag to draw a lasso around the required Floating Clips, or
- Hold <Ctrl> and press on each individual Floating Clip, in turn, to select them.

When multiple Floating Clips are selected they become locked together and are highlighted with a blue border. Pressing play starts all selected video clips playing simultaneously from their individual cursor points. Marking an In or Out point on any of the clips also marks in/out points at the current cursor position of every other clip in the selection.

- To unlock the selection tap anywhere on the desktop.

2.2.10 Transferring a Floating Clip into an Application

Floating Clips can be transferred into any applications available on the Application Bar.

For example, to drop a Floating Clip directly into the Edit application:

1. Drag the floating clip and hover over the **Edit** tab on the Application Bar.
2. When the **Edit** tab is highlighted yellow, release the Floating Clip.

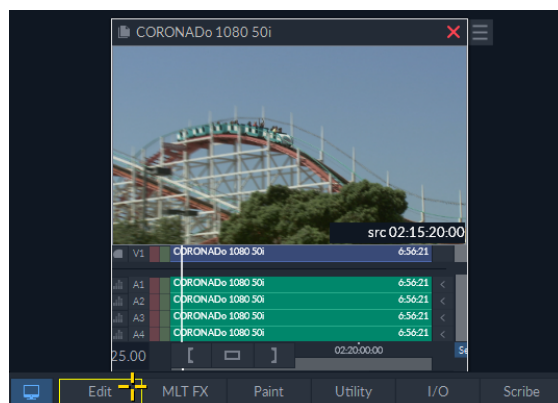



Figure 29 Dragging a Floating Clip to the Edit Timeline Application


3. The Floating Clip is now added to the Edit application timeline replacing any existing clip(s).

When multiple clips are dropped on the **Edit** tab they are assembled in order on the Edit timeline. For alternative ways to add a Floating Clip to the Edit application, see the section 2.3 *Using the More Options Menu* on page 18.

2.2.11 Deleting a Floating Clip

To delete a Floating Clip hover over the top-right corner of the clip and press the  icon that appears.

2.2.11.1 Deleting Multiple Clips

Draw a lasso around multiple Floating Clips on the desktop then press the  that appears in the top-right corner of any clip; all the selected clips are removed from the desktop.

2.2.11.2 Restoring a Deleted Clip

To restore the last deleted clip, right-click on an empty area of the desktop (or alternatively hold down the <Alt> key and tap on the desktop). This recovers the Floating Clip most recently deleted from the desktop.



This method brings back only the most recently deleted Floating Clip.

2.3 Using the More Options Menu

The **more** options menu provides a number of functions that are revealed in a column to the right of the Floating Clip.


Open the **more** options menu by pressing the more options icon  outside the top-right corner of the Floating Clip.



Figure 30 Opening the More Options Menu

The **more** options menu displays additional functions that apply directly to the platform currently being used and the type of clip (interlaced or progressive).

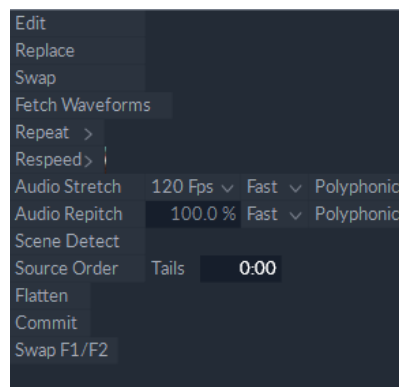


Figure 31 More Options Menu (Content Varies)



The options available in the more menu depend on the software and product in use.

The functions available in the more options menu include the following:

2.3.1 Edit

The **Edit** function places the selected clip or clip segment onto the Edit Application timeline at the current timeline cursor position.

2.3.2 Replace

The **Replace** function replaces any media on the Edit Application timeline with the current Floating Clip or selected segment.

2.3.3 Swap

The **Swap** function swaps the current Floating Clip timeline with the current Edit Application timeline.



See the *Timeline Editing User Guide* for further information on the Edit Application and working with a timeline.

2.3.4 Fetch Waveforms

Imports the audio waveform without needing to play through the entire video clip.

2.3.5 Publish

On sQ Server connected seats, clips can be edited then published (saved with edit instructions) back to the server.

For more information about publishing and using the publish pop-up, see the section 6.1 *Publishing Clips from the Desktop* on page 70.

2.3.6 Repeat

Repeat can be used to create a *freeze frame* effect in an edit by repeating a single frame to the desired duration. It can also be used to repeat a single frame (e.g., an imported JPG) into a static video.

The current frame can be repeated by the number entered in the **Repeat** box. Set this value using the numeric keypad, then press either **Frame**, **F1**, or **F2** and the resulting clip is placed on the desktop as a new Floating Clip.

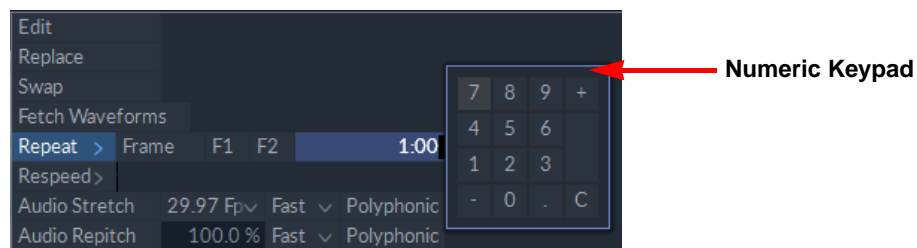


Figure 32 Specifying a Frame to Repeat

Pressing **F1** or **F2** (for interlaced clips) results in a field repeated clip that has a single field interpolated.

2.3.7 Respeed



From Rio version 4.0.0, the previous **Stretch** function has been renamed **Respeed** and provides a consolidated list of Respeed methods.

Selecting Respeed from the **More** options menu opens a Respeed pop-up panel containing additional Respeed options and controls.

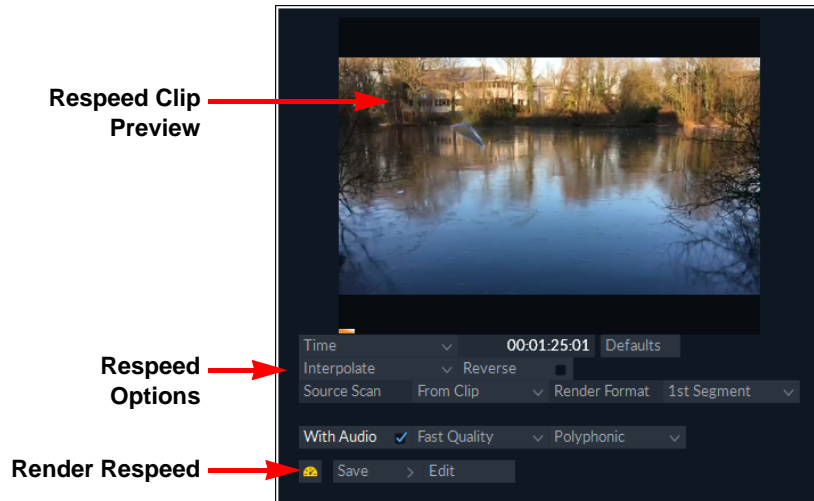


Figure 33 Respeed Pop-up Panel

Use the Respeed option to change the speed of a Floating Clip so that it can be stretched to a new duration in order to fill a gap or to create slow- or fast-motion effects.

Selecting the **Respeed** function opens a pop-up displaying a preview image with the available options that can be used to stretch the Floating Clip to a new duration. For more information, see the section 3.4 *Using the Respeed Function* on page 40.

2.3.8 Localize

Clips can be localized to ensure that they are always available if the original server held source material becomes unavailable. The **localize** function imports a copy of a clip in its native video format into the Clips Bin.

For more information about localizing and alternative ways to localize material, see the section 6.2 *Localizing a Clip* on page 73.

2.3.9 Audio Stretch

The audio tracks of any Floating Clip can be stretched to specific video frame rates as a desktop process, for example, to convert 24 fps material to 25 fps accurately, without changing the audio pitch. The **audio stretch** process has a number of options available to suit the type of audio material to be stretched and the desired level of accuracy. For more information, see the section 5.2.5 *Audio Stretch* on page 68.

2.3.10 Audio Repitch

The audio pitch of any Floating Clip can be raised or lowered using the **audio repitch** (“duck voice” audio distortion) function to disguise voices. The pitch can be set between 50% (lower pitch) and 200% (higher pitch). For more information, see section 5.2.6 *Audio Repitch* on page 69.

2.3.11 Scene Detect

The **Scene Detect** function automatically detects a change of scene within a clip.

A copy of the original clip is then produced, with edit points (cuts) at the positions where a change of scene has been detected.

For more information on using this function, see section 3.5 *Detecting Scene Changes in a Floating Clip* on page 54.

2.3.12 Source Order

Clips can be re-ordered from edit/play order to source/load order using the **Source Order** function. Reordering is based on originator and source timecode.

In the numeric box to the right of the **Tails** box, enter the frame number of tails to expose (if present), then press the **Source Order** box to reorder the clip.

To convert back to edit/play order re-conform the clip using the changed clip as the Reference Clip. This is required because it is not possible to preserve transitions when reordering the clip.



Source order can be used only with clips that have not been trimmed, edited or had effects added to them.



See the *I/O User Guide* for more information on conforming with a Reference Clip.

2.3.13 High Bit Rate (HBR)

The **HBR** function caches a high bit rate version of the Floating Clip. This allows the Floating Clip to be played out locally at full quality and ensures that the material can be published back to the server even if the original server held material is no longer available. Saving the Floating Clip in the Clips Bin after using **HBR** locks the high bit rate material to the workstation so that it cannot be deleted using the Purge Cache function in the configuration menu.

The icon in the Clip Bin displays green  to indicate that the material has been cached at high bit rate.

2.3.14 Make Stereo Clip

The Make Stereo Clip function enables a stereo clip to be created from a source mono clip. The following options are available when selecting **Make Stereo Clip** from the More options menu:

- **srcTC:** Makes a stereo clip by syncing on source timecode
- **Cur Pos:** Makes a stereo clip syncing using the two cursor positions
- **First Frame:** Makes a stereo clip based on the first frame of each clip.

For more information, see section 4.3.2 *Make Stereo Clip* on page 59.

2.3.15 Copy Settings

The **Copy Settings** function allows the settings from one Floating Clip on the Desktop to be transferred to a similar Floating Clip on the Desktop. This could be, for example, from a low resolution offline clip with settings to the final conform or from a soft-mounted clip to a localized version of the same clip.

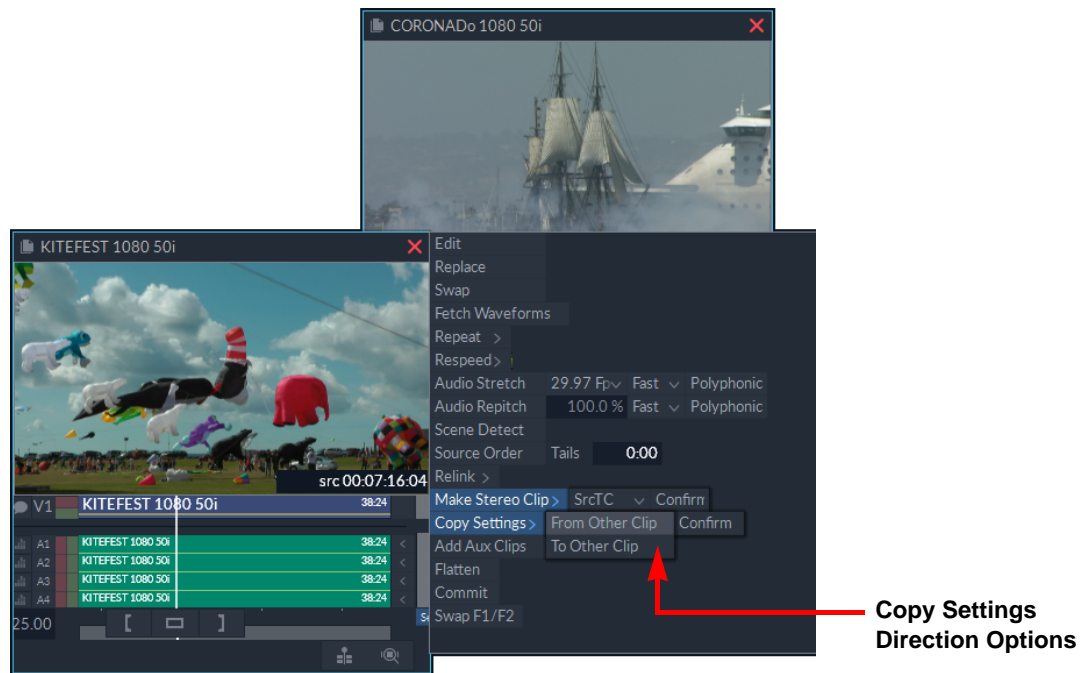


Figure 34 Copy Clip Settings

The two clips need to be lassoed together on the Desktop and then the Copy Settings option selected from the More options menu, as shown,

The following constraints apply to the source and target clips for the Copy Settings operation:

- Only two clips must be selected to allow the copying of settings.
- Both clips must be either mono or stereo; settings will not copy from a mono to stereo clip and *vice versa*.
- Both clips must be of the same length.
- Clip fx, track fx and seg fx will be transferred.
- If a segment in the source clip has settings, and the corresponding segment in the target clip also has settings, the target segment settings are replaced by the source segment settings.
- If a segment in the source clip has settings, and the corresponding segment in the target clip has no settings, the source segment settings are copied into the target segment.
- If a segment in the source clip has no settings, and the corresponding segment in the target clip has settings, the target segment settings are not changed.
- Floating Clips must have the same number of tracks, same number of segments, and all segments must be of the same length.
- Floating Clips must have same number of transitions, and the transition length and offset must match.
- If the Floating Clip contains stereo media, the **Copy Settings** option allows any effect processes on the left or right eye to be copied to the other.

2.3.16 Add Auxiliary Clips

The **Add Aux Clips** function enables secondary or **auxiliary clips** to be attached to the main Floating Clip on the Desktop, in a similar way to attaching a key channel, see section 2.1.3 *Floating Clips Associated with a Key Channel* on page 10.

The concept of an auxiliary clip describes, for example, a matte, EXR layers, RGB channels, or even other clips. These auxiliary clips can be used by the system to grade through on cascades, or as secondary clips in the plug-ins menu.

Multiple Floating Clips can be lassoed on the Desktop from left to right, with the left-most clip becoming the master clip.

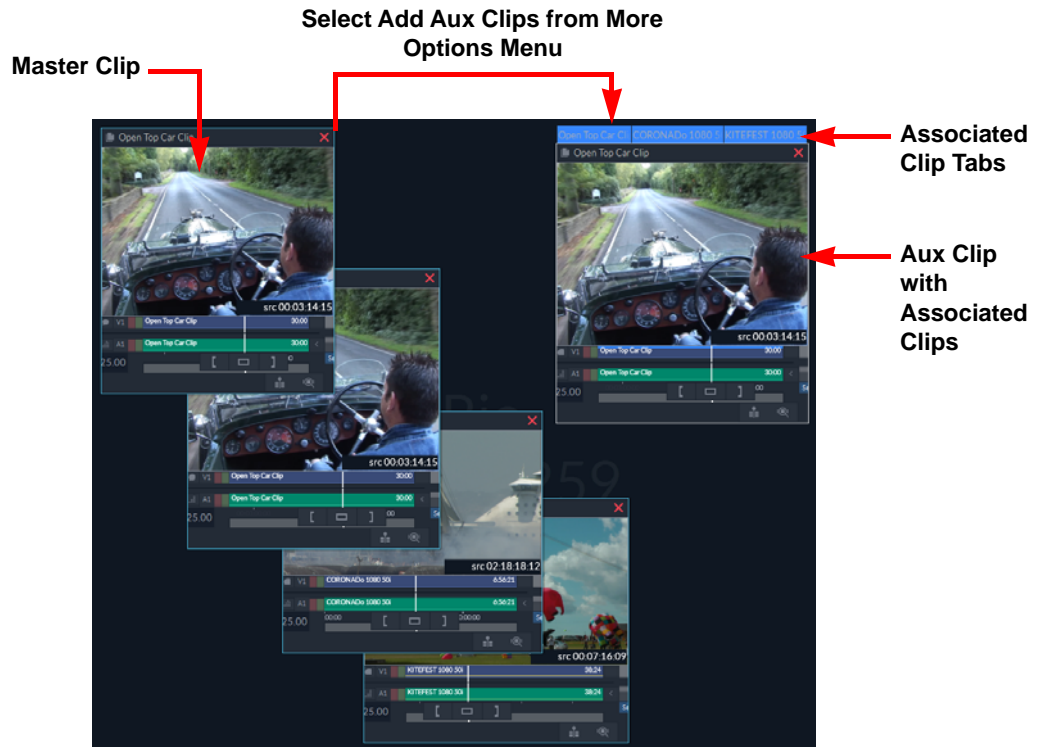


Figure 35 Adding Auxiliary Clips

When Add Aux Clips is selected from the More options menu, an auxiliary clip is created with blue tabs for all associated clips. Auxiliary clips can be identified by the blue color on the Desktop, in the Clips Bin and on the timeline.

A key channel can be added to auxiliary clips in the standard way. When a key is present, then the red key indicator is also displayed.

2.3.17 Split VL/VR (Stereo 3D Option)

If the Floating Clip contains stereo media, the **split VL/VR** box is available. This function is used to split the different eyes and is useful to play-out or export each eye separately. For more information, see the section 4. *Stereo Floating Clips* on page 56.



Alternatively, see the **Stereo 3D User Guide** for information on editing with stereo video.

2.3.18 Flatten

The **Flatten** function is used to combine multiple layers on the timeline into a single track, that is, to *flatten* it. When **Flatten** is selected any rendered MLT segments and effects are collapsed to produce a single video track. The **Flatten** function can also be used on a single layer timeline to *flatten* any history associated with the timeline.

The flattened video track retains all edit marks from each track.

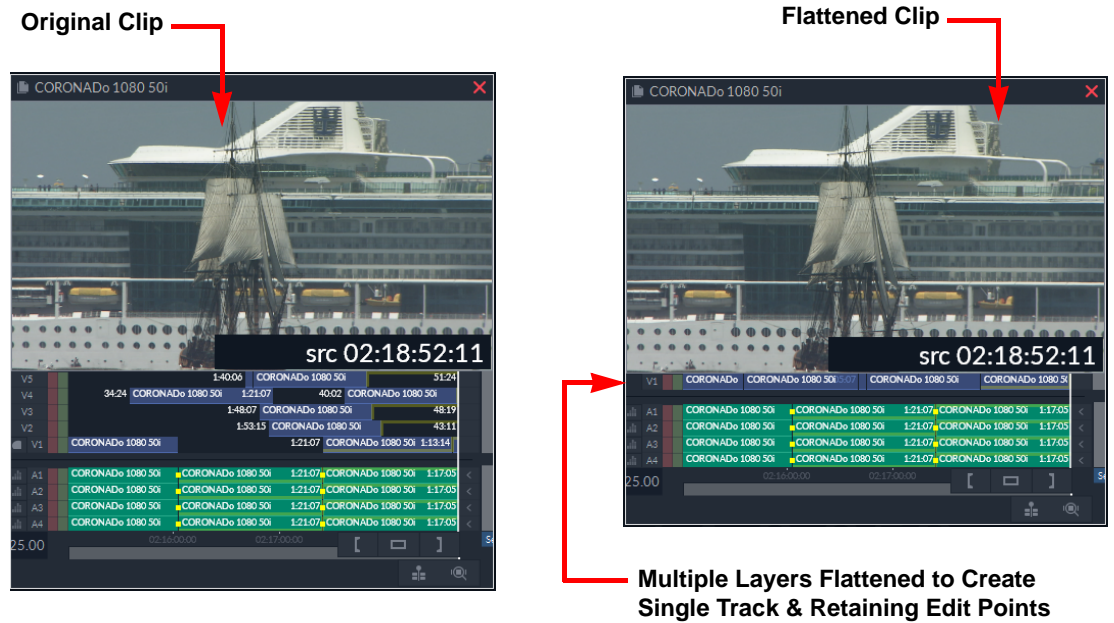


Figure 36 Flattening Multiple Layers on the Floating Clip Timeline



The flatten function loses multilayer and affects the change history.

