Fly Elise-ng
Waterstad 31
5658RE Eindhoven
The Netherlands
Web: httpw://fly.elise-ng.net
Email: info@elise-ng.net
Tel: +31 (0)40 7114293

Fly Elise-ng
Immersive Presenter PRO v1.3
User Guide

1 Introduction

Immersive Presenter PRO is the ultimate multi-projector production and playback software which includes geometric correction and soft-edge blending functionality.

It is the only software that seamlessly integrates into the Windows 7/8/10/11 desktop and provides content production, presentation, scheduling, playback and show control with image geometric correction and soft-edge blending using the PC GPU. No additional hardware is needed for projection on regular and irregular projection screens (cylindrical screens, full and partial domes and any other shaped projection surface).
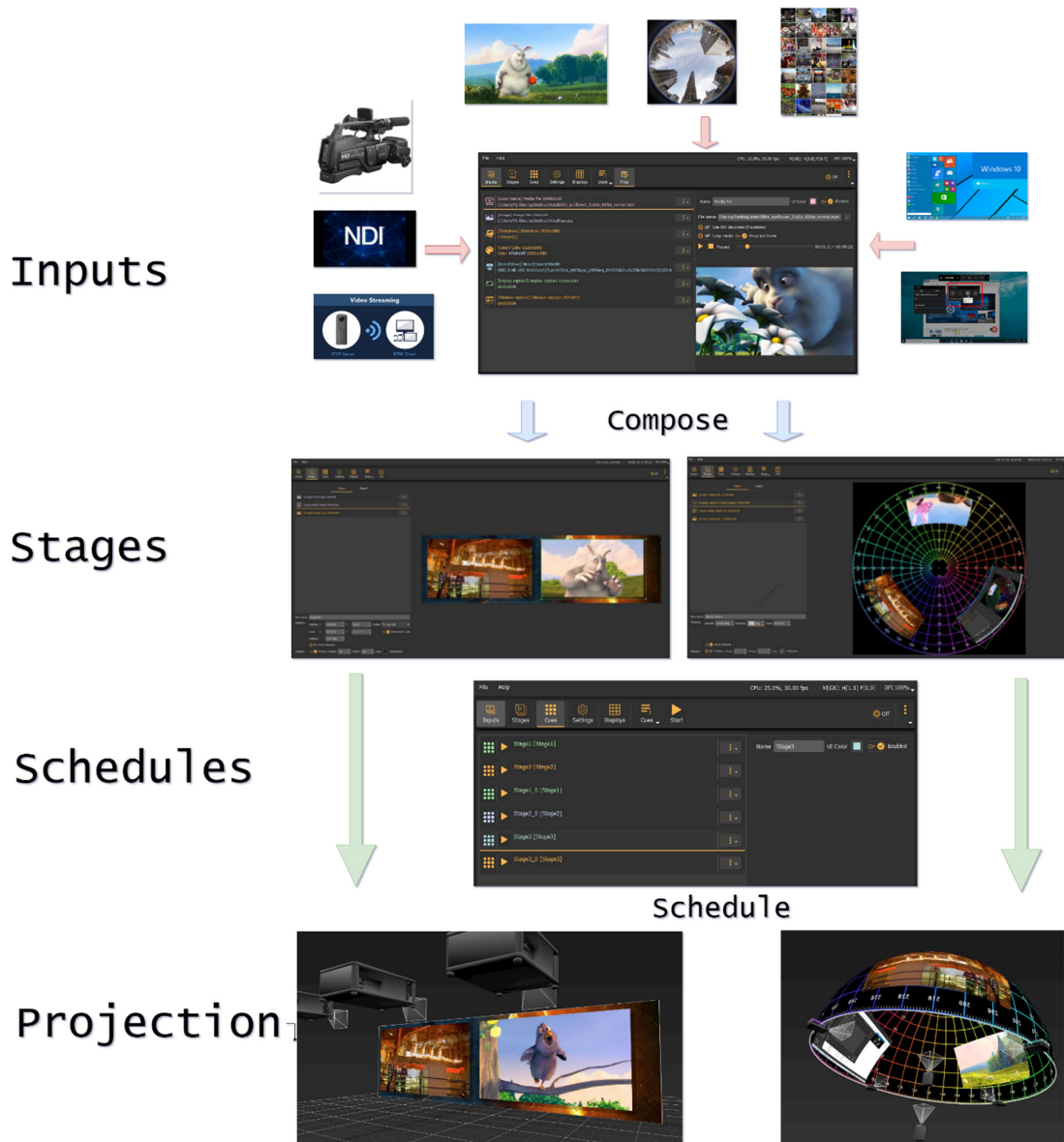
Immersive Presenter PRO utilizes Fly Elise-ng Immersive Display core components for image geometric correction and soft-edge blending configuration and presentation. With a simple user interface and using the system mouse and keyboard the projected output image can be mapped on any kind of projection screen. Overlaps and soft edge blending between projected images can be adjusted using the fine-grained controls and gamma