2.3.19 Commit

The **Commit** function is similar to the **Flatten** function in that when pressed, it flattens any multilayered timelines into a single track. It differs from the **Flatten** function in that it removes any edit points creating a single clip rather than a clip with multiple segments. Any audio edit points are unaffected by the process.

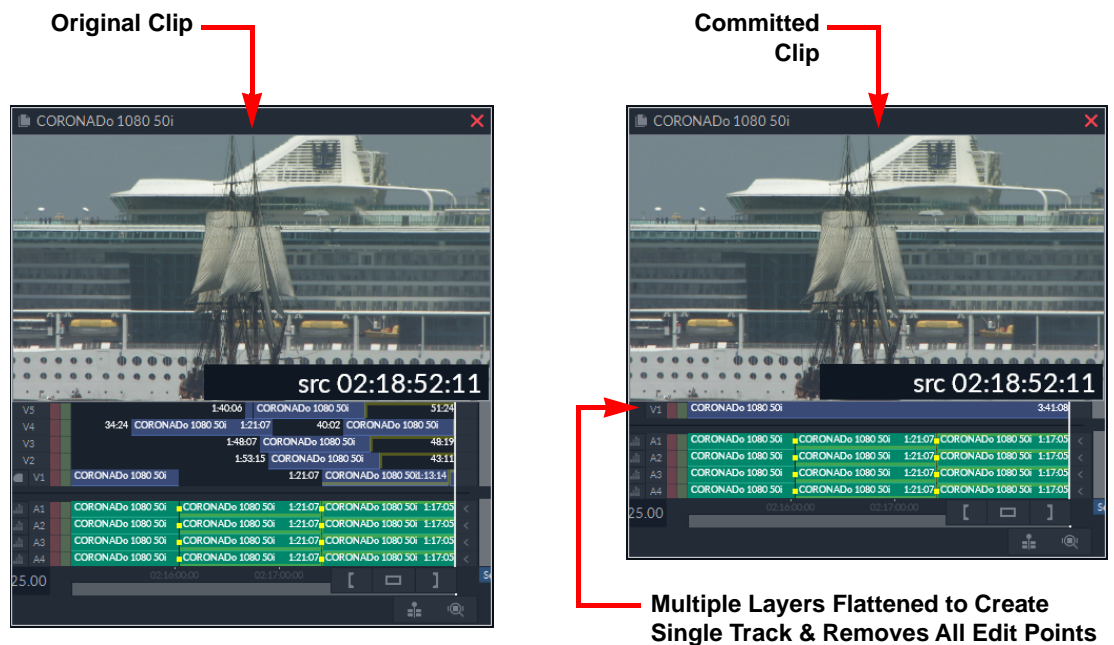


Figure 37 Committing Multi-layered Timelines

2.3.20 Swap F1/F2 (Interlaced Clips Only)

The Swap F1/F2 function swaps the field dominance from odd to even numbered fields when scanning interlaced clips.

2.3.21 Relinking Soft-mounted Clips

In the event that a soft-mounted file loses its connection to the source path (for example, if the path changes) the connection can be restored using the **Relink** function of the **More** options menu.

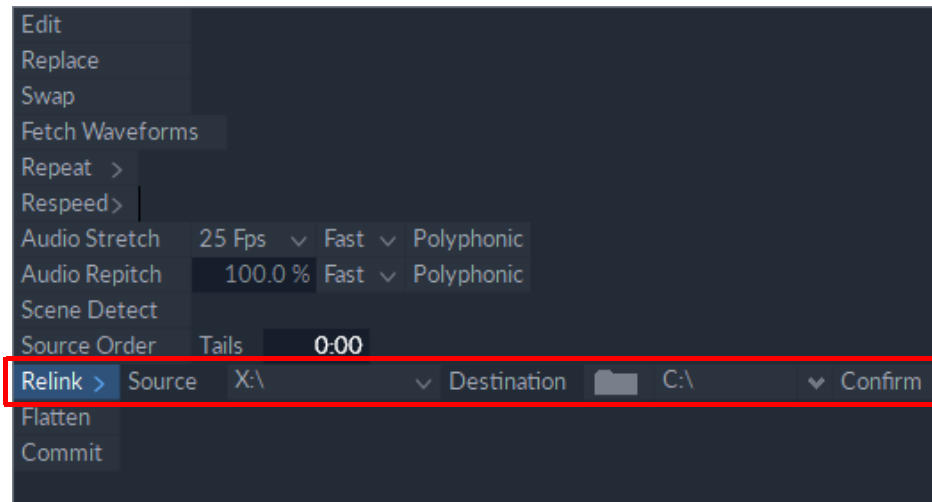


Figure 38 Relink Menu in Options for Offline Soft-mounted Media

If the original location of the media is either offline or no longer available, a red bar is displayed on the timeline, instead of the standard yellow bar indicating soft-mounted material. In the Clips Bin, this is indicated in the **Type** field with the message: ... + **offline media**.

When a soft-mounted clip is selected, the **Relink** button is made available in the **More** options menu.

Clicking on relink, opens the Relink dialog, where the original path and new path are selected. Once the source path and destination path are selected, press **Confirm** to start the relinking process.

The paths of all rushes in all the selected clips are checked and if they include the original path in their file path, it is replaced with the new path. The source list is then updated with the remaining list of folders which may still be offline.

This same process can also be initiated from the Clips Bin.

Once complete and all the media is correctly relinked, the red bar should no longer be displayed in the timeline and the standard, yellow bar, indicating a soft-mount, will be displayed.

3. Working with the Floating Clip Controls

3.1 Using the Floating Clip Controls

The **Active Area** of each Floating Clip contains various navigational and shot-selection tools. To access the Active Area hover the cursor over the lower half of the Video Window until an arc appears as shown below:

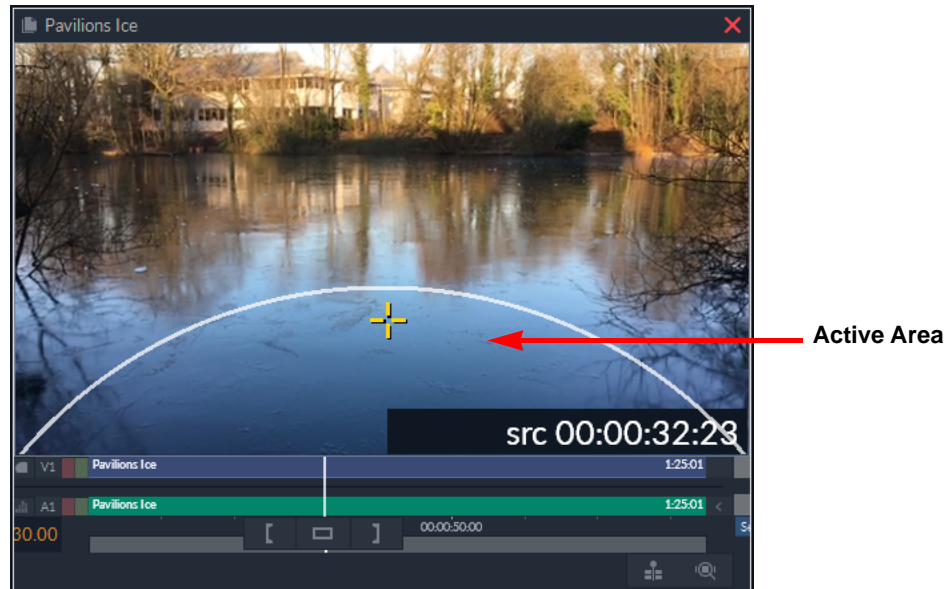


Figure 39 Floating Clip Active Area

Use the floating clip controls available in the Active Area as described in the following sub-sections:

3.1.1 Jog Control

In the Active Area, press and drag to the left or right to jog frame-by-frame backward or forward through the clip. When using the jog function a narrow yellow bar extends along the bottom of the Active Area, increasing in length as the bar is dragged to the left or right of the current cursor position, indicating an increasing jog rate.

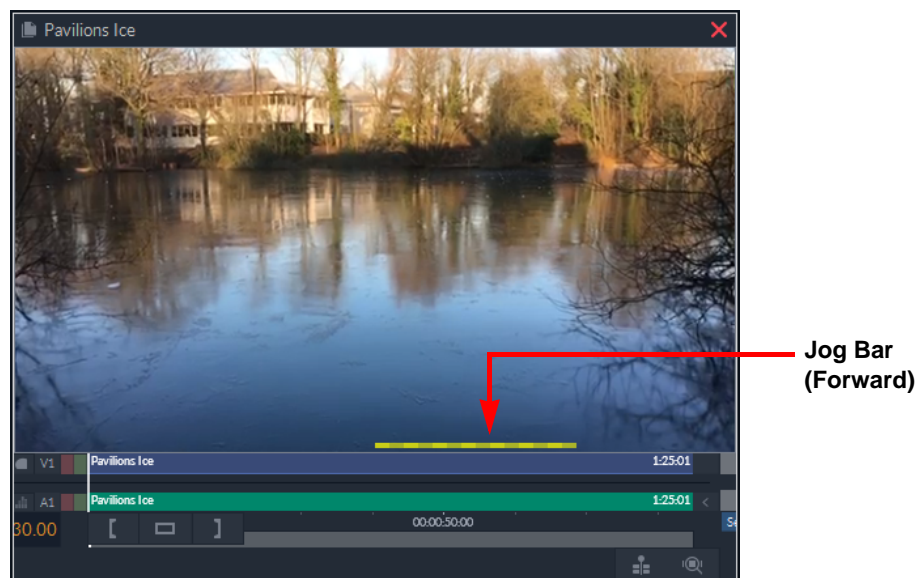


Figure 40 Floating Clip Jog Control

3.1.2 Shuttle Control

Position the cursor in the lower-center of the Active Area until a diamond shape is displayed. Press on the diamond and drag either left or right to shuttle backward or forward through the edit. When using the shuttle function a thick, gray bar extends to the left or right along the bottom of the Active Area. The more extended the bar becomes, the faster the shuttle.



Figure 41 Floating Clip Shuttle Control

3.1.3 Play/Pause Controls

Press anywhere in the Active Area to play the clip; press again to pause the clip.

3.1.4 Marking a Section

3.1.4.1 Marking In and Out Points

A section of a Floating Clip can be selected by marking **In** and **Out** points on it. Mark in and out points in any of the following ways:

- Hover in the bottom left of the Video Window to reveal the **Mark In** icon. Press to mark an In point at the current cursor position. Hover in the bottom right of the Video Window to reveal the Mark Out icon. Press to set the Out point. The marked segment is highlighted in the timeline.

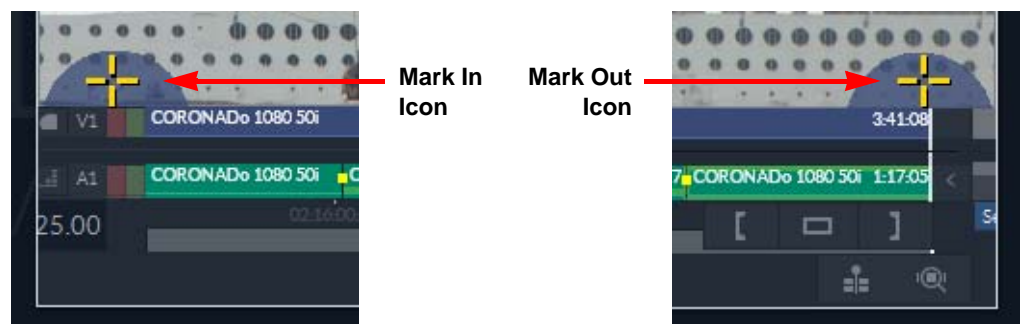


Figure 42 Floating Clip Mark In and Out Controls

- Press and hold the **Mark In** icon and move the cursor either:
 - Clockwise to move the In point forward, or
 - Anti-clockwise to move the In point backward.
- Press and hold the **Mark Out** icon and move the cursor either:
 - Clockwise to move the Out point forward, or
 - Anti-clockwise to move the Out point backward.

- Press the required point on the Floating Clip timeline and press the **Mark In** box [displayed on the transport head below the cursor. Locate the required out point then press the **Mark Out** box] .



Figure 43 Floating Clip Playhead Controls

- Use the keyboard keys <I> or <E> and <O> or <R> to mark the In and Out points respectively.

When both In and Out points have both been marked, the section is highlighted and the **Lift** menu is displayed. If only an In point is marked then the section highlight continues to the end of the clip.



Figure 44 Marked Section in a Floating Clip

For more information on the Lift menu options, see the section 3.1.4.3 *Using the Lift Menu Options* on page 29.

The In and Out points are shown in the Video window by serrated markers along the left and right edges of the image.

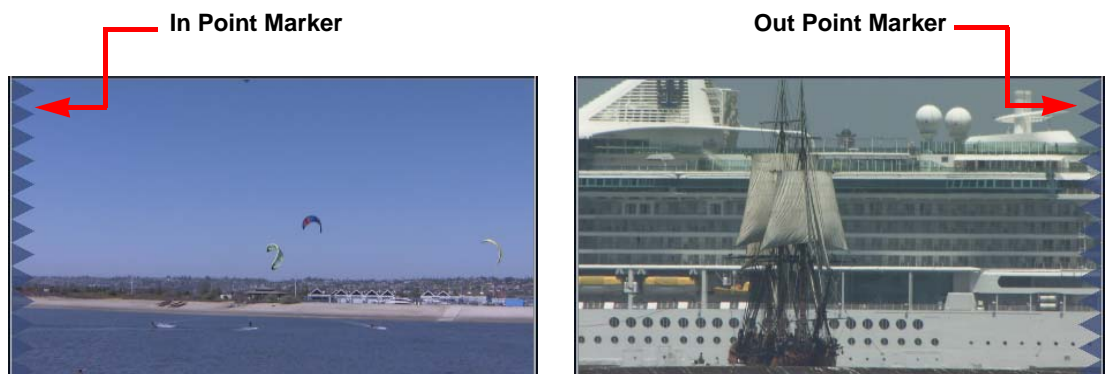


Figure 45 In and Out Point Markers

A red track highlight indicates invalid marks; for example, if the out mark has been placed before the in mark.


Invalid Mark Point



Figure 46 Invalid Marked Segment in Timeline

3.1.4.2 Selecting a Segment

To select a segment (all frames between two cut points) use either of the following methods:

- Press the Segment box  below the cursor, to select the whole of the current segment (i.e., the segment in which the cursor is currently located).
If the clip consists of a single segment, then the entire clip is selected.
- Press <T> on the keyboard to select the current segment.

Both of these methods select the entire segment.



Selecting specific track filter boxes (e.g., V1, A1 etc.) before pressing the Segment button restricts the selection to that particular track.

3.1.4.3 Using the Lift Menu Options

Once a section has been marked the blue **Lift** menu displays. This menu provides the following options:

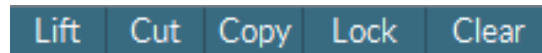


Figure 47 Lift Menu Items

Lift Option

The **Lift** function lifts the selection from the edit, leaving a gap in the timeline and creates another Floating Clip to the right of the floating clip, containing the lifted segment. The gap left by the Lift operation is marked as shown below:

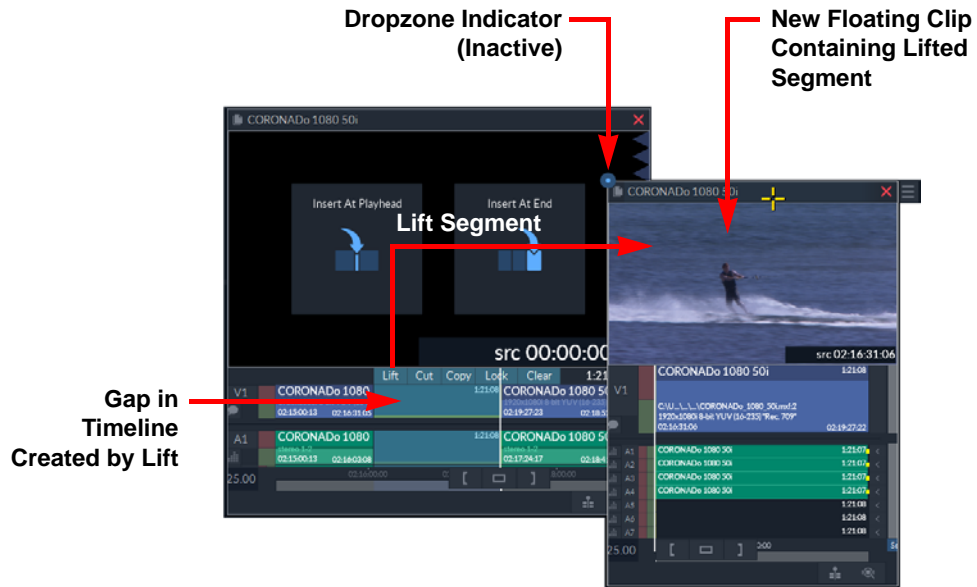


Figure 48 Lifting Out a Marked Segment

Pressing and dragging the **Lift** box allows the Floating Clip to be placed in the desired location either on the desktop, in a bin or transferred into another application.

Holding down the **<Shift>** key before pressing the **Lift** box moves (or slips) the selected tracks along the timeline, forcing any tracks before or after to be moved accordingly.

To lift material without creating a Floating Clip, press **<Z>**.

Cut Option

The **Cut** function removes the selection from the edit but in this case closes the gap in the timeline. The cut selection is placed on the desktop as a Floating Clip.

Pressing the **Cut** box creates a Floating Clip to the right of the timeline.

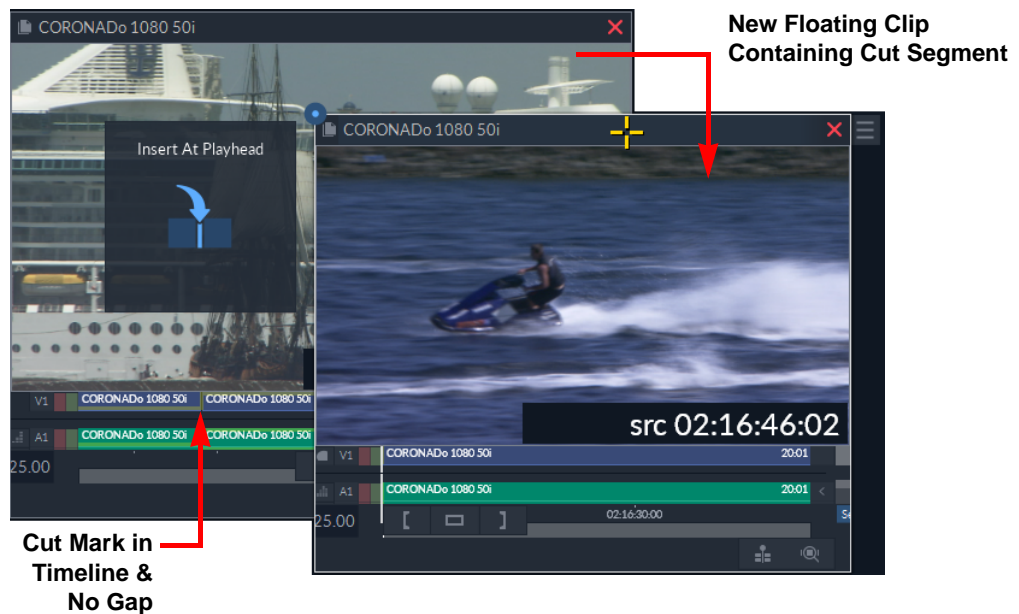


Figure 49 Cutting Out a Marked Segment

Pressing and dragging on the **Cut** box allows the Floating Clip to be placed in the desired location either on the desktop, in a bin or transferred into another application. The cut action cuts out the marked segment and closes the gap between the preceding and following segments.

To cut material without creating a Floating Clip, press <X>.

Copy Option

The **Copy** function makes a copy of the selection, without leaving a gap or cut in the timeline. that can be placed on the desktop as a Floating Clip.

Pressing the **Copy** box creates a Floating Clip to the right of the timeline.

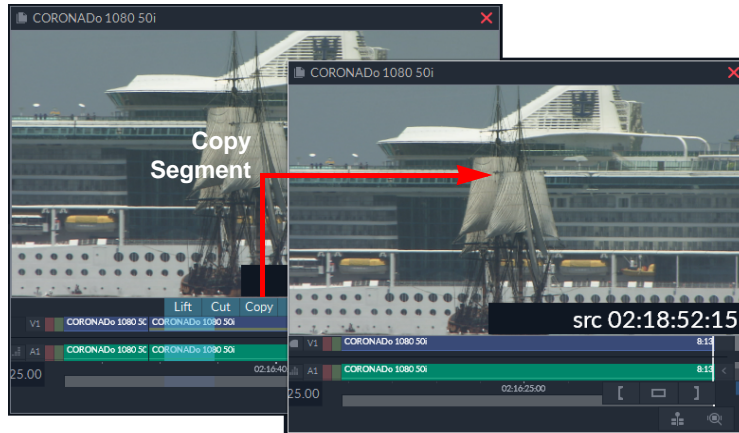


Figure 50 Copying a Marked Segment

Pressing and dragging the **Copy** box allows the Floating Clip to be placed in the desired location either on the desktop, in a bin or transferred into another application.

Lock Option

The **Lock** function enables the duration between In and Out points on the timeline to be locked to the selected time.

When the duration between In and Out points is locked, the next time that an In point is selected, the Out point is automatically set to the duration of the locked segment. Similarly, marking an Out point elsewhere on the timeline automatically sets the corresponding In point to the locked duration.



Figure 51 Locking the Duration of a Marked Segment

Press the **Lock** box again to cancel the lock function.



When using <Ctrl> + <I>, <O> or <T> to add the F1 Review Region duration to the selection, then the Lock function is deactivated.

Clear Option

Press **Clear** to remove the In and Out marks and to close the **Lift** menu.

3.2 Combining Floating Clips

3.2.1 Creating a Sequence

Floating Clips can be joined together to make an edited sequence on the desktop. Drag and drop one Floating Clip onto another to join them together.

3.2.1.1 Combining Two Floating Clips

To combine two Floating Clips:

1. Place the first Floating Clip on the desktop.
2. Select the second Floating Clip and place on the desktop.
3. Press and hold on the Video Window of the second Floating Clip to move it.
4. Drag and hover the second Floating Clip above the first.

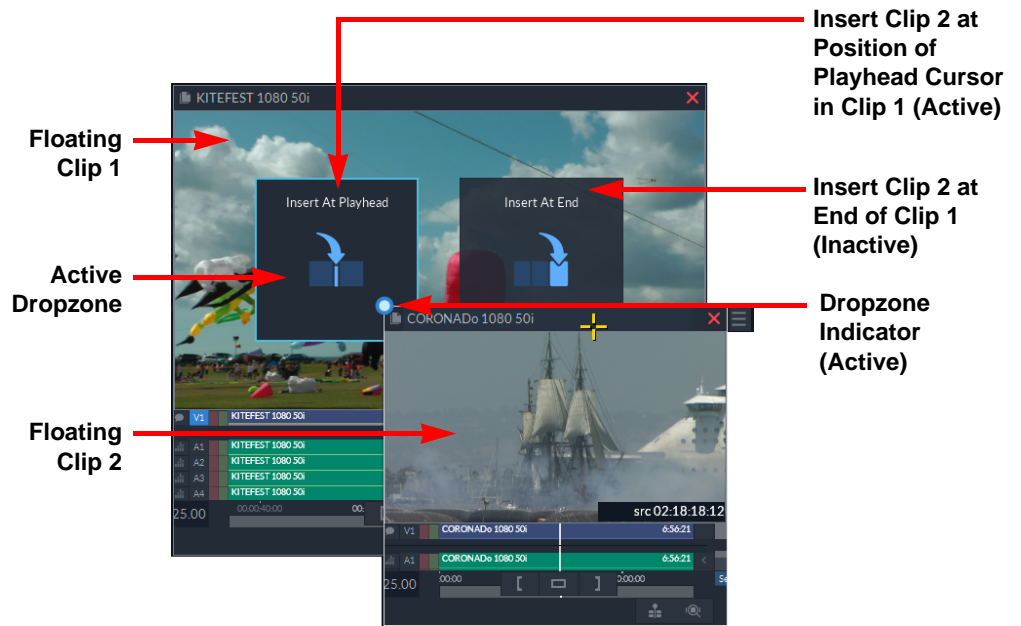


Figure 52 Joining Two Floating Clips

This activates the following **dropzones** on the first clip:

- **Insert at Playhead:** Inserts the clip starting at the position of the playhead cursor.
- **Insert at End:** Inserts the clip at the end of the last clip currently in the Floating Clip timeline.

The dropzone indicator in the top-left corner of the clip being inserted changes to the active state when hovering over the target dropzone.

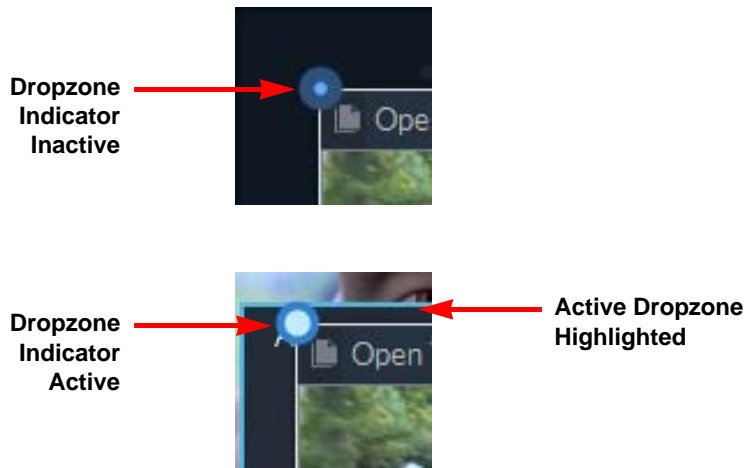


Figure 53 Activity Changes in Appearance of Dropzone Indicator

- 5. Select the desired dropzone and release the second Floating Clip.

The two Floating Clips are now combined to generate a single Floating Clip.

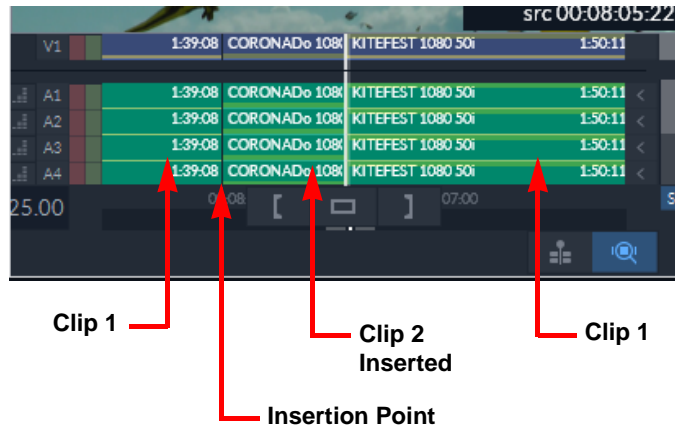


Figure 54 Two Floating Clips Combined

Repeat this process to add more clips to the Floating Clip timeline. Clips are displayed in the sequence in which they are added. Each subsequent Floating Clip added to the timeline is appended at the end of the sequence.



To insert a new clip into the sequence at the timeline cursor point, press <Shift> when dropping in the new clip.

3.2.1.2 Combining Multiple Floating Clips

Multiple Floating Clips can be joined simultaneously by selecting the clips to be added, then dragging and dropping them onto another Floating Clip.

To add multiple clips:

1. Choose the clip to display first in the sequence and place it on the desktop as a Floating Clip.
2. Select all other clips to add to the sequence and place these on the desktop.
3. Select all Floating Clips chosen in step 2, excluding the target Floating Clip chosen in step 1, see the section 2.2.9 *Selecting Multiple Floating Clips* on page 17.
4. With the desired Floating Clips selected, press and hold on the Video Window of one of the selected Floating Clips, drag over the desired dropzone of the target Floating Clip and release the clips when the dropzone indicator is activated.

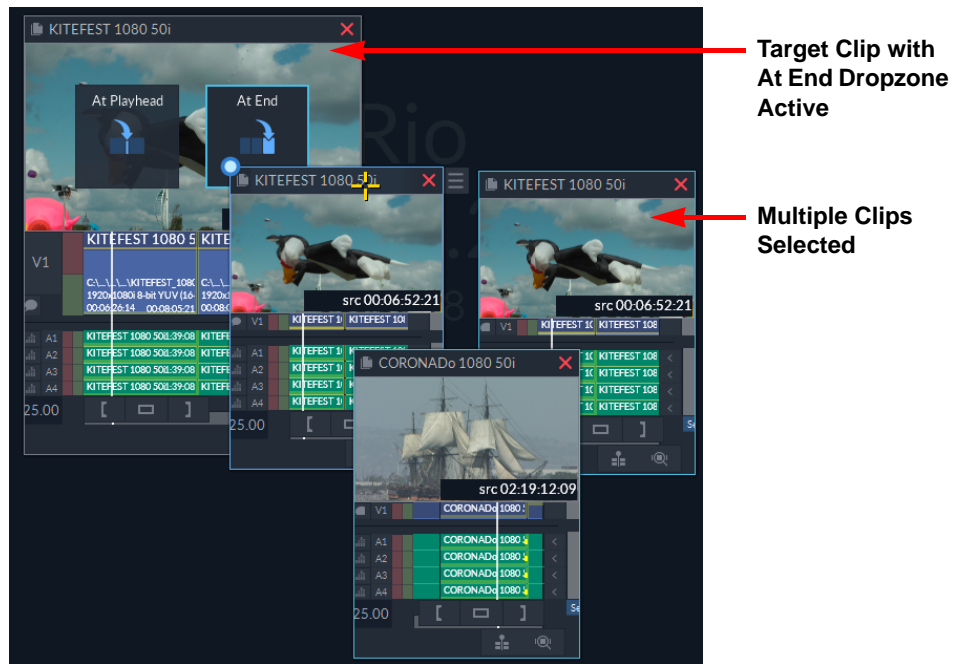


Figure 55 Combining Multiple Clips

3.2.1.3 Deleting a Segment from a Sequence

To delete a segment from a Floating Clip sequence place the cursor on the segment to be removed then press <T> or **Seg** on the playhead to select the segment. Press <X> or **Cut** to remove it from the sequence.

3.2.2 Adding a Clip as a Key

To add a clip as a key:

- Hold down <Ctrl> while dropping a clip onto the second clip..

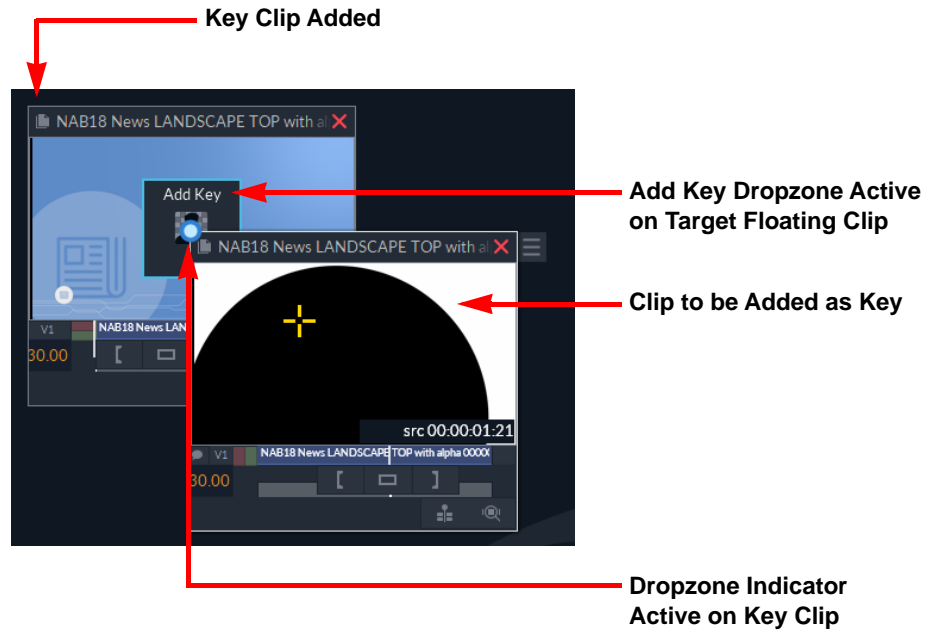


Figure 56 Dragging a Key to a Floating Clip

The second clip is then added as a key channel to the first clip.

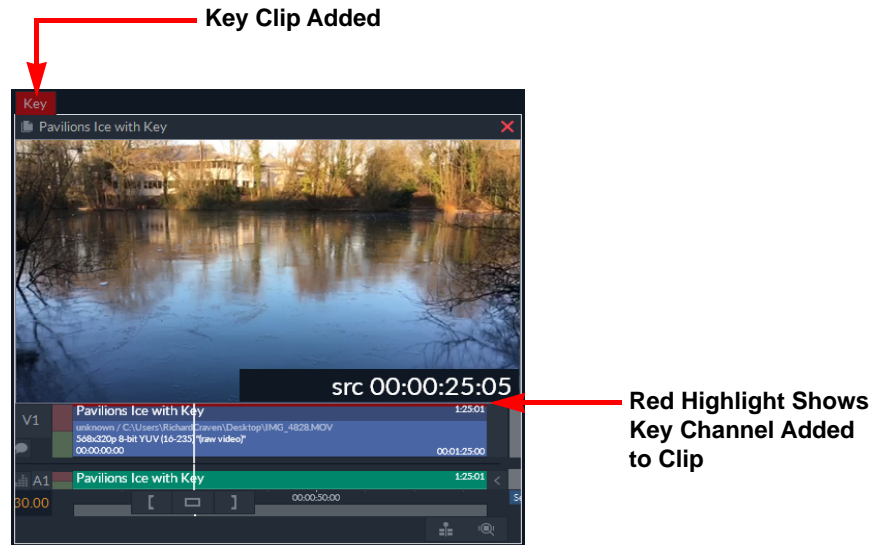


Figure 57 Adding a Key Channel to a Floating Clip

3.3 Using the Clip Logging Function

3.3.1 Overview

Clip logging refers to the process of reviewing a video clip and labeling any significant events that occur to assist future navigation of the clip during editing. Event markers can be added to a Floating Clip to label key events and to ensure that suitable annotations are present, whether reviewing the source clip itself, or an edit containing part of the clip.

The logging process for a Floating Clip requires navigating through the clip, marking where different events occur and their duration, then entering a text description as metadata. Each event is flagged with a colored indicator, the length of which represents the duration of the event. Four colors are available to represent four different event types. For example, for a clip recording a football match, a different color could be associated with event types such as: goals, penalties, red cards and yellow cards.



Events cannot be added to a clip that has been trimmed or edited with other clips.


Event markers can be used to log the following:

- Start source timecode
- End source timecode
- Type of event (four user-defined types available)
- Comment (multi-line text)

3.3.2 Viewing Existing Events

To view previously logged events, enable log view mode as follows:

1. Press and drag down the video track filter (e.g., V1)

This reveals the logging icon .


2. Press  below the video track filter (V1) to activate logging:



Figure 58 Viewing Existing Logged Events

A timecode and text comment area now displayed below the Video Window, together with colored event markers (if available) at various points on the video track.

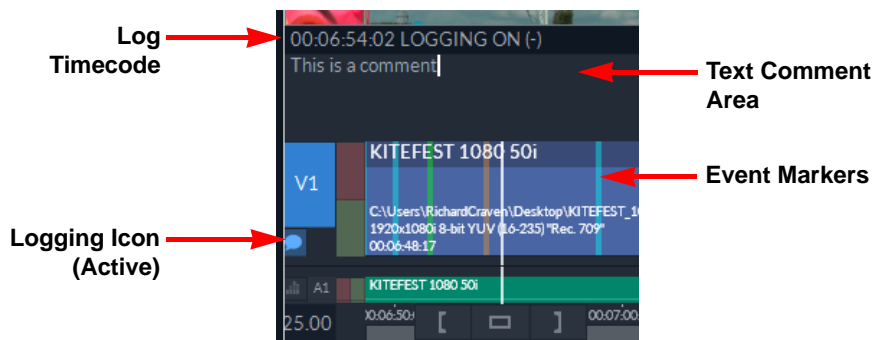


Figure 59 Event Logging Active

Use the <↑> and <↓> keys to step backward or forward between logging points. The timecode and any comment text associated with the event are displayed in the comment area below the Video Window.

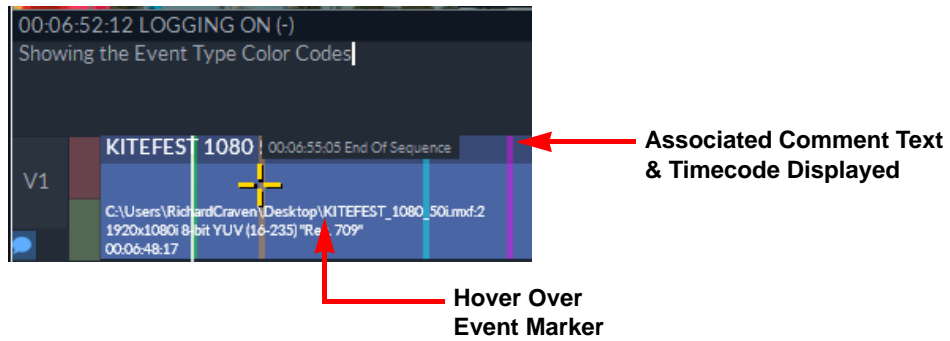


Figure 60 Logged Event Markers

Alternatively, hover over any colored event indicator on the video track to display the event information in the title bar of the clip.

3.3.3 Logging New Events

To log an event, first press <Ctrl><L> to enable **Log Edit Mode**.

With log edit mode enabled, the message **LOGGING ON** is displayed above the text comment area.

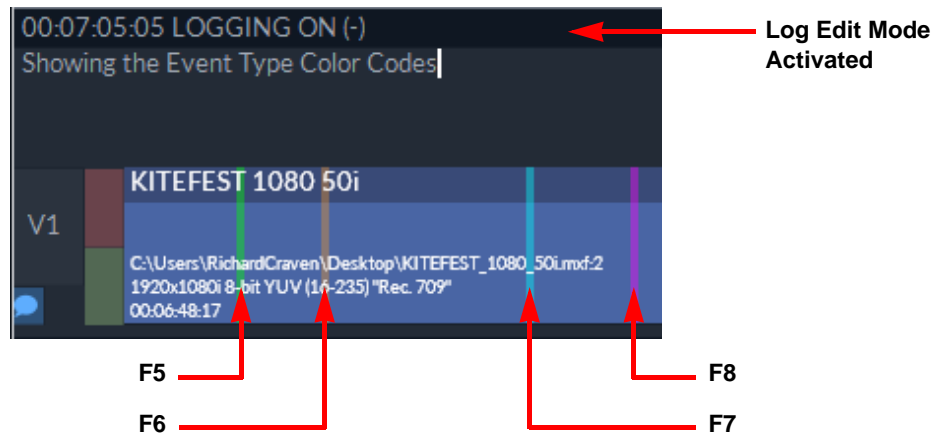
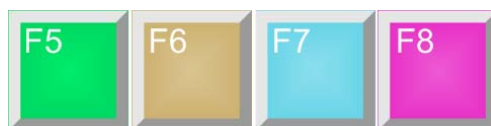


Figure 61 Function Keys for Different Event Types

To log an event:

1. Position the timeline cursor at the desired event point in the Floating Clip timeline.
2. Press the function key representing the required event type (<F5>, <F6>, <F7> or <F8>.)