functions. A color correction per projector can be applied to match the color profiles among different projectors.

Immersive Presenter PRO supports camera calibration files. A camera can be used with our Immersive Calibration RPO software to automatically calculate the geometrical correction and soft-edge blending. Using a standard HD webcam, users can create perfect and seamless multi projector setups.

Immersive Presenter PRO supports up to 16 projectors per PC, which can be configured in different horizontal and vertical stacking.

Immersive Presenter PRO is designed for home and professional environments. Applications include:

- Home Entertainment System
- Conference rooms
- Digital Signage
- Content Production and Playback
- Live Digital Motion Graphics

2   System requirements

The following is the required minimal configuration:

- PC with 2.0 Ghz or higher processor (32bit or 64 bit)
- 2 Gb or more RAM
- A moderate graphics card (NVIDIA or AMD/ATI)
- For creating a wide multi projector display in windows 7, Windows 8 or Windows 10 desktops, the following products are required:
  - o NVIDIA surround 2D support for NVIDIA graphical cards
  - o ATI Eyefinity support for ATI graphical card
  - o Or Matrox DialHead2GO or TrippleHead2GO external hardware box
  - o Or Nvidia Quadro graphics card with mosaic mode
- A common HD webcam (Ex: Logitech Webcam PRO 9000, Logitech HD Pro Webcam C920, etc.)

3   Getting started

Immersive Presenter PRO a nonlinear content production playback solution. It is organized around 3 basic concepts: Inputs, Stages and Cues.

Inputs

Inputs are the sources of content (A/V) that can be shown on the output window.
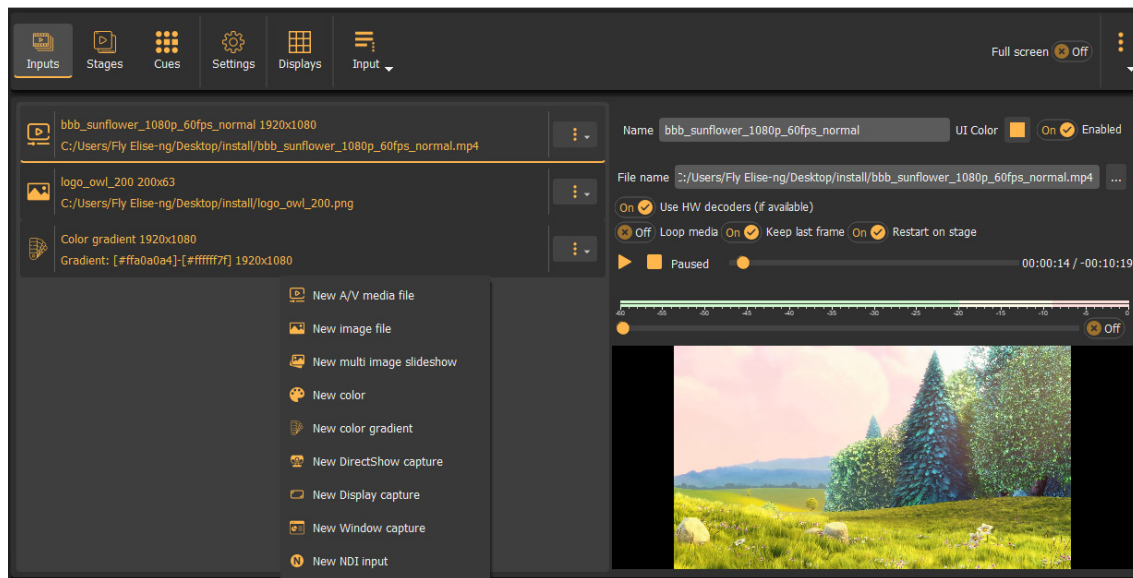
Different types of inputs can be added to the software in the Inputs window: A/V files, images, colors, DirectShow captures, cameras, Window or a desktop capture, NDI streams, etc.