This adds a colored marker, representing the duration of a single frame, to the edit timeline. The function keys <F5>, <F6>, <F7> and <F8> assign an event marker using the following colors:



Each of the logging function keys enters a different colored event log marker that can be used to represent different event types.

3. Enter a text comment using the keyboard.

- Text can be on multiple lines. Use the keyboard arrow keys to navigate through the text.
4. Extend the event duration, if necessary, by navigating to the required end-point of the event and then pressing <F12>.

This adds an extended colored marker to the edit timeline.



Figure 62 Extended Event Markers

An event occupies the duration of a single frame by default.

5. Press <Ctrl><L> again to exit log edit mode.

This returns the GUI and keyboard to standard operation.

It is important to consider the following points when logging events:

- In log edit mode, keyboard character presses only affect text - keyboard shortcuts are temporarily disabled.
- To navigate through the edit, use the Active Area navigational controls or the mouse, see the section 3.1 *Using the Floating Clip Controls* on page 26
- New events can be logged either when the clip is playing or when paused.
- A new event cannot be logged if it overlaps another event.

3.3.3.1 Default Prefix Text (Logging Roles)

If logging roles are used, each of the four event types can have a line of default text associated with it, which is entered automatically when an event is logged. Logging roles can be set by the ISA Manager.

3.3.4 Saving a Clip Log

Save logging metadata of the current clip by pressing <Ctrl><Shift><P>. This creates a text file in the following Logger directory:

- **C:/Data/Clip Logger**

The text file is assigned a title matching that of the clip (e.g., *clip_name.txt*).



Unsupported characters may be removed from the filename.

3.3.5 Deleting a Clip Log

To delete a clip log:

1. Enable the log edit mode <Ctrl><L>.
2. Press on the event marker in the timeline to select the event to delete.
3. Press <Ctrl><Delete>.


3.4 Using the Respeed Function

The Respeed function enables the speed of Floating Clips to be modified, creating a new duration in order to fill a gap or to create slow-motion and fast-motion effects.

The **Respeed** function is available in the **More** options menu, see the section 2.3 *Using the More Options Menu* on page 18.

3.4.1 Changing the Speed of a Floating Clip

To respeed a Floating Clip:

1. Click the **More** options menu icon  outside the top-right corner of the Floating Clip.
2. Mark In and Out points of the target segment, unless respeeding the entire clip.
3. Select **Respeed** from the **More** options menu.

A Respeed pop-up panel opens, displaying a preview image and the appropriate respeed controls:

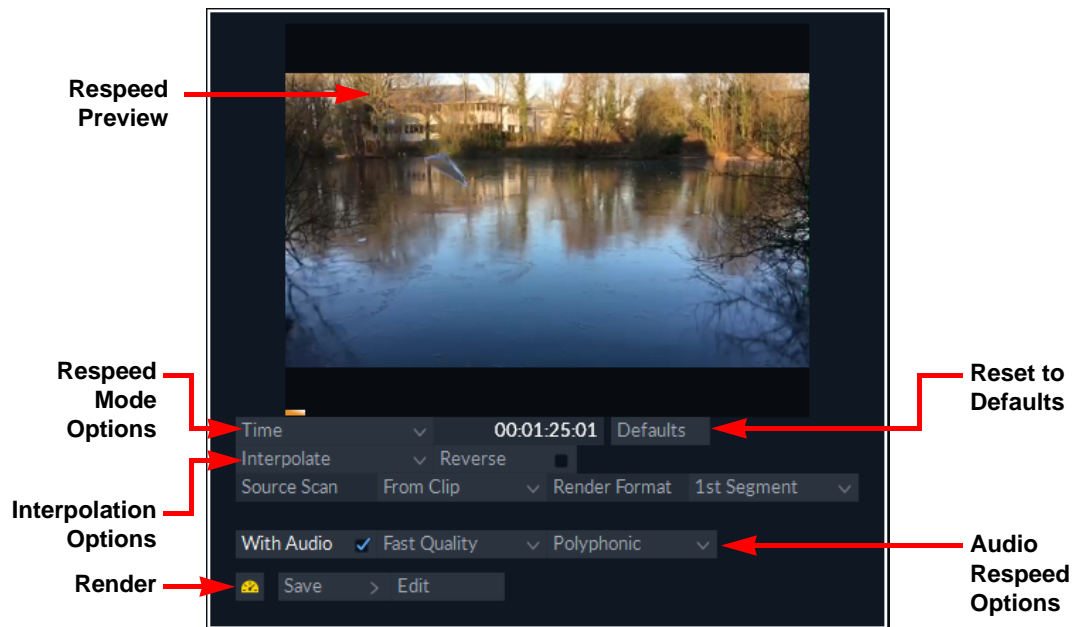




Figure 63 Respeed Pop-up Panel Options and Controls

When **Respeed** is selected, the pop-up shown above provides a number of options and motion controls to define the type of respeed required.

If necessary, resize the pop-up by hovering over the bottom-right corner and dragging the resize triangle. On completion of the respeed process, press the  icon in the top-right corner to close the pop-up.

4. Set the required respeed options, depending on the type of respeed selected, as described in the following sub-sections.

If necessary, the **Defaults** button resets all changes back to the default settings.

5. Once the desired Respeed options have been selected, press the **Render** icon  to respeed the clip.

An orange bar above the respeed option fields shows the progress of the rendering operation.



Figure 64 Respeed in Progress

6. Select either **Save** or **Edit**, see the section 3.4.8 *Render and Save a Respeed* on page 53.

On completion of the rendering process the respeeded clip is always highlighted in pink along the bottom of the track, with the new duration at the right of the track, as shown below:

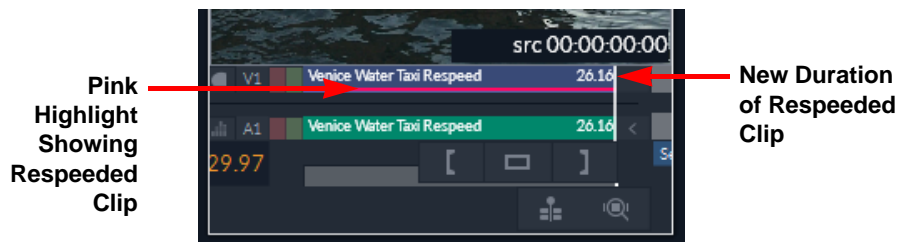


Figure 65 Respeed Indicator in Timeline

The following graphic shows a side-by-side comparison of an original clip and the respeded clip following rendering. The respeded clip is highlighted with a pink border along the bottom of the video track to show that the clip has undergone a respeed.

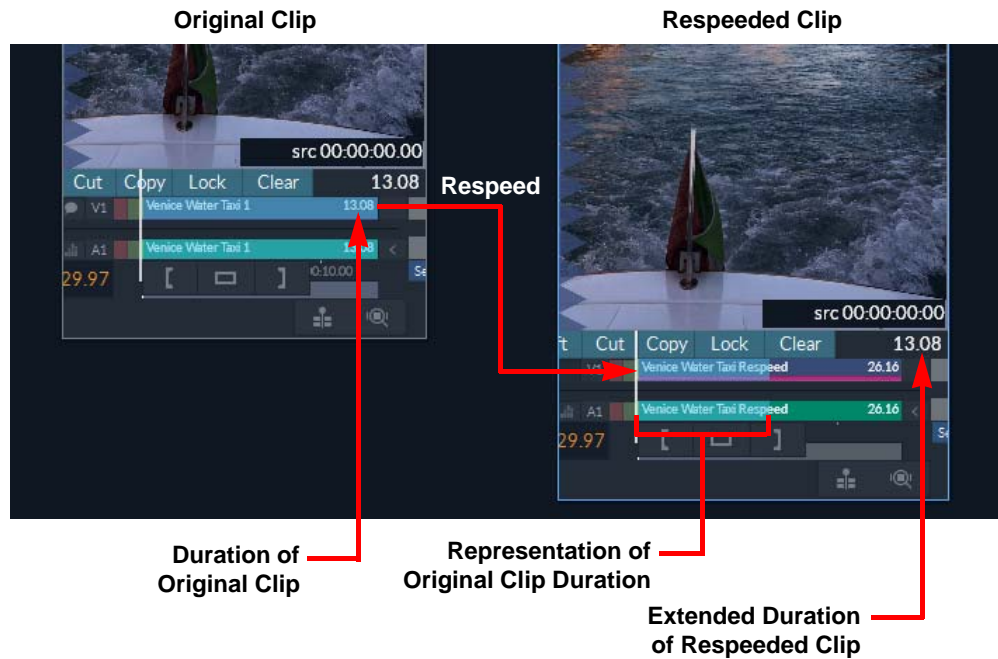


Figure 66 Comparison of Respeded Floating Clip

3.4.2 Choosing a Respeed Mode

Use the **respeed mode** scroll box (displays **Time** by default) to select the appropriate method to respeed the clip from the following scroll menu options:

Respeed Mode	Description
Time	(Default) Respeeds the clip to a target duration in the format: hh:mm:ss:ff (e.g., 00:00:00:00).
Speed	Respeeds the clip based on a percentage of the original speed. For example, a setting of 50% will respeed the clip to half the original speed, conversely, a setting of 200% will double the speed of the original.
Multiple	Respeeds the clip based on a multiple of the original duration and defines by how many times the respeded clip is longer or shorter than the original. The higher the multiple, the slower the speed of the rendered clip, for example, a multiple of 2 will render a clip twice as long as the original and a multiple of 0.5 will render a clip half as long.
Profile	Displays a speed profile graph on which keyframe nodes can be inserted to adjust the speed across the clip, for example it might be desired to slow down to a freeze in the middle of the clip and then return slowly to normal speed. See the section 3.4.7.1 <i>Using the Profile Graph</i> on page 46.

Changes to the selected Respeed modes are automatically reflected in the other Respeed options where appropriate.

3.4.3 Selecting a Respeed Interpolation Method

The interpolation methods scroll menu provides a number of options to process the respeded clip, each employing a different set of algorithms to achieve the desired result.

When respeeding a clip, the interpolation process can be controlled by selecting an option from the **Interpolation** scroll box (**Interpolate** is selected by default):



Figure 67 Available Respeed Interpolation Methods

Respeed Interpolation Option	Description
Interpolate	(Default) Any new fields or frames are created by interpolating the nearest adjacent fields or frames.
Nearest	Instead of creating new fields or frames when needed, the nearest existing field or frame is repeated.
Replicate	If a new field or frame is required, the last one is repeated.
Alchemist (CPU)	This interpolation option requires a CUDA card to be installed for faster processing. Uses enhanced algorithms to analyze the details of an image to generate the optimal result.
Flow Motion	Uses enhanced algorithms to analyze the details of an image to generate the optimal result. The Flow Motion algorithm has been optimized to improve the speed of processing.

3.4.3.1 Using Alchemist Respeed Algorithms

The available Respeed interpolation methods include Alchemist technology, to provide smooth-motion, respeed algorithms.

The Alchemist respeed option uses OpenCL graphical processing by default instead of CUDA. As a consequence, certain GPU memory restrictions should be considered before using this option as a minimum of 4 GB GPU memory is required to process 4K media.

Depending on the number and type of GPU card(s) installed (K20, K40, K80, etc.) there are three choices in the **System** section of the **Settings** menu.

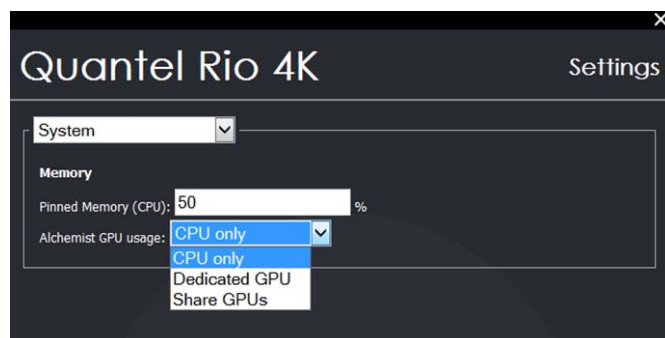


Figure 68 Selecting Alchemist GPU Usage for the Alchemist Respeed Algorithm

The Alchemist GPU usage settings are as follows:

- **CPU Only:** Processing by CPU only. No GPU will be used and performance will be slow. This is the default setting at installation; it is recommended to change this setting if CUDA is available.
- **Dedicated GPU:** Use this option when two or more GPUs are present (e.g., two K20s or one K80). The last GPU is reserved for OpenCL processing. Each K80 card has two GPUs.

- **Share GPUs:** 50% of VRAM on the last GPU is reserved for OpenCL processing.



If the available CUDA memory is less than 1.5 GB, then CPU will be used irrespective of the option selected in the Alchemist GPU usage menu.

3.4.4 Source Scan Conversion and Render Format Options

The Source Scan and Render Format dropdown menus provide options to define how the fields or frames in the source clip are processed:

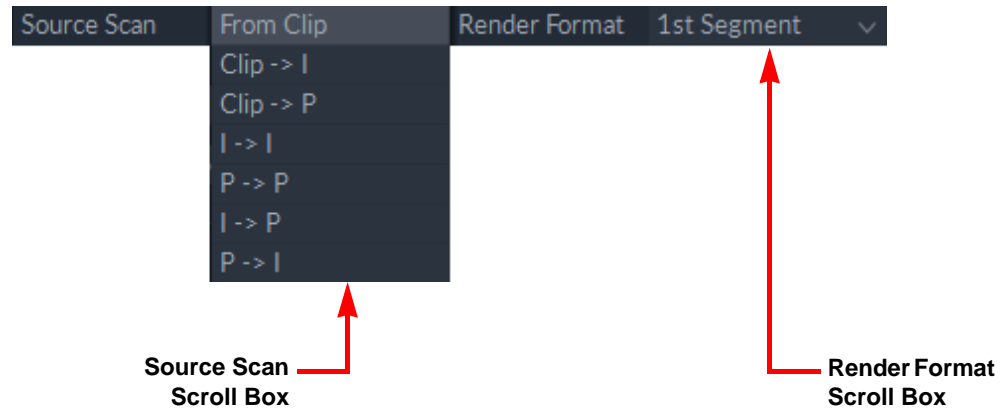


Figure 69 Source Scan and Render Format Options

The **Source Scan** options determine whether any interpolation is to be field-based or frame-based and are as follows:

Respeed Source Scan Option	Description
From Clip	(Default) Uses the same scan mode for interpolation as used in the source clip.
Clip → I	Interpolates the scan mode in the source clip (either interlaced or progressive) to render an interlaced output.
Clip → P	Interpolates the scan mode in the source clip (either interlaced or progressive) to render a progressive output.
I → I	Interpolates an interlaced output from an interlaced source clip.
P → P	Interpolates a progressive output from a progressive source clip.
I → P	Interpolates an interlaced source scan to render a progressive output.
P → I	Interpolates a progressive source scan to render an interlaced output.

The choice of source scan is determined by the original source material. The **Source Scan** mode helps to prevent flickering when processing fast moving, field-based images, where there is a large difference between two fields. It is recommended to select the appropriate mode for material that contains fast movement although this may soften the resultant clip.

The **Render Format** options are used to define how the output from the respeed process is rendered and the source of the output rendering parameters. The **Render Format** scroll box options are as follows:

Respeed Render Format Option	Description
Output Format	Uses the output render format from the Edit Timeline (or MLT FX) application to render the respeeded clip.

1st Segment	(Default) Uses the format of the first segment of the source material to render the respedded clip.
Clip Render Format	Uses the format of the source clip to render the respedded clip.

3.4.5 Reverse Checkbox

Select the **Reverse** checkbox to reverse the order of the frames to produce a clip that plays backward. The clip can be retimed to a new duration, as part of the reversing process, or it can retain the duration of the original clip.

Reverse can be used with all Respeed methods.

3.4.6 Audio Respeed Options

The Audio Respeed options define how to process any audio tracks, if present in the source material, during the respeed process.



Figure 70 Available Audio Respeed Options

The Audio respeed options are available only when the **Speed** setting lies between a minimum of 50% and a maximum of 200% to conform with the range of the audio plug-in.

When enabled, the **With Audio** checkbox, allows the audio track(s) to be retimed at the same time as the video. If the **With Audio** checkbox is not enabled, the rendered clip will not include audio.

The **Quality** scroll box (**Fast Quality** is selected by default) allows the quality of the audio conversion to be selected. Quality can be determined by selecting one of the following options from the scroll box:

Audio Quality Option	Description
Fast Quality	(Default) Lower quality output to allow faster audio conversion.
Good Quality	Medium quality output to optimize quality and audio conversion speed.
Best Quality	Highest quality output, that may extend audio conversion speeds.

The **Audio Type** scroll box, in which **Polyphonic** is selected by default, allows the appropriate type of audio re-sampling and pitch correction algorithm to be selected from the following:

- **Polyphonic:** Typically used for music audio tracks.
- **Monophonic:** Typically used for voice audio tracks.

3.4.7 Using Keyframes in a Profiled Respeed

A speed profile graph of the Floating Clip can be adjusted by defining a series of *keyframes* and setting the output speed at these points to establish a speed gradient between them.

Select **Profile** from the Respeed Modes scroll box, See the section 3.4.2 *Choosing a Respeed Mode* on page 42

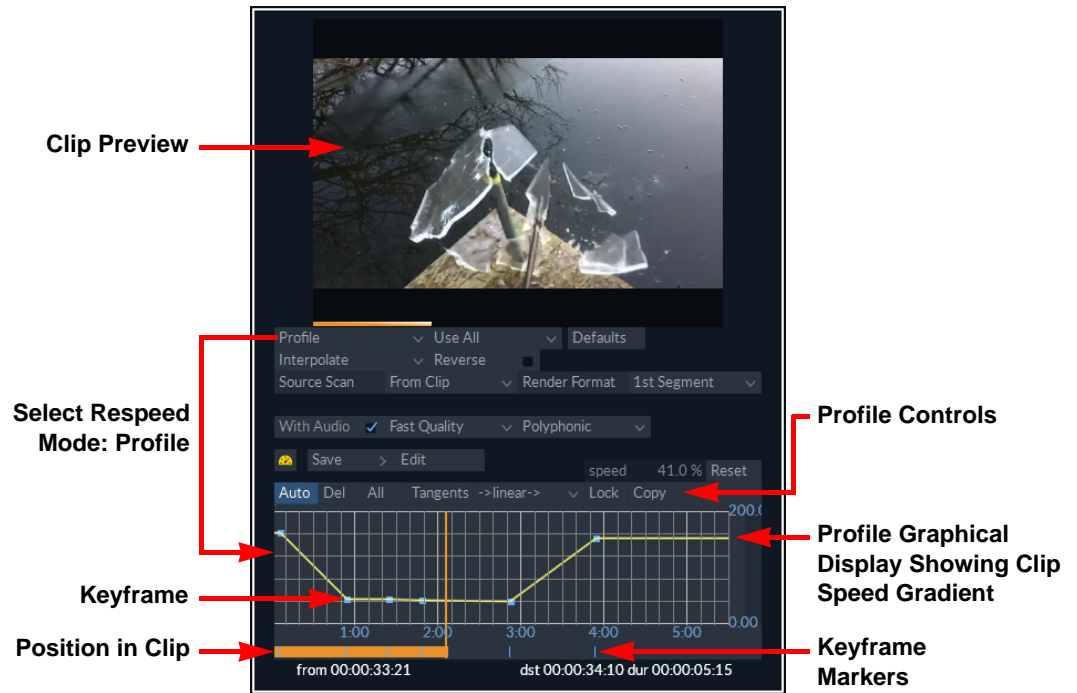



Figure 71 Profile Respeed Panel

3.4.7.1 Using the Profile Graph

The axes of the Profile graph are as follows:

- The X-axis represents the frames of the clip.
- The Y-axis represents the output speed.

If necessary, resize the Respeed panel using the resize icon  in the bottom right corner.

The vertical scale of the graph can be adjusted for ease of viewing using the vertical scroll bar in the right-hand Y-axis of the graph.

Press the zoom scroll bar and drag horizontally as follows, to scale the graph:

- Drag to the left to zoom in
- Drag to the right to zoom out.

When zoomed in press the bar and drag vertically to scroll up or down through the graph.

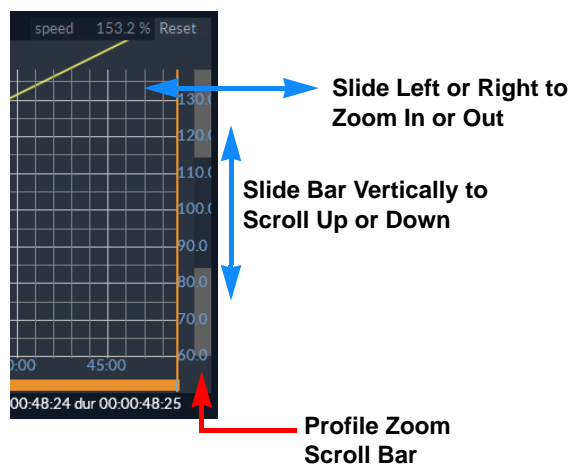


Figure 72 Zooming and Scrolling the Profile Respeed Graph

The following screens compare a standard unzoomed view of the profile and a zoomed in profile (note the scale change in the Y-axis.)

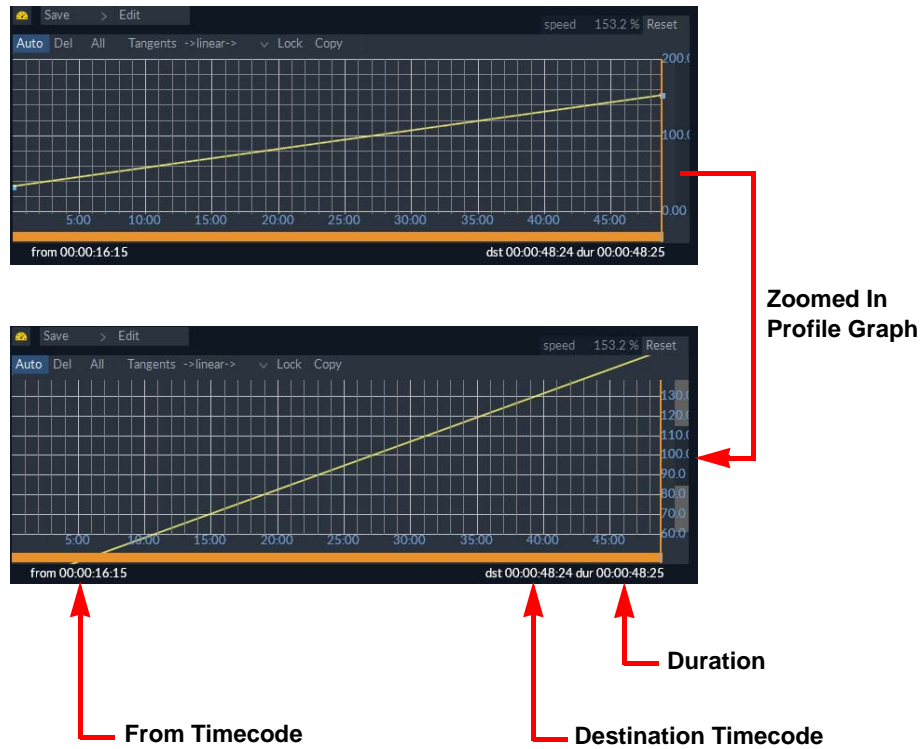


Figure 73 Zooming in to the Profile Respeed Graph

The Profile Respeed Graph shown above includes the following timecodes:

- **From timecode:** The original frame number of the clip
- **Destination timecode:** The target position of that frame in the clip *after* the respeed has been applied (i.e., its new frame number / timecode).

To switch the profile display between timecode or frame duration, press **dur** at the bottom right of the profile graph

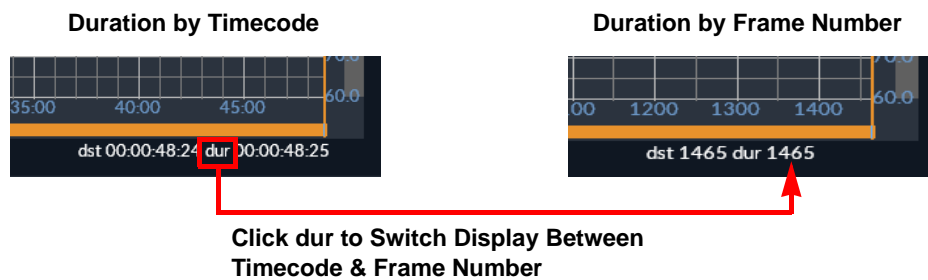


Figure 74 Switching Duration Display for the Respeed Profile

3.4.7.2 Using the Profile Controls

The Profile Controls along the top edge of the grid can be used to adjust the speed profile of the respeeded clip and have the following functions:

Profile Control	Description
Auto / Edit	Switch between automatic and manual editing of keyframe node points on the profile.
Del	Delete a keyframe node point.

All	Include all keyframe nodes in the selected action, for example, delete <i>all</i> nodes.
Tangents	Toggle the display of tangents to adjust a profile curve.
Transition Types	Displays Default by default. Scroll menu to select the preferred transition type for the profile line. Select from the following options: <ul style="list-style-type: none"> • Default • Curved • Stopped • Linear → • → linear • → linear → • → lin,hold → • → cve,hold → • User Set <p>See the section 3.4.7.4 <i>Profile Respeed Options</i> on page 49 for more information on these options.</p>
Lock	Lock together multiple nodes so that the desired action, for example, a move, is performed on all locked nodes.
Copy	Copy a node, or multiple nodes, and activate the Paste function.
Paste	Only becomes active following a Copy action. Allows copied nodes to be pasted to the profile graph.
Speed	Field to enter the speed (as a percentage of the original speed) at a keyframe node using the numeric keypad. (100% being normal speed, 200% being twice as fast and 50% being half as fast, etc.)
Reset	Resets the profile back to the original speed.

3.4.7.3 Inserting Keyframes in the Profile

Both automatic and manual methods are available to insert keyframe nodes into the profile to adjust the speed at those points.

To insert a node using the automatic mode, make sure that **Auto** is selected, then either:

- Press at the desired point on the profile curve to insert a keyframe node at that point, or
- Change the percentage value in the **speed** box using the numeric keypad. A keyframe is inserted automatically to the current frame each time the speed is changed.

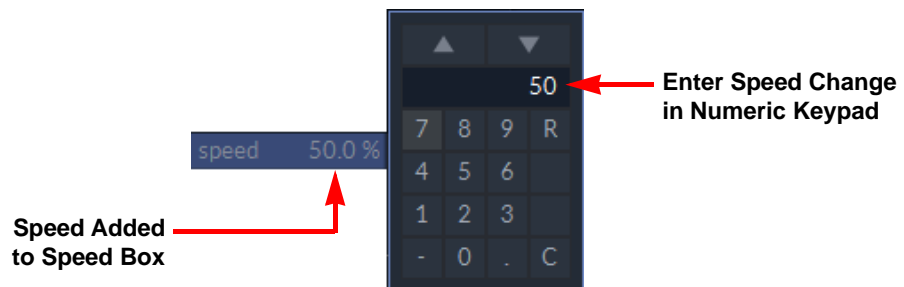


Figure 75 Entering the Respeed Percentage Increase or Decrease

To insert a keyframe node manually:

1. Press **Auto** to switch off automatic mode.

2. Position the current frame marker at the desired location along the profile.
3. Enter the speed, to set for the keyframe node at that point, into the speed box.

On entering the target speed, the **Auto** button changes to display **Edit**: Edit

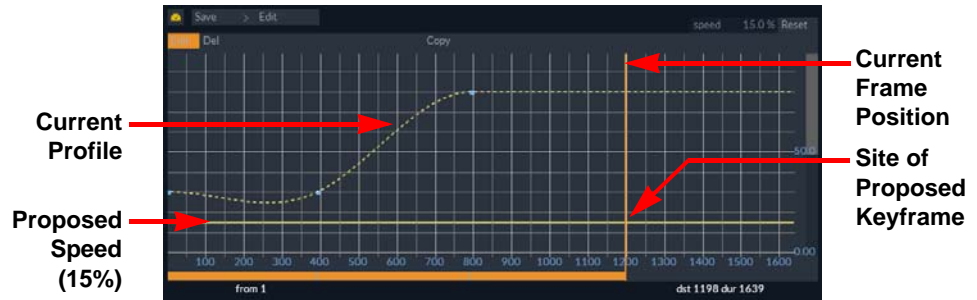


Figure 76 Inserting a Keyframe Node in the Respeed Profile

The target speed is plotted on the graph using a solid line and the existing profile is shown as a dashed line.

4. Press Edit to accept the change and change the profile to incorporate the new speed change.



Figure 77 Keyframe Node Inserted into Respeed Profile

If the effect of the proposed change is unacceptable, first press Del then press the newly inserted keyframe node. This deletes the node and restores the profile to the previous curve.

3.4.7.4 Profile Respeed Options

When a profiled Respeed is chosen, specific options become available to define the resulting clip as described below:

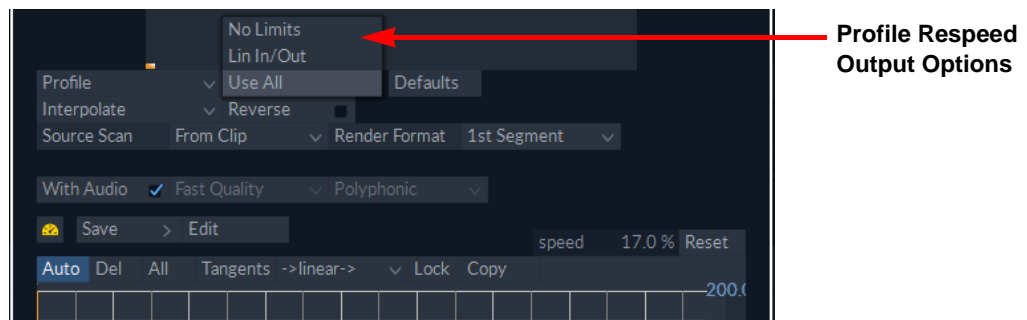


Figure 78 Profile Respeed Output Options

The profiled Respeed output options are as follows:

Profiled Respeed Output Option	Description
No Limits	Allows the duration of the resulting clip to exceed the amount of frames available and create a freeze on the last frame.
Lin In/Out	Sets a linear transition between three keyframes. The three keyframes are automatically set when selecting Lin In/Out ; one at the start, one in the center and one at the end.
Use All	(Default) Limits the duration of the resulting clip based on the number of frames available in the original clip.

The output speed of the resulting clip is selected as a percentage in the **speed** box (100% being normal speed, 200% being twice as fast and 50% being half as fast etc.)

With **Auto** mode enabled, the **Transition** scroll box is available, with **Default** selected by default. The type of transition between each keyframe can be changed by selecting a different option from the scroll box:

Transition Type	Description
Default	Provides the best rate of change between keyframes to allow a smoother transition.
Curved	The rate of change speeds up as it leaves the keyframe and slows down as it approaches the next keyframe creating a curved shape on the graph.
Stopped	The rate of change stops as it reaches the next keyframe.
Linear→	The rate of change remains constant as it leaves the keyframe, creating a linear graph.
→linear→	The rate of change remains constant into the keyframe and out of the keyframe.
→linear	The rate of change remains constant into the keyframe.
→lin,hold→	The rate of change remains constant into the keyframe and then stops until the next keyframe.
→cve,hold→	The rate of change slows down as it approaches the keyframe and then stops until the next keyframe.
User Set	The rate of change into and out of the keyframe is set using the tangents on each keyframe of the curve.

When the **Tangents** box is selected, tangent markers display at each keyframe node on the curve. These provide an alternative method to adjust the shape of the curve into and out of each keyframe.

Press and drag a tangent to modify the curve between the transitions at that point. The active arm of the tangent is shown in blue.

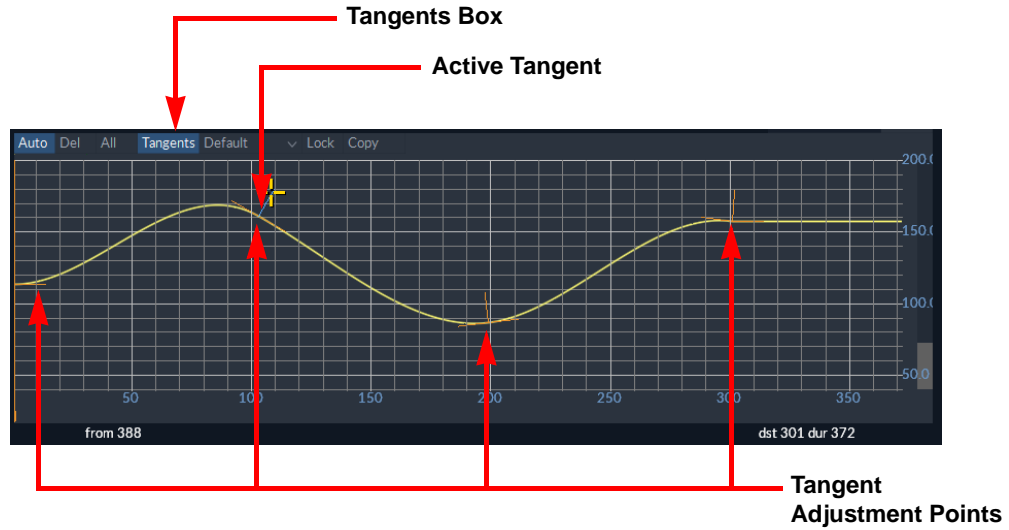


Figure 79 Tangent Adjustment Points for Respeed Profile Curve

3.4.7.5 Copy, Move and Lock Keyframes

After keyframes have been inserted onto the graph they can be repositioned by pressing and dragging.

Dragging a keyframe up increases the speed of the clip from that frame onwards by reducing the number of frames. Dragging a keyframe down reduces the speed of the clip from that frame onwards by increasing the number of frames.

Dragging a keyframe horizontally moves the position in the clip where a change in speed occurs. The vertical cursor bar indicates the current frame.

With **Auto** active, groups of keyframe nodes on the graph can be selected by making a lasso. They can then be locked together using the **lock** function, so that they can all be moved by the same amount either numerically or by dragging the cursor.

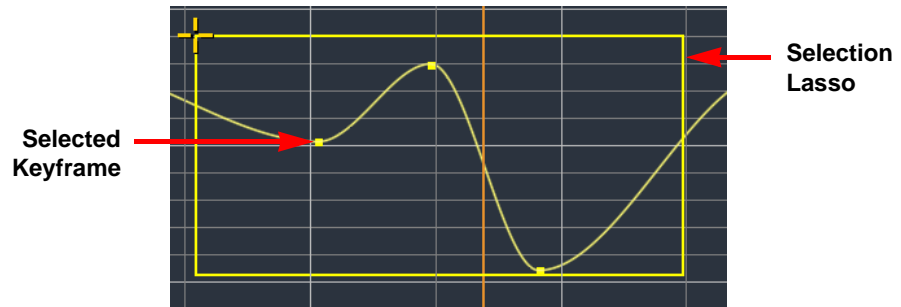


Figure 80 Keyframe Selection in Respeed Profile Curve

The edges of the box formed when lassoing points can be moved to change the frame on which the keyframes occur and the amplitude of the change between the lassoed keyframes.

Moving the left or right edges of the lasso box moves the keyframes earlier or later in the effect while the keyframe closest to the opposite edge remains fixed.

Moving the top and bottom edges of the box increases or decreases the rate of change between the keyframes while the keyframe closest to the opposite edge remains fixed.

Holding down the <Ctrl> key while dragging the left or right edges of the box fixes the center keyframe and expands or contracts the group around this keyframe.

Selected keyframes can also be copied and then pasted to the current cursor position, further along the timeline, at the same speed levels in the profile graph, adjusting the profile shape accordingly.

3.4.7.6 Delete Keyframes

To delete a single keyframe:

1. Press **Del** from the panel of options above the graph. It highlights to indicate that it is activated.
2. Press on a keyframe to delete.
3. Repeat steps 1 and 2 for each keyframe to be deleted.

Alternatively, to delete multiple keyframes:

1. Draw a lasso around the keyframes to be deleted.
2. Press **Del**.


All keyframes within the lasso are deleted.

To delete all keyframes from the graph:

1. Press **Del**.
2. Press **All**.

All keyframes are deleted from the graph.

3.4.8 Render and Save a Respeed

Press the render icon  to generate the respeeded clip using the specified settings. An orange render bar extends across the preview to show the progress of the rendering.

On completion of the rendering process, either:

- Press and drag the Save box to place a copy of the respeeded clip on the desktop, or
- Press **Save** to open the Save dialog and save the respeeded clip back to the Clips bin. The Save dialog opens with the following **Save** options:

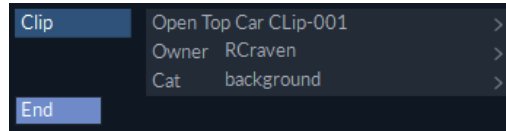


Figure 81 Saving a Respeeded Clip

Enter the save details, then press **End**. If no title is entered, then by default the respeeded clip is saved as *ClipTitle-Numeric Suffix*, with the numeric suffix starting at **-001**.

The **Edit** function is available only for products that include the Edit application. Press **Edit** to insert the respeeded clip at the current cursor point on the Edit application timeline.

Any clip that is retimed using the **Respeed** function includes a full history of the process and is highlighted with a pink line along the bottom of the video title bar in the timeline

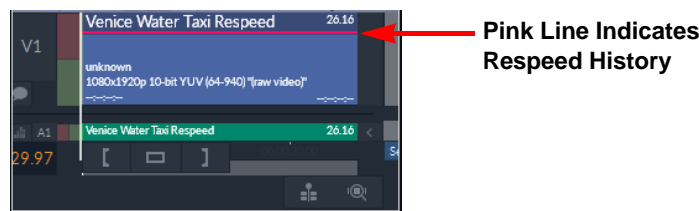


Figure 82 Respeed History Highlighted in Timeline

If the **Respeed** menu is opened for a Floating Clip with a respeed history, the respeed settings are automatically displayed and an alternative respeed type and/or speed can be selected for the clip. This also applies to profiled respeeds, see the section 3.4.7.4 *Profile Respeed Options* on page 49.



Figure 83 Respeed History Saved with Clip



Respeed history is always retained, even if MLT FX processes are subsequently added.

3.5 Detecting Scene Changes in a Floating Clip

The **Scene Detect** function automatically detects a change of scene within a clip, to generate a copy of the original clip that includes edit points (cuts) where it detects a change of scene.

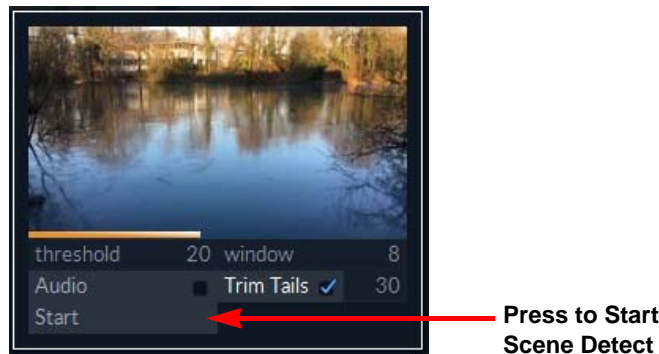



Figure 84 Scene Detect Pop-up Panel

To run Scene Detect for a Floating Clip:

1. Press the **More** options menu icon  outside the top-right corner of the Floating Clip.
2. Select the option **Scene Detect** from the menu.

This opens the Scene Detect pop-up panel with the default settings.