Each input can be configured separately and can be placed on one or more stages.

Stages

Stages represent the display canvas where the inputs can be positioned and combined. Multiple inputs can be placed on a stage and organized in different ways.
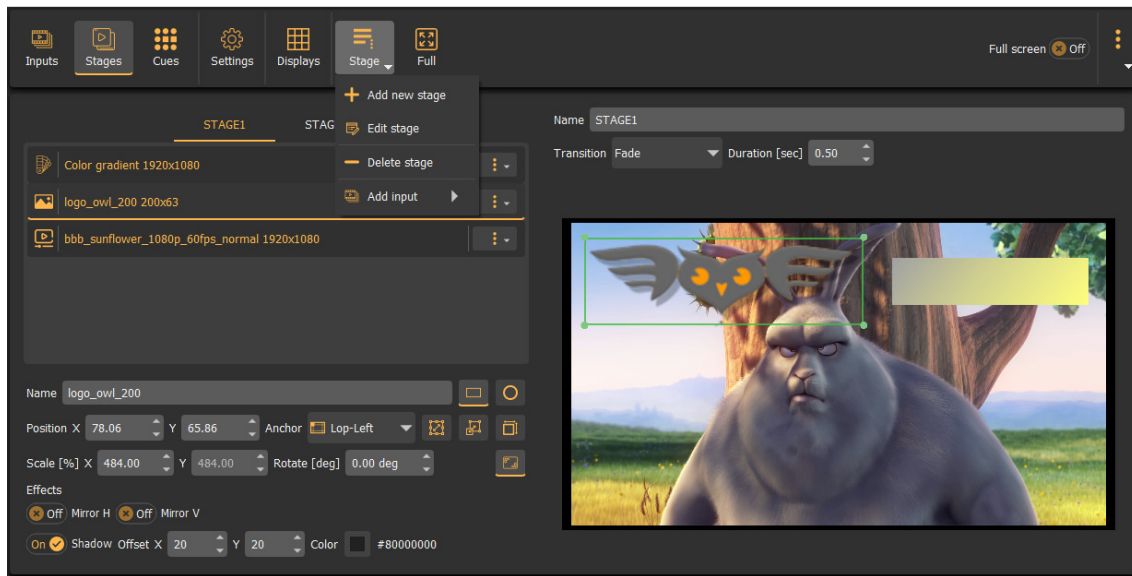
Each input is represented by a stage item and can be configured and arranged separately on the stage. Each stage item points to a single input and resides in a separate layer on the stage. This allows inputs to be independently and in arbitrary order on the stage.

Multiple stages can be created to represent different inputs arrangements or different input content. Output can switch from one stage to another either manually or using schedules.