3. Set the **threshold** value (**20** by default) to control the sensitivity of the system to changes in an image.

If the **threshold** value is set too low, some scene changes may be missed; if set too high, edit points may be inserted at each frame in the clip.

4. Set the **window** value (**8** frames by default) to define the detection of the rate of change from one scene to the next.

If the **window** value is too small then the scene detector may insert edit points on every frame in a dissolve or zoom. If the **window** value is too large no scene changes are detected.

5. It is recommended to deselect the **audio** checkbox to avoid saving unnecessary audio fragments.

Checking **audio** detects cuts on both video and audio layers, but produces a larger file size.

6. Set the **Trim Tails** value (enabled and set to **30** by default) to specify the tail amount that remains on the cuts.

Tails are required in order to add any transitions to a cut point. Having tails allows the duration of the clip, or individual clip segments, to be extended.

7. Press **Start** to begin the Scene Detect process.

On completion, a **Save** box is displayed.

To cancel the process, press **Stop** at any point.

8. Press and drag from the **Save** box to the desktop to create a new Floating Clip.

Alternatively, press the **Save** box and enter the required title in the **Save** pop-up to save the clip in the Clips Bin with the required **name**, **owner** and **category**.

9. Press **End** to close the menu.

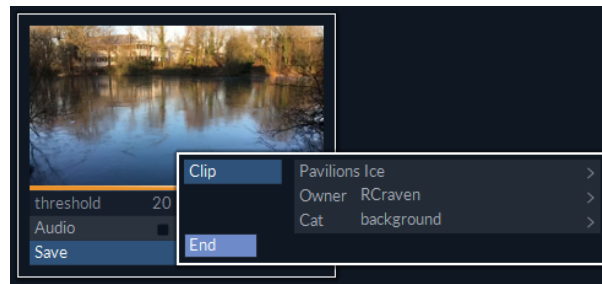


Figure 85 Saving the Clip from Scene Detect

4. Stereo Floating Clips

4.1 Stereo 3D Media

Stereo 3D media includes both left and right eye components and is displayed as a single video layer e.g., **V1**. A blue line across the clip segment indicates that the clip is stereo. Stereo Floating Clips can be edited and managed in the same way as mono Floating Clips.

4.2 Metadata Display on Clip Segment

Metadata for each eye (Left and Right) displays on the video track of each stereo segment on the Floating Clip timeline. This includes the originator ID, pixel aspect, and In timecode, together with any MLT FX processes (e.g., **color**, **dve**, **text**) that have been applied to the clip.

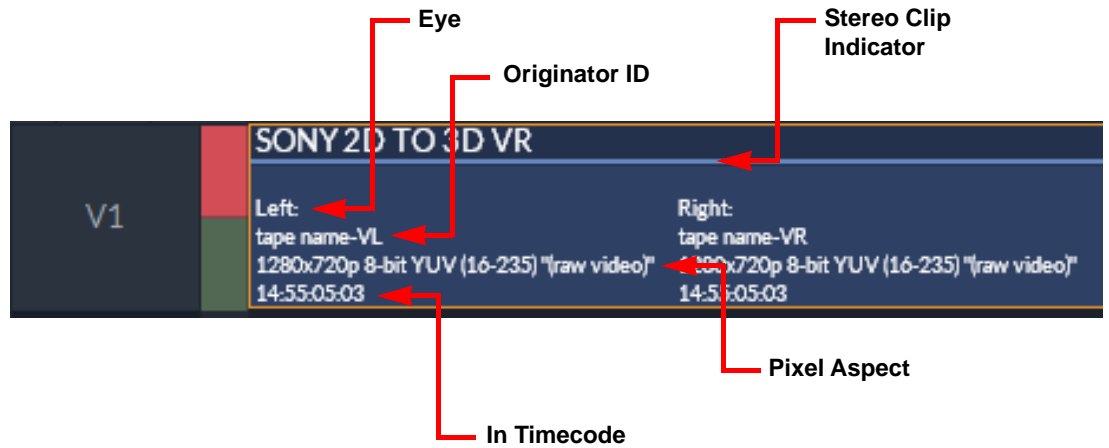


Figure 86 Left and Right Metadata in Timeline of Stereo Clip

The Out timecode for each eye is displayed at the right-hand side of each stereo segment on the Floating Clip timeline.

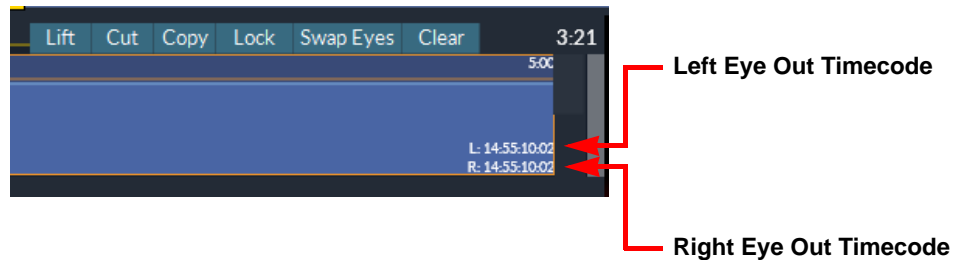


Figure 87 Left Eye / Right Eye Timecodes in Timeline of Stereo Clip

4.3 Using the Stereo Video Window Display

The video window of a stereo Floating Clip displays a divider bar that splits the image into left eye and right eye displays. To reveal more of either eye press the divider and drag either to the left or right.

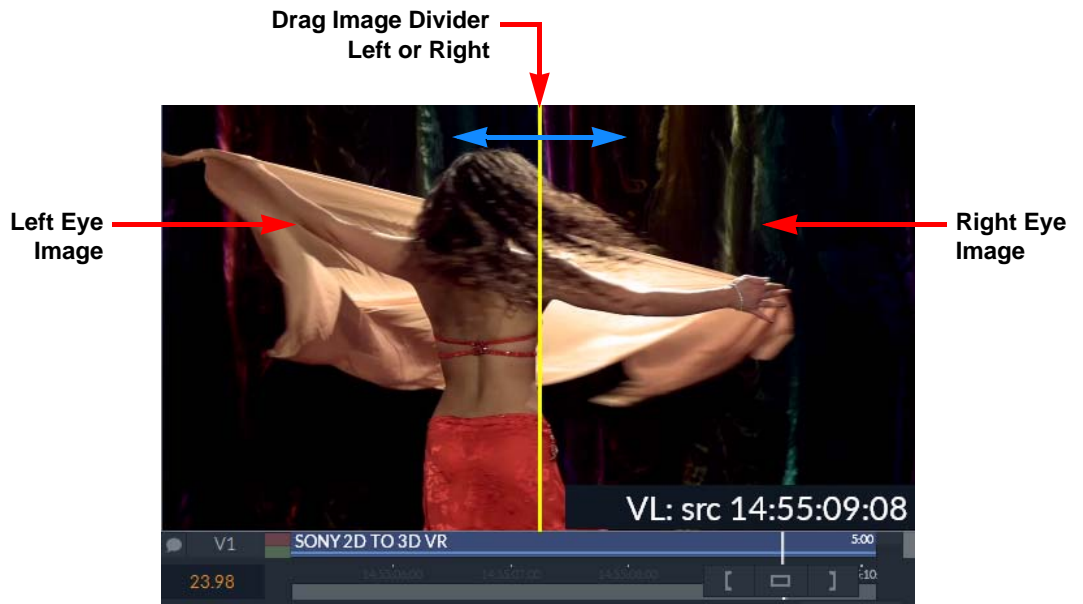


Figure 88 Stereo Video Window

Switch the view of the video window by pressing the divider line as follows:

- Press the divider once, to display a **half-mix** view (a mix of both eyes) to the left of the divider line. The right eye is displayed to the right of the divider.

The divider becomes a small vertical bar at the top of the display in this mode. Drag the divider line left or right to reveal more or less of the half- mix view.

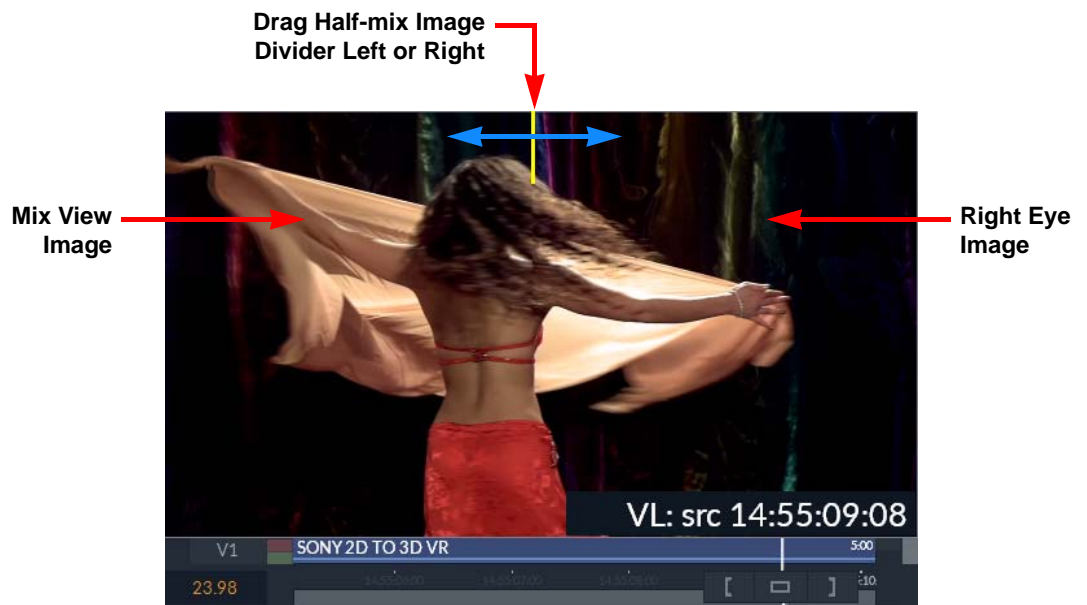


Figure 89 Stereo Half-mix Image of Stereo Clip

- Press the divider a second time to display an **emboss overlay** view, indicating a clear view of the vergence offset between the two eyes. The divider displays horizontally across the image in this mode.

Drag the divider up or down to reveal more of less of the emboss overlay view.

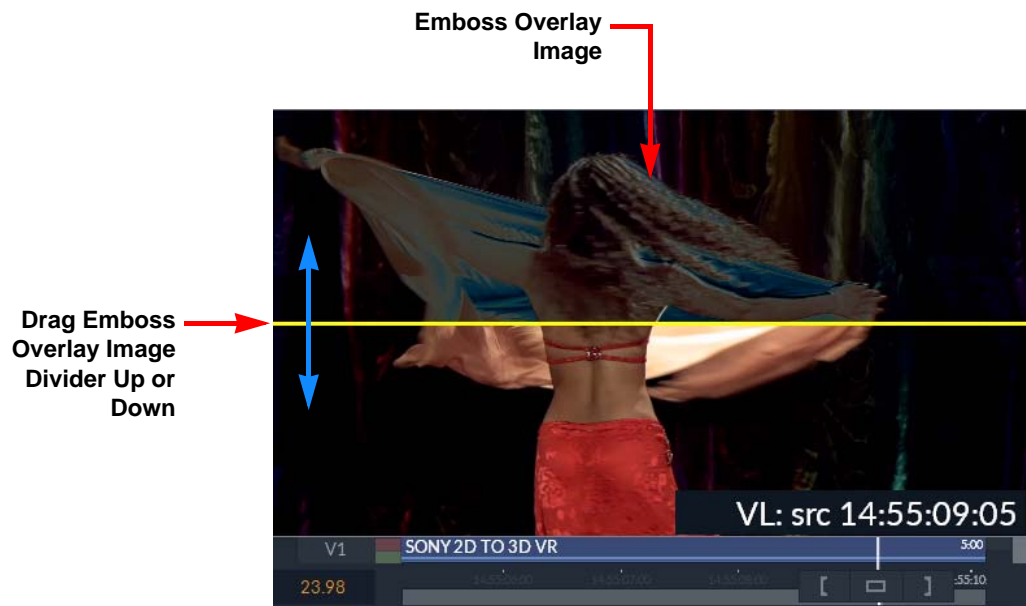


Figure 90 Emboss Overlay Image of Stereo Clip

Press the divider again to return the view to the original, left eye / right eye vertical split.

4.3.1 Combining Eyes on the Desktop to Create a Stereo Clip

Stereo media is often recorded and imported into the system as separate left and right eye files. The two eyes can then be combined on the desktop to create a stereo clip.

4.3.1.1 Clip Requirements

The left and right eye mono clips must have some identical elements before they can be combined into a single stereo clip, including:

- Number of tracks
- Number of segments
- Total number of frames
- Number of frames per segment
- Render video information
- Size

4.3.1.2 Combine Left and Right Eyes

To combine left and right eyes on the desktop:

1. Hold down <Ctrl> and <Shift> on the keyboard.
2. Press and drag the right eye Floating Clip over the left eye Floating Clip.
3. Release cursor pressure to drop the right eye clip onto the left eye clip and a blue outline displays on the left eye Floating Clip.

This creates the stereo clip by combining the left and right eye clips to create a single stereo Floating Clip, with a blue border around the Floating Clip.

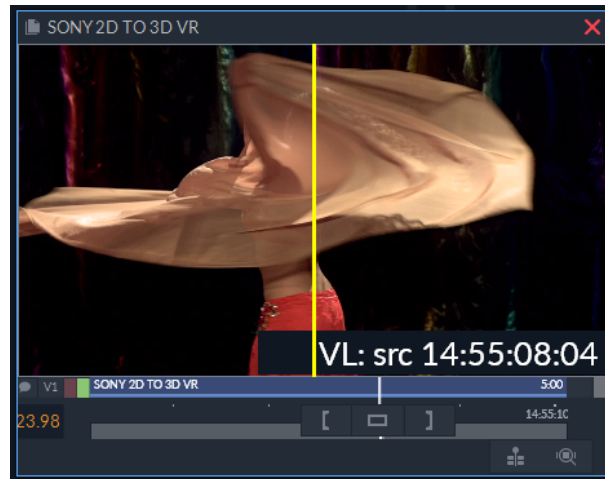
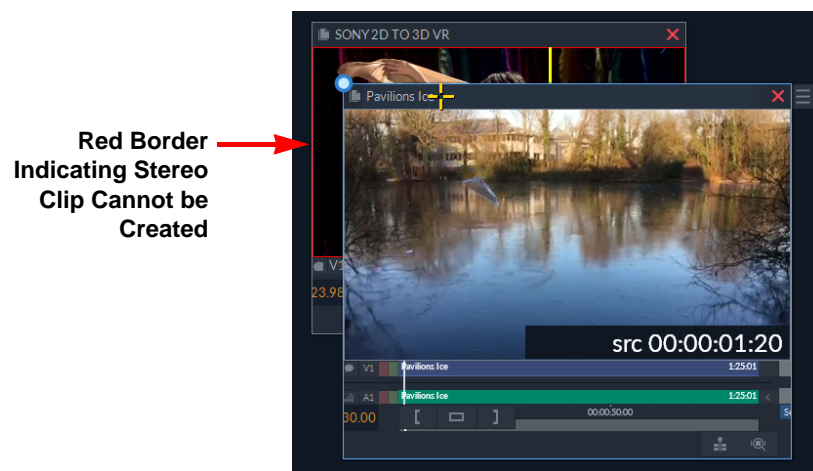


Figure 91 Single Stereo Floating Clip Created

If a stereo clip cannot be created from the two Floating Clips, a red outline displays on the left eye Floating Clip



92 Failure to Combine Left and Right Eyes

A warning message also displays if the two Floating Clips are not compatible as a stereo pair.

Cannot make stereo, see log for details

4.3.2 Make Stereo Clip

For an alternative method to combine two Floating Clips into a single stereo clip:

1. Place the two mono clips to make stereo onto the desktop as Floating Clips.
2. Select the two clips using either the lasso method or by holding <Ctrl> and tapping on each Floating Clip in turn.

Both clips have a blue outline to indicate that they are selected.

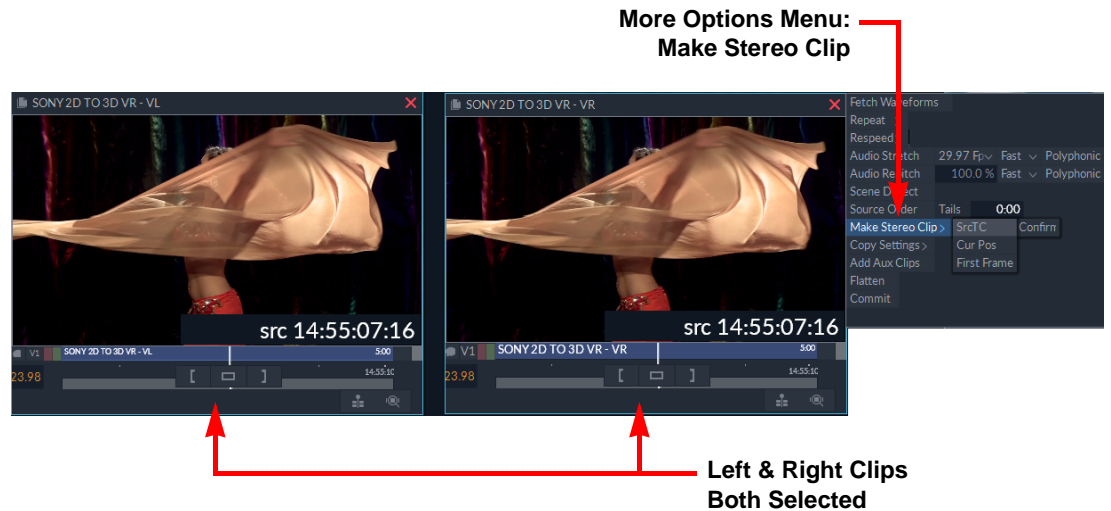


Figure 93 Generating a Stereo Clip

3. Press **[Menu]** to open the More options menu by hovering directly outside the top-right corner of either of the Floating Clips.
4. Select **Make Stereo Clip**.
5. From the scroll box select whether to create the stereo clip based on:
 - **SrcTC:** Source timecode
 - **Cur Pos:** Cursor position
 - **First Frame:** The first frame
6. Select **Confirm** to create the stereo Floating Clip.

4.3.3 Split VL/VR Tracks via Desktop

A stereo Floating Clip can be split into separate left and right eye Floating Clips. This function is useful to play-out or export each eye separately.

To split a stereo Floating Clip:

1. Press **[Menu]** to open the More options menu by hovering directly outside the top-right corner of the stereo Floating Clip.

2. Select **Split VL/VR**.

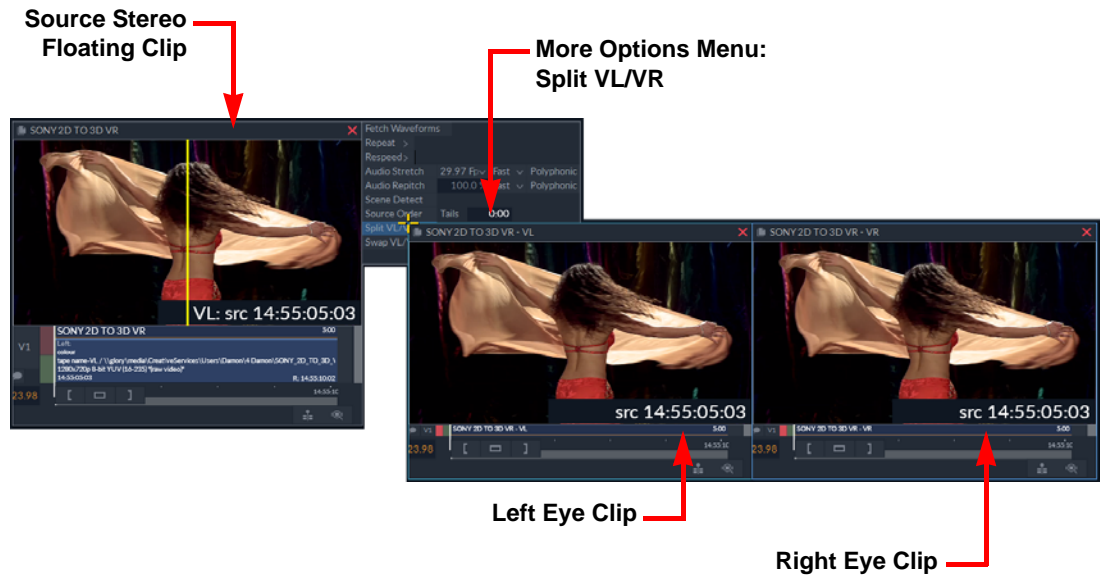


Figure 94 Splitting Left and Right Eyes from a Stereo Clip

Two separate Floating Clips are placed on the desktop with **-VL** appended to the clip title for the left eye clip, and **-VR** appended to the right.