Cues

Cues are mechanisms to automatically switch the output from one stage to another based on a condition.
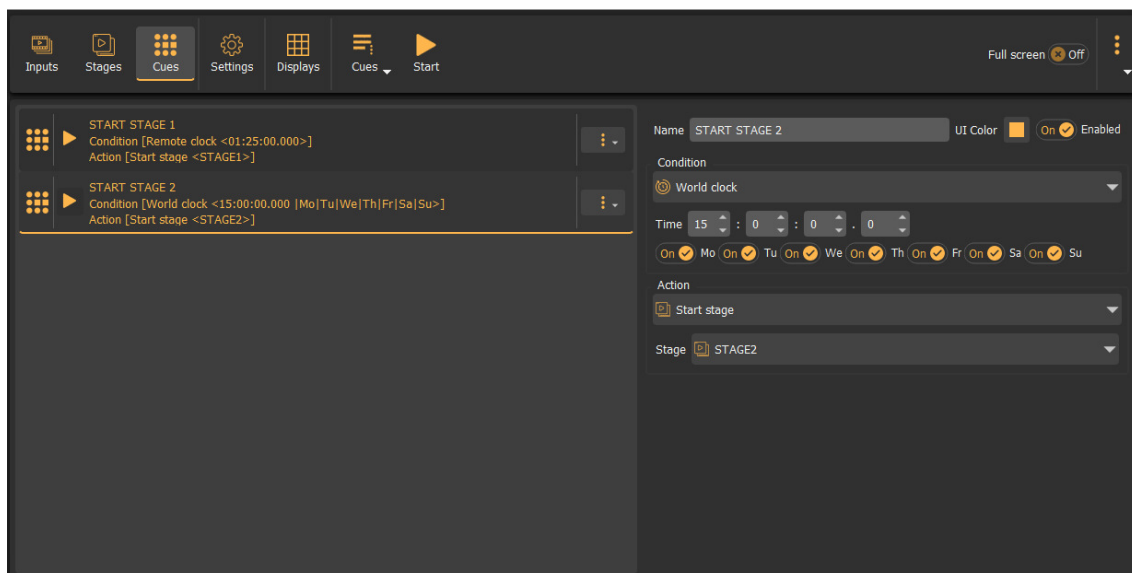
Condition are time based and specify the moment in time to switch start the stage. Each cue is associated to one stage and contains the specification of the trigger to start the stage. Triggers can be one of World Clock, Local clock or a remote clock (LTC, MIDI, etc..).

Based on those 3 basic concepts (Input, Stages and Cues) the user can create stunning multi-display production and playback is just a couple of clicks.
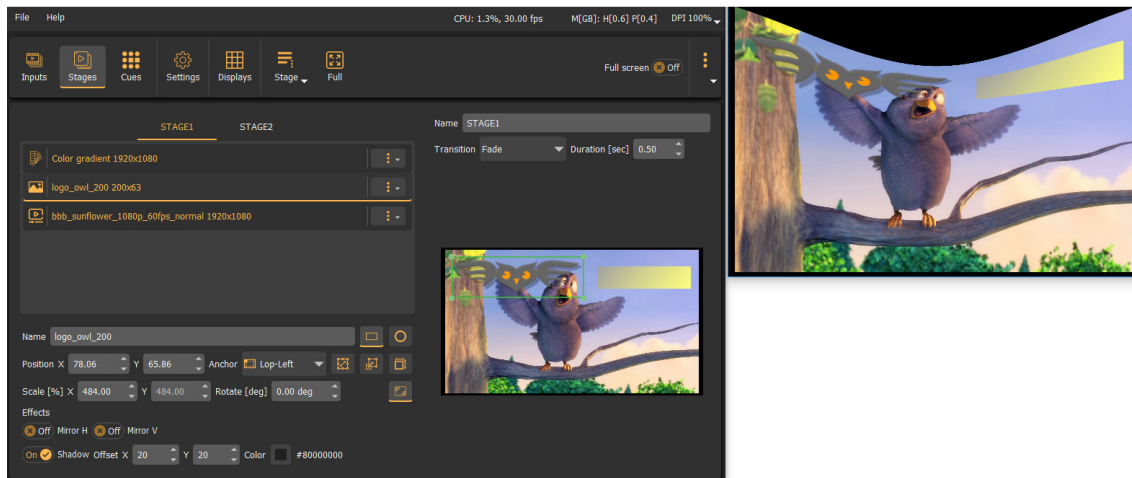
4 Quick Startup Guide