The left and right eye clips are locked together so that they can be easily saved to a bin by dragging and dropping. Press on the desktop to unlock the two clips.



If the stereo clip has audio, the audio displays on both the left and right clips.


4.3.3.1 Remake Stereo Clip

With the left and right Floating Clip's still locked together an additional option displays in the More options menu allowing the left and right eyes to be remake into a stereo clip.

Select **Make Stereo Clip**, choose the required settings and press **Confirm** to remake the two eyes into a stereo clip.

4.3.4 Swap Eyes on All Tracks via the Desktop

The eyes on all tracks can be swapped by selecting **Swap VL/VR** from the More options menu.

1. Press  to open the More options menu of the stereo Floating Clip.
2. Select **Swap VL/VR**.

The eyes are swapped globally through all tracks and segments of the clip and also the underlying rushes.

5. Working with the Floating Clip Audio Track Controls

5.1 Hidden Audio Menu Options

There are two hidden audio menus available on the Floating Clip timeline that allow audio levels to be controlled and channel settings to be assigned.

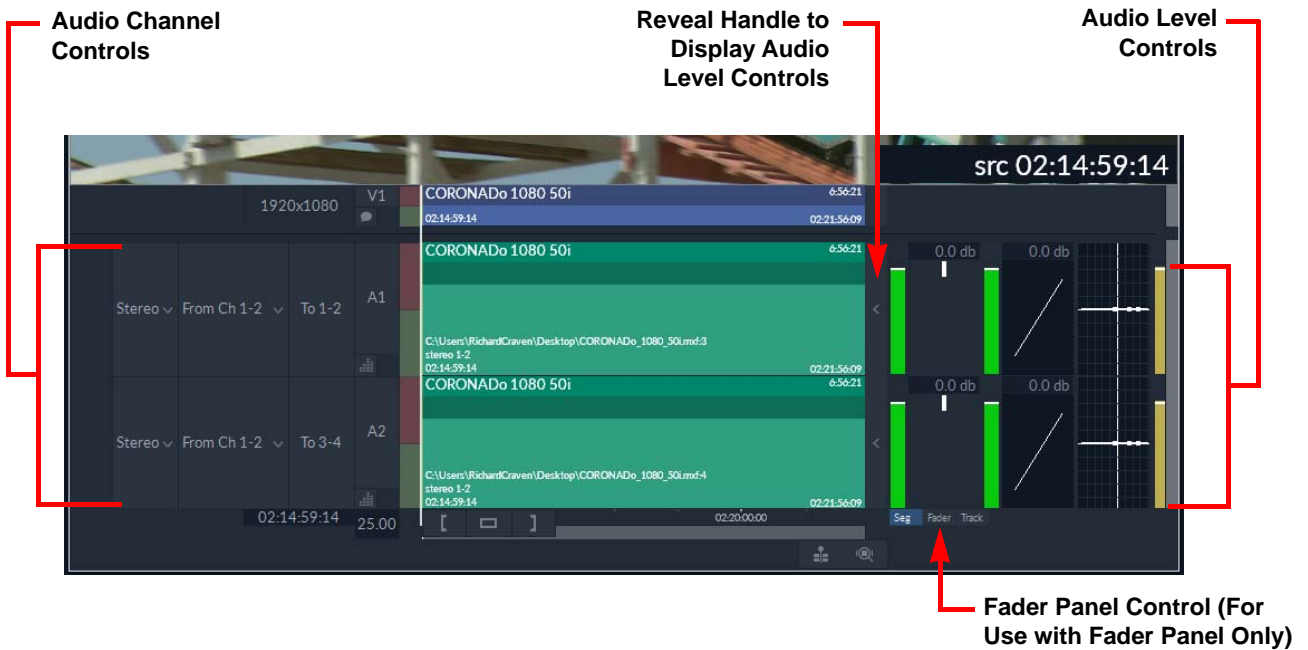



Figure 95 Hidden Audio Menus in a Floating Clip Timeline

5.1.1 Reveal Audio Level Controls

1. Press the reveal button  to the right of the Floating Clip timeline and drag to the left.

For a single audio track, the audio level controls appear as follows:

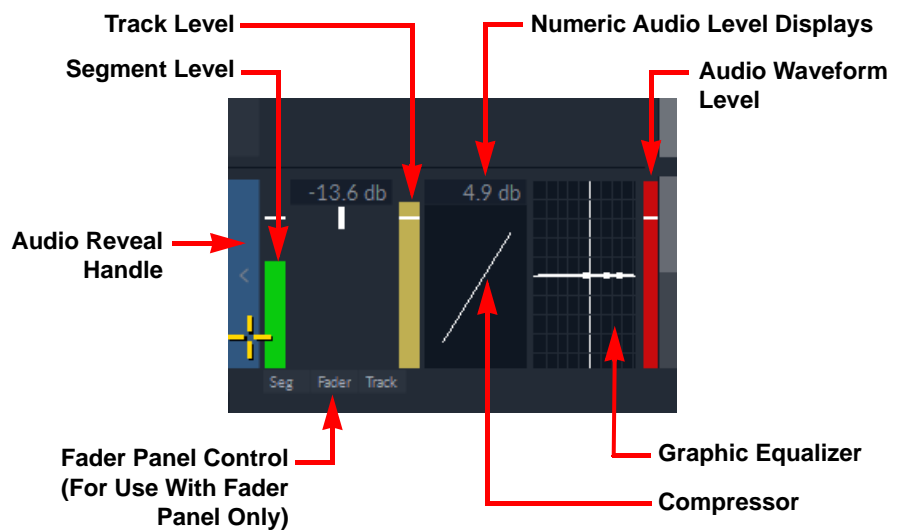


Figure 96 Hidden Audio Level Controls

2. Drag the reveal button  to the right to hide the audio level control again.

5.1.2 Reveal Audio Channel Controls

To reveal the audio channel controls:

1. Press any track filter box (e.g. **V1**, **A1** etc.).
2. Drag to the right to reveal additional audio input/output controls to the left of the tracks.

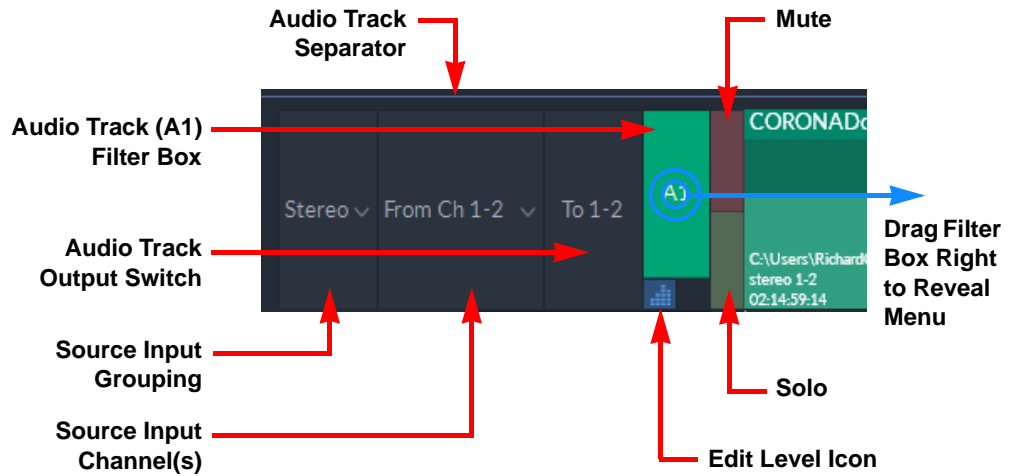


Figure 97 Hidden Audio Channel Controls

3. Drag to the left to hide the audio channel controls again.

The Mute and Solo boxes have the following functions:

- **Mute:** Mutes the corresponding track so that it is not included in the overall output. Multiple tracks can be muted at any one time.
- **Solo:** Selects the corresponding track to be monitored. Only one track can be soloed at any one time.

The Mute and Solo boxes do not affect the video or audio if the clip is saved or published.

5.2 Setting Audio Levels

To adjust audio levels, use one of the methods described in the following sub-sections:

5.2.1 Using the Hidden Audio Levels Menu

Audio level indicators are revealed by opening the hidden menu on the right of the timeline, allowing the audio levels to be adjusted for each audio track and audio segment. The panel displays controls for audio level adjustments, track panning (stereo clips only), a three band graphic equalizer and an audio compressor/limiter.

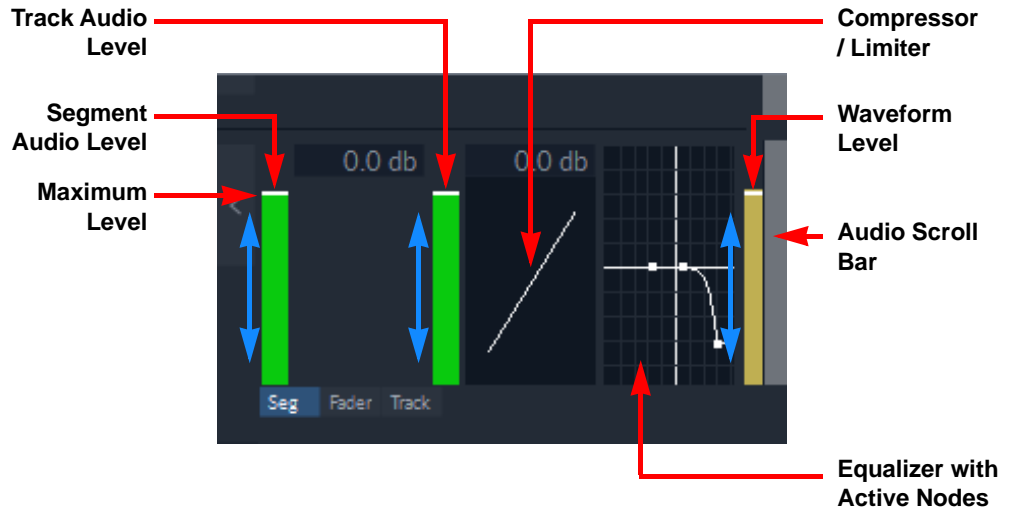


Figure 98 Adjusting the Audio Level Controls

To adjust the level of a track segment, place the cursor on the **Segment Level** indicator and slide up to increase the volume or down to decrease the volume of that segment.

To adjust the level of the whole track, place the cursor on the **Track Level** indicator and slide up to increase the volume or down to decrease the volume.

5.2.1.1 Using the Timeline

Audio levels can also be controlled directly on timeline segments by holding down <Ctrl> and clicking on the highlight then dragging up or down to increase or decrease audio levels for all audio tracks present.

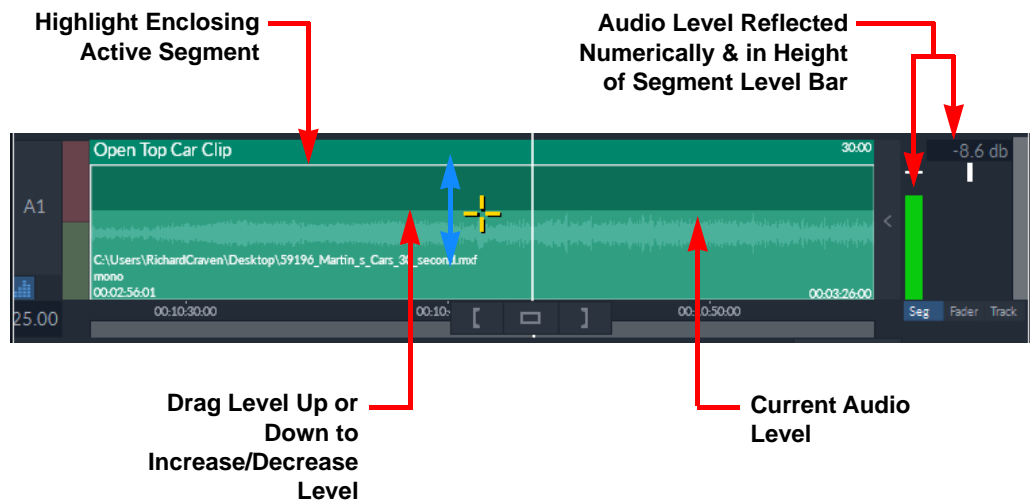


Figure 99 Adjusting Audio Controls in the Timeline

If the clip contains several segments, the audio level of each segment can be adjusted independently.

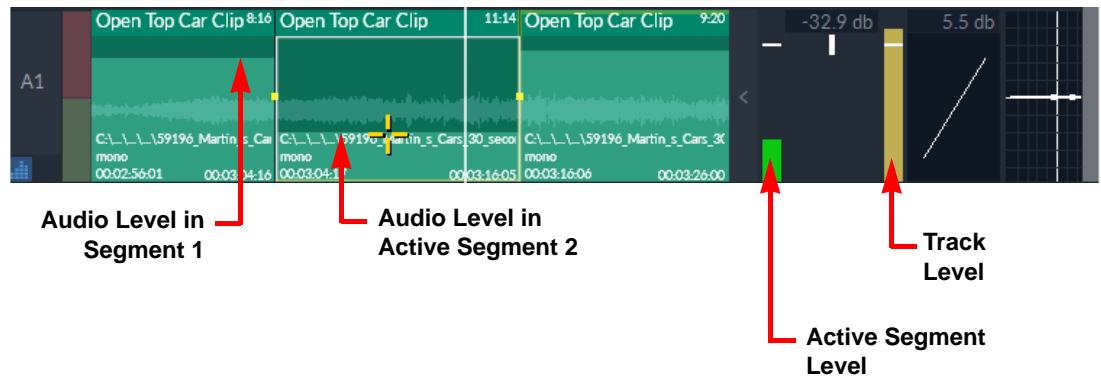



Figure 100 Adjusting Audio Levels at the Segment Level

5.2.1.2 Using the Audio Tools

Audio levels can also be adjusted by pressing the **Edit Level** button  on the required audio track filter (e.g. **A1**) to activate the audio tools, for that audio track.

The audio levels of the segments in that track can then be adjusted using the available audio tools.

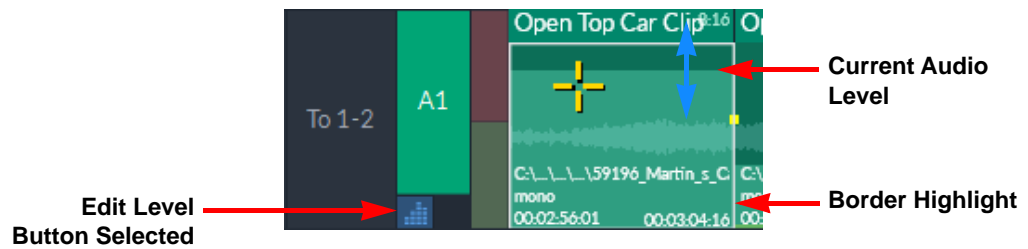


Figure 101 Activating the Audio Tools



Although the audio tools are available for Floating Clips it is recommended to use these tools in the Edit Timeline rather than with Floating Clips. See the [Timeline Editing User Guide](#) for more information.

5.2.2 Assign Audio Channels



To display the following functions, tick the **Audio Channel Selection** checkbox in the **<F1> Configuration Window Clips** menu.

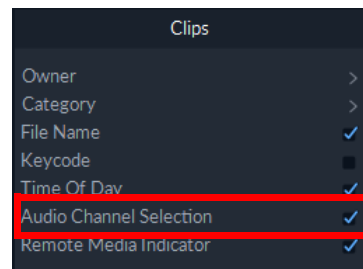


Figure 102 Activating Audio Channel Selection in the F1 Configuration

By default the system uses the audio assignments that were set when recording. To change the audio play-out channels for a clip:

1. Access the hidden audio channel controls.
See the section 5.1.2 *Reveal Audio Channel Controls* on page 63.
2. Change the groupings options in the **Source Groupings** box by pressing the scroll box and selecting the desired grouping.
3. Select the input channels in the **Source Channels** box by pressing the **From Ch #** scroll box and selecting the required source channel.
4. Select the output grouping from the Audio Output menu by pressing the **Output Channel** box and selecting the desired grouping from the **Output** scroll menu options:
 - Mono
 - Stereo
 - Quad
5. Select the output channel from the Audio Output menu by pressing the **Output Channel** box and selecting the required output channel from the **Out To** scroll menu options.

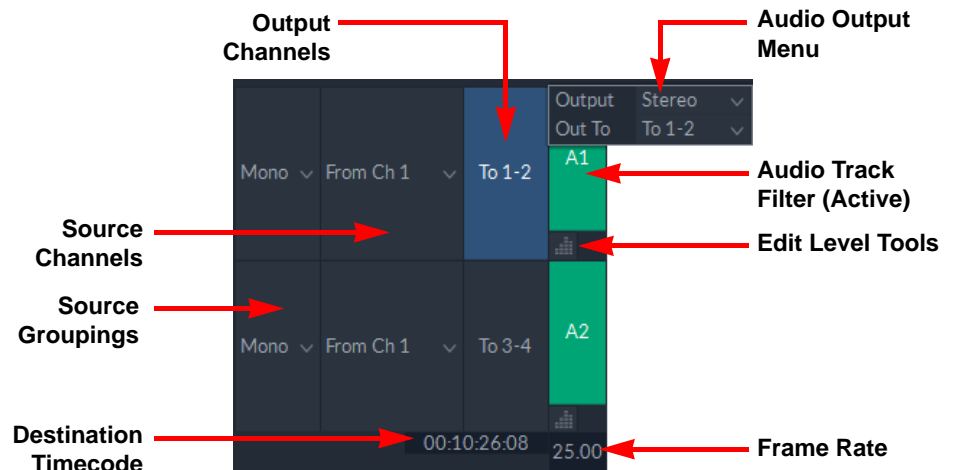


Figure 103 Assigning Audio Output Channels

5.2.2.1 Audio Grouping Options

The **Source Groupings** scroll box displays the source grouping of the clip: **mono**, **stereo**, **quad**, etc. This can be changed (where available) by scrolling to a new grouping. For example, to split a stereo track out to two separate mono tracks select **mono**.

If the grouping box is orange this indicates that the clip has a mixed source grouping. For example, **mono** set in an orange box may indicate a mixed mono/stereo source.

Grouping options are:

Grouping	Description
Mono	An individual audio channel (e.g., 1, 2, 3, 4 etc.).
Stereo	A pair of audio channels (e.g., 1 & 2 or 3 & 4 etc.).
Quad	A group of 4 audio channels (e.g., 1, 2, 3 & 4 or 5, 6, 7 & 8 etc.).
8 Channel	A group of 8 audio channels (e.g., 1, 2, 3, 4, 5, 6, 7 & 8 or 9, 10, 11, 12, 13, 14, 15 & 16).

16 Channel	A group of 16 audio channels (e.g., 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 &16).
-------------------	---

5.2.2.2 Setting Source and Output Options

The Source Channels and Output Channels scroll boxes control which source channels are output to which output channels.

From Ch. # This box displays the available source channels. With no audio segments selected, this setting affects the whole audio track.

If the timeline audio segments are originally from mixed channel sources, or a segment's source has subsequently been changed, the label text changes color to orange indicating that the setting is not global for the whole track.