Add inputs

Start Immersive Presenter PRO, select the Inputs button on the left and click on the Input Button on the right. A menu will show all different Input types. Select New A/V media file and select your video file.
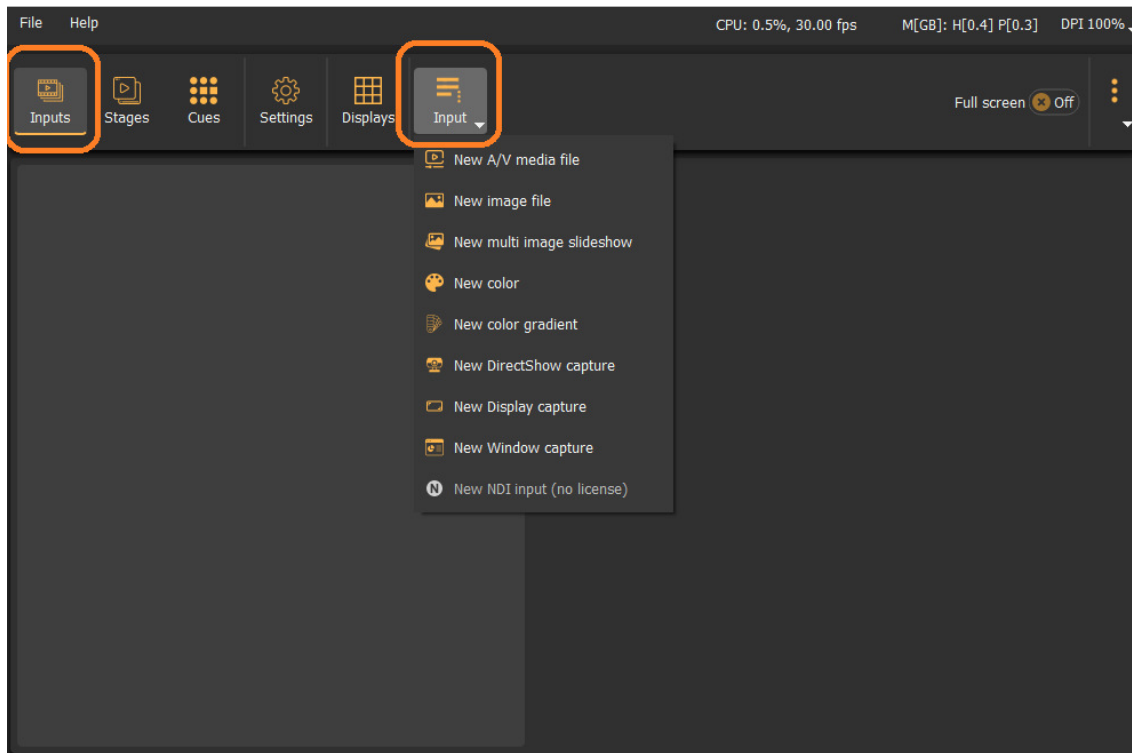
Add one or more other inputs if needed and configure the inputs properties.
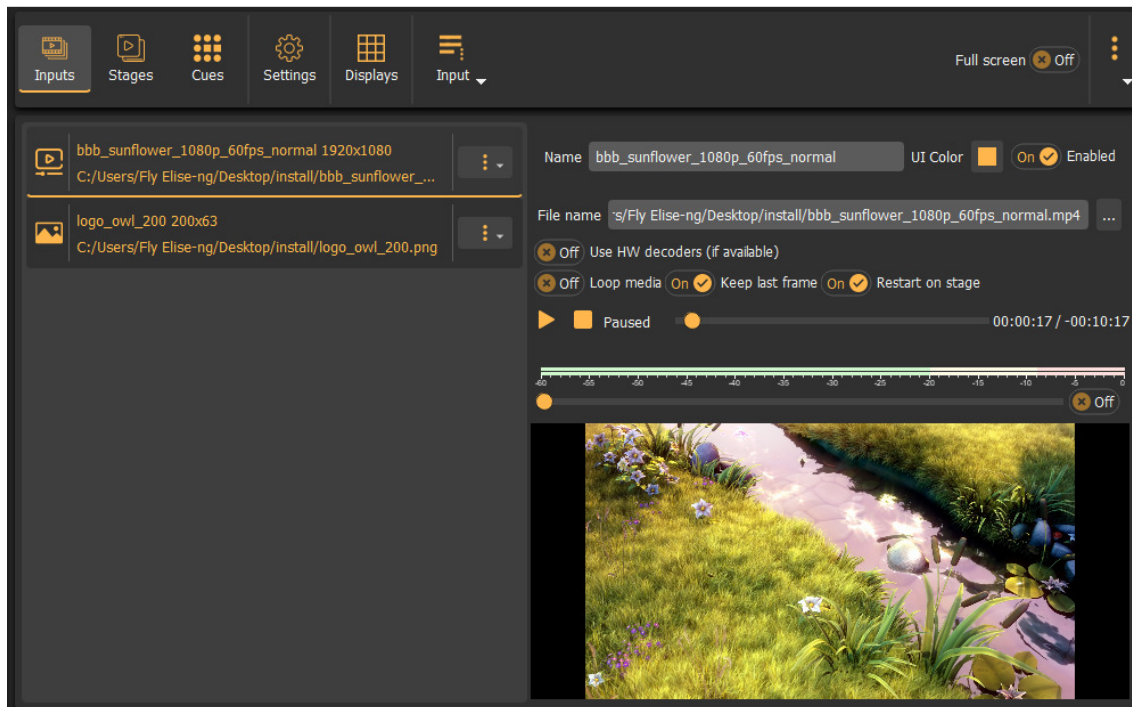
Create stages

Select the Stages button and click on the Stage button on the right to add one or more stages.
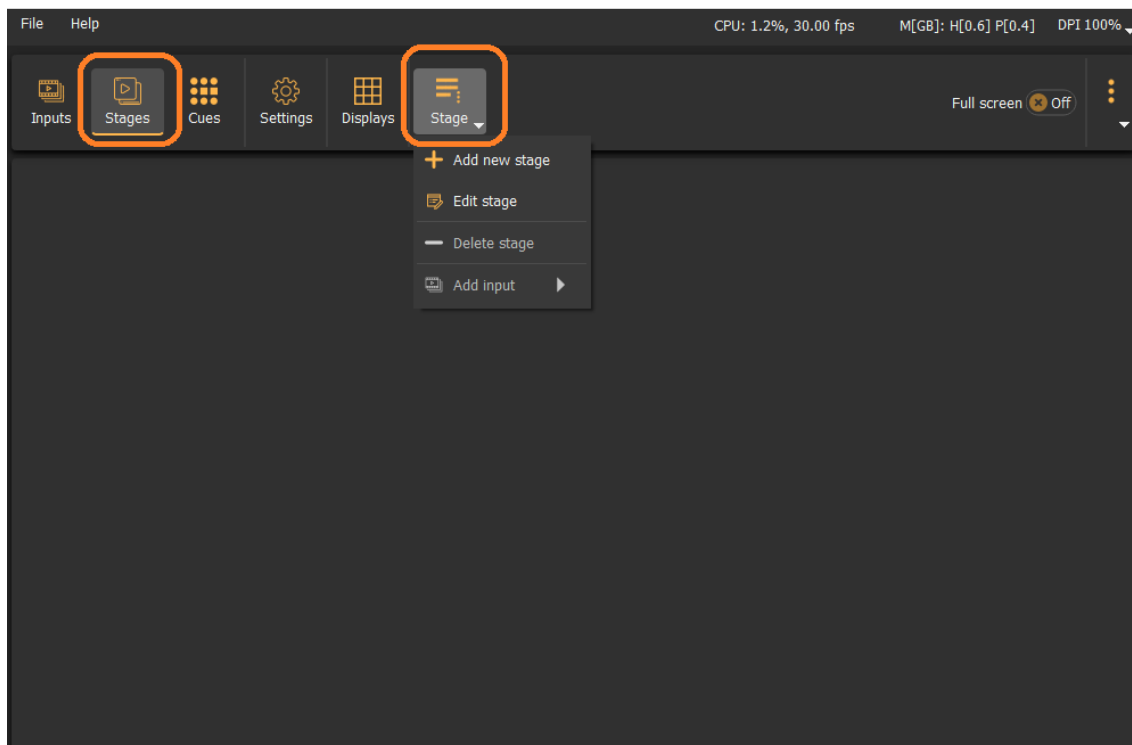
Right click on the stage to add some input to the stage as stage items.
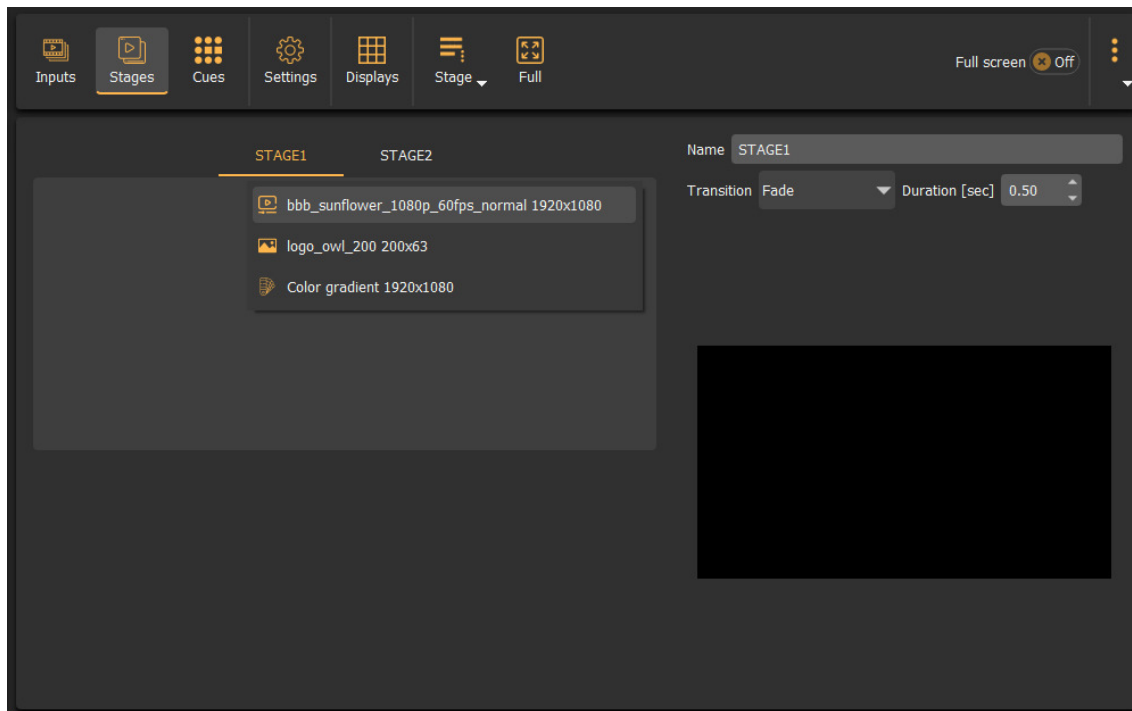