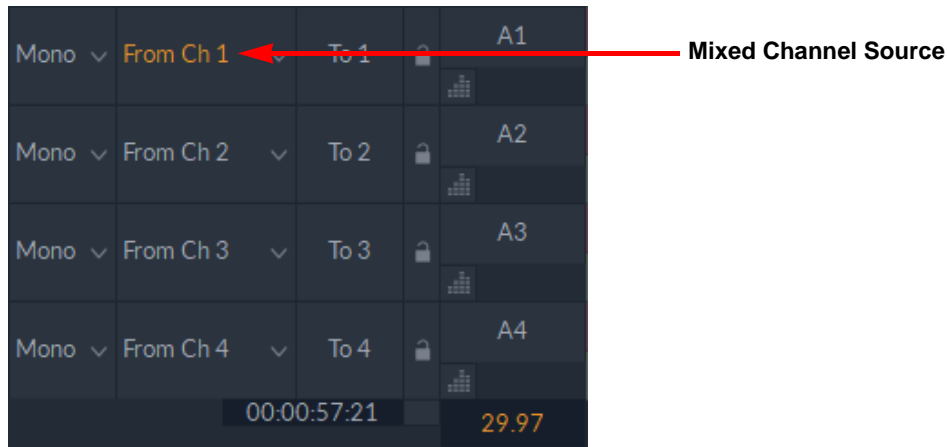


Figure 104 Mixed Channel Audio Sources

To # This box displays the available output (i.e., speaker) channels. The output channel settings made in this box always affect the whole track; an individual segment cannot be changed.



A stereo audio track can be split by right-clicking on either the track filter box (e.g., A2) or the actual audio track and selecting Split Audio.



Standalone workstations with AVIO3 or eVidIO cards support 16 channels. sQ workstations support a maximum of 16 channels.

5.2.3 Too Few or Too Many Channels

If there are too few input channels for the selected output channels, the most appropriate input channel is automatically duplicated. For example, if a mono track is output to channels 1 & 2 then the mono track is placed on both channel 1 and channel 2. If a stereo track is output as a quad (e.g. channels 1, 2, 3 & 4) then the stereo pair 1 & 2 also appear on channels 3 & 4.

If there are too many input channels for the selected output channels, unused channels are ignored.

5.2.4 Enable/Disable Audio Track Filter Boxes

Tap on track filter boxes (A1, A2 etc.) to activate/deactivate audio tracks. Only activated tracks (green) are affected when any subsequent processes are applied. Any disabled tracks remain unaffected. This is useful when performing video-only or audio-only editing.




If none of the tracks have been selected, any process that is applied affects all the tracks.

5.2.5 Audio Stretch

Stretch the audio tracks of any Floating Clip in order to sync with a video track or to match a specific frame rate.

5.2.5.1 Stretch Audio Tracks

To stretch an audio track:

1. Open the **More** options menu by pressing the More options icon  outside the top-right corner of the Floating Clip.

The available audio stretch options display to the right of the **Audio Stretch** box. Do not press **Audio Stretch** until after specifying the required settings.

2. Specify the required settings.
3. Press the **Audio Stretch** box to start the stretch process.

When complete the resulting clip maintains the original video frame rate but contains the new stretched audio tracks.

5.2.5.2 Audio Stretch Options

The audio stretch process has a number of options available to suit the type of audio material to be stretched and the desired level of accuracy.

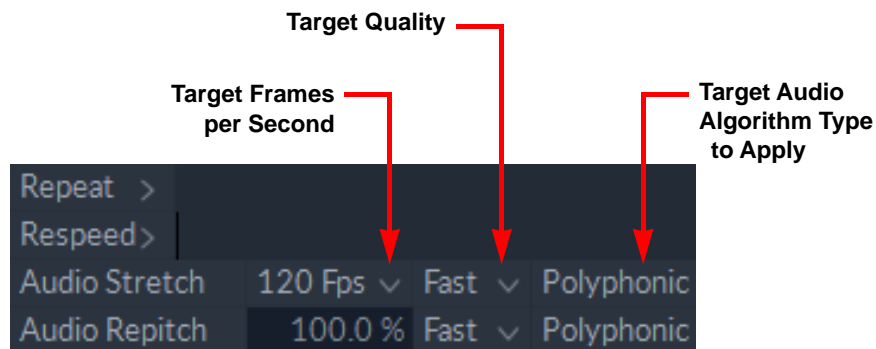


Figure 105 Audio Stretch Options

Option	Description
FPS	The FPS (Frames per Second) scroll box allows the target audio frame rate to be selected from: 23.98, 24, 25, 29.97, 30, 47.95, 48, 50, 59.94, 60, 95.9, 96, 100, 119.88 or 120.
Quality	The Quality scroll box allows the quality of the stretch to be selected from: Fast , Good or Best).
Type	The Type scroll box allows the appropriate type of audio re-sampling and pitch correction algorithm to be applied. Typically Monophonic is used for voice and Polyphonic for music.




When using the audio stretch function the track filter boxes cannot be used to protect/enable specific audio tracks.

5.2.6 Audio Repitch

The pitch of audio tracks can be raised or lowered in order to disguise voices or retune the pitch of an audio track that has been stretched. The pitch can be set between 50% (lower pitch) and 400% (higher pitch).

5.2.6.1 Repitch Audio

To repitch the audio:

1. Open the **More** options menu by pressing the More options icon  outside the top-right corner of the Floating Clip.

The available audio repitch options display to the right of the **Audio Repitch** box. Do not press **Audio Repitch** until after specifying the required settings.

2. Specify the required settings.
3. Press the **Audio Repitch** box to start the repitching process.

When complete the resulting clip maintains the original video frame rate but contains the new repitched audio tracks.

5.2.6.2 Audio Repitch Options

The audio repitch process has a number of options available to suit the type of audio material to be repitched and the desired level of accuracy.

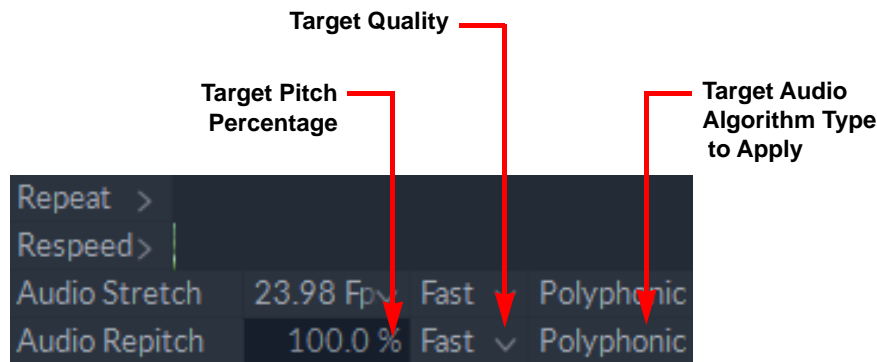


Figure 106 Audio Repitch Options

Option	Description
Percentage	The Percentage box allows you to raise or lower the pitch of the audio based on a percentage of the original.
Quality	The Quality scroll box allows the quality of the repitch to be selected (i.e. Fast , Good or Best)
Type	The Type scroll box allows the appropriate type of audio re-sampling and pitch correction algorithm to be applied. Typically monophonic is used for voice and polyphonic for music.



See the *Timeline Editing User Guide* for full details of working with audio tracks.

6. Managing Clips

6.1 Publishing Clips from the Desktop

6.1.1 Why Publish Clips?

When new frames are created on an sQ Server-connected workstation (by local ingest or rendering), they are not automatically available to other server users. To make new media available to all server users, clips must be **published** back to the server.



Anyone with access to the server is able to view and use material held on the server.

Clips held on the sQ Server are displayed with a yellow bin icon: .

6.1.2 Publishing to sQ Server

6.1.2.1 Overview of the Publishing Process

When a clip is published, a set of instructions is sent back to the sQ Server and the edit is conformed for play-out using the original HBR server held material.

When a clip is published back to the server, only new frames that don't currently exist on the server (i.e. any new material ingested or any rendered frames) are transferred; not the whole clip. This is called Delta Editing and the new frames are referred to as Delta Frames. The server recognizes which frames already exist on it and only the Delta Frames are transferred. This reduces network traffic and makes publishing a fast and economical process. An audio mix down is performed as part of the publish process, ensuring that audio is processed in a playable format.

If the same clip is published more than once (i.e., with the same details in the filecard) separate clips appear in the Server Bin. The **Name**, **Owner** and **Category** fields are identical but the file ID for each publish is always unique.

6.1.2.2 Prerequisites

Consider the following conditions before attempting to publish a clip:


- A clip must always be rendered *before* publishing.

Attempts to publish unrendered clips generate a warning message and terminate the publish operation.

- A clip must have the same frame rate and resolution as the server settings in order for the publish to succeed.

6.1.2.3 How to Publish

To publish a clip:


1. Open the **More** options menu by pressing the More options icon  in the top-right corner of the Floating Clip.
2. Select **Publish** to display the publish pop-up.
3. Press on the **New Clip Name** box and enter a clip name using an approved naming convention.

Use either the soft keyboard that displays or an external keyboard.


4. Enter an owner and/or category in the **Owner** and **Cat** boxes using an approved naming convention.

These values are used for media management/automation systems.


5. The application also has its own numbering system that can be used if required.

- a Enter a value into the **First Free From** box.
This allows the first unused number higher than the number set to be assigned to the published clip.
 - b Press on the **First Free From** scroll box to display further options.
The **No Number** selection disables clip numbering.
The **Force Number** selection forces the publish process to use the number provided, even if it is already in use.
6. Set the target Area in the **Area to Publish to** scroll box.
This shows the *Areas* (i.e., a list of server storage Pools) available as specified by the ISA Manager configuration. Each Area can have its own default owner and category settings (also set by the ISA Manager) that are applied automatically as the default for the published clips.
 7. If the HBR server clip is no longer available the publish fails.
Confirm that the HBR clip is still available on the server by pressing **Check** before publishing. It is advisable to do this as it is possible to continue editing on each workstation using locally cached LBR video (plus audio) even if the HBR clip has been deleted from the server.
 8. Press **Publish** to save the clip to the sQ Server.
If the option **Publish and Save** is enabled in the **Server** menu of the <F1> Configuration window, the published clip is also saved locally on the seat in the Clips Bin.
 9. To close the pop-up without publishing, select  in the top-right corner.

6.1.3 Publishing to a Placeholder

Placeholders are often used in server systems to integrate newsroom control systems and the server. A placeholder is a blank clip that can be loaded into a playlist. When an edit is ready it can then be published to the placeholder. The placeholder icon  displays in the Server Bin.

To publish to a placeholder:

1. Open the Server Bin.
2. Locate the desired placeholder clip.
3. Click the Placeholder clip name.
A menu displays to the right of the Server Bin.
4. Select: **Use Details**.
5. Go to the Floating Clip that is to be published to the placeholder.
6. Open the **More** options menu by pressing the More options icon  in the top-right corner of the Floating Clip.
The **Publish** box changes color to blue indicating that the placeholder details have been attached to the publish.
7. Select the blue **Publish** box to display the publish pop-up.
It is not necessary to change any details that display in the pop-up as the placeholder details have already been entered.
8. Press **Publish**.



When several workstations are connected to the same server, the Owner field can be set to the name of the server workstation. When there are multiple users sharing workstations, the *owner* can be set to the name of the person creating the clip.



A default owner, category and title can be set in the Clips menu in the <F1> Configuration Window (when enabled in the Registry).



See Chapter 5 in the *sQ & ISA User Guide* for more details on managing video and audio essence on the sQ Server.


6.2 Localizing a Clip

6.2.1 Why Localize Clips?

Localizing a clip ensures that a high-quality high bit rate (HBR) copy of the clip is saved locally. Localized clips can serve as a backup version in case the original source material on the server is accidentally deleted or disconnected.

6.2.2 What Happens During Localization?

The **localize** function imports a copy of a remotely held clip segment in its native video format and saves it into the Clips Bin.

Localized display with white bin icons: .

6.2.3 Setting Tail Frames

In the <F1> Configuration Window **Localise** menu, enter a tail length value in the **Tail Frames** box before localizing material. Localizing a clip with tails ensures that a set number of additional frames are localized with the clip. Having tails allows the duration of the clip or individual clip segments to be extended. Tails are required in order to add any transitions to a clip.

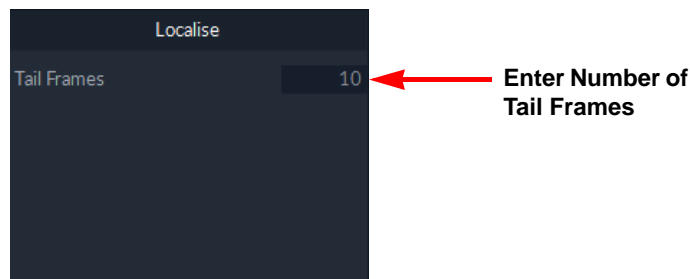



Figure 107 Specifying Tail Frames Before Localizing a Clip

6.2.4 Localizing a Floating Clip

The whole clip, or a selection of the clip, can be localized by marking In and Out points. For details, see the section 3.1.4 *Marking a Section* on page 27.

To localize a Floating Clip:

1. Open the **More** options menu by pressing the More options icon  in the top-right corner of the Floating Clip.
2. Select **Localise**.
3. A progress indicator (shown as a percentage) displays during the localization process.

Press **Cancel** at any point to stop the localization process.


4. The localized version of the clip is saved to the Clips Bin.



See the *sQ & ISA User Guide* for further information on managing video and audio essence on the sQ Server.

6.3 Saving a Floating Clip

The Save operation saves the current changes to a clip locally to the Clips Bin.

Save a Floating Clip simply by dragging and dropping it into the Clips Bin. Any saved clips that contain remote media are displayed as yellow bin icons: .

Saving a clip that contains remote material, for example, stored on the server or soft-mounted from an external device, to the Clips Bin does not create a local copy of the HBR material. Instead this saves a copy of the LBR material and the edit decisions (cut points, transitions, etc.) If the remote material becomes unavailable then the clip, complete with edit decisions, remains in the clips bin but the media appears *offline*, displayed as blue video in the Video Window.

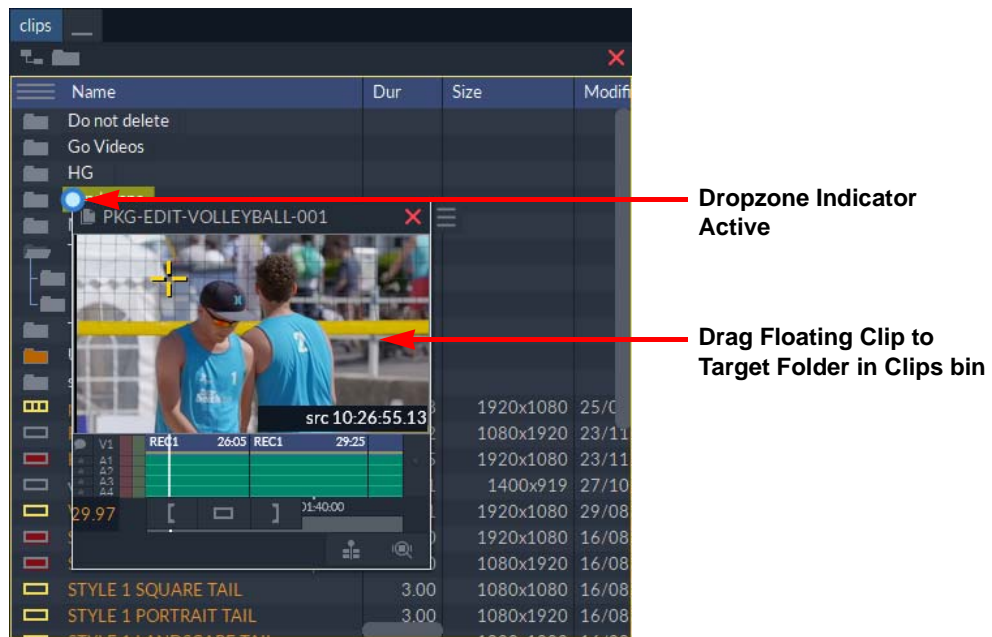


Figure 108 Saving a Floating Clip to the Clips Bin

In order to store the HBR material locally it must be localized, see the section 6.2 *Localizing a Clip* on page 73.



Saving a remote clip to the Clips Bin does not create a local copy. If the source material becomes unavailable the media appears offline.



See the *sQ & ISA User Guide* for further information on managing video and audio essence on the sQ Server.

6.3.1 Default Python Scripted Storage Functions

Any Rio connected to a media management system includes a number of Python scripted workflows, used to manage the storage of media files across the system, which can be modified or added to as required. These scripts provide the following optional storage mechanisms, which can be accessed from the commands below the Edit Timeline:

- Park:** Storage mechanism that enables projects to be shared in a connected system. Parking a timeline writes an AAF file to a designated directory on IT storage. If the media already exists on either the IT storage and/or the sQ Server, then no media will be moved.

If the media has been ingested locally on the Rio and is not already part of the Momentum database then it will be copied to the HQ directory on IT storage and proxies generated.

Any other Rio or Go! connected to the system can then read this AAF and retrieve the same project with all its history. Any parked project can be searched and presented as a thumbnail in the Media Bin.

Any retrieved parked project in Go! is presented as a flattened clip. This is an example of a workflow in which Go! starts a project that is then completed on Rio. In this scenario a complete edit history is maintained.

- **sQ Publish:** Storage mechanism to publish the timeline to an sQ Server for playout. This process also Parks an AAF file in a designated folder on IT storage so that the project may be retrieved by any other Rio on the system, together with its full edit history.

The option to Park on a Publish is configured in the Momentum Admin menu **RioConfig**.

- **File Publish:** Storage mechanism to allow the timeline to be published as a file to a designated location and/or to a MAM workflow for templating by a render engine and/or publishing to a social media workflow.

The dialogue box provides options for social media publishing, templating styles and for logo/watermark burn-in.

- **Save JPG:** Option to save a JPG file of the current timeline playhead position to a designated network location.

A Media Bin allows access to all media assets, whether residing on IT (networked) storage or an sQ Server.

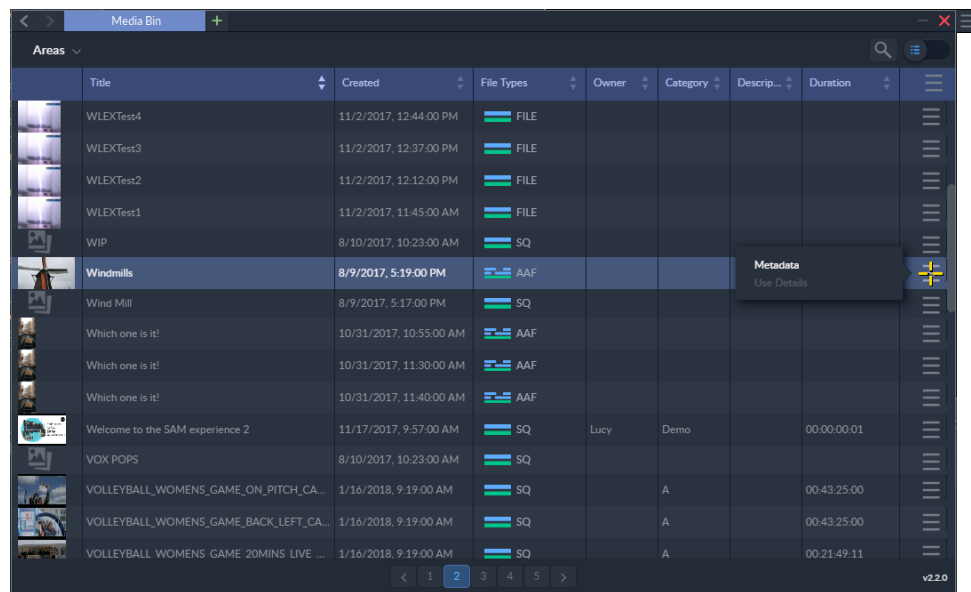


Figure 109 Clip Saved to the Media Bin

For more information, see the *Media Bins User Guide*.