Add one or more inputs to each stage. Arrange the stage items and configure their properties (position, scale, rotation, alignment, shadow, etc.).
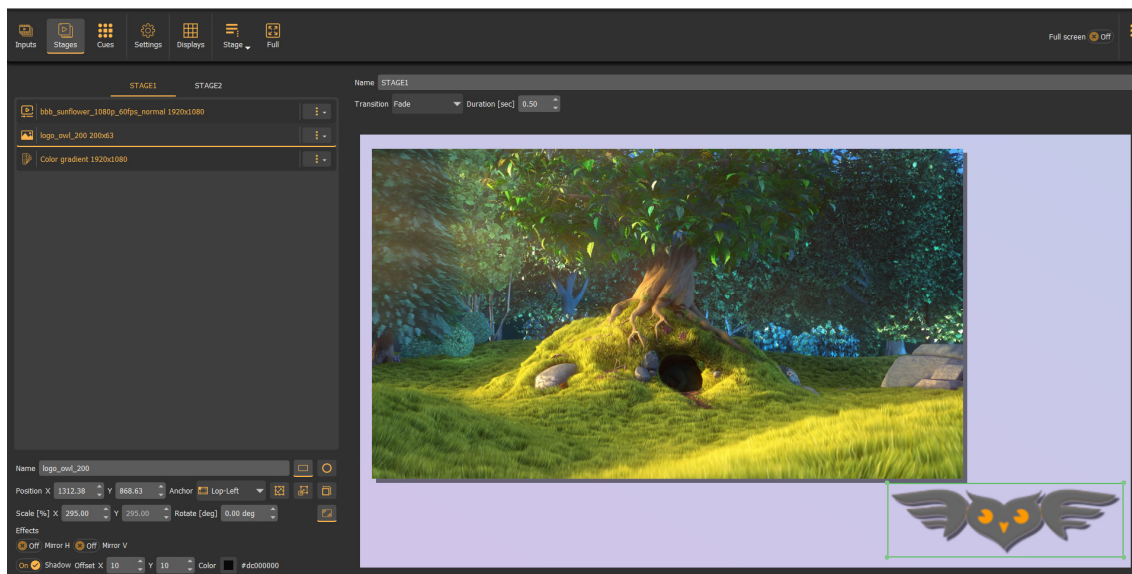
Repeat the same steps and create one or more stages (if needed) with different inputs and different stage items arrangement.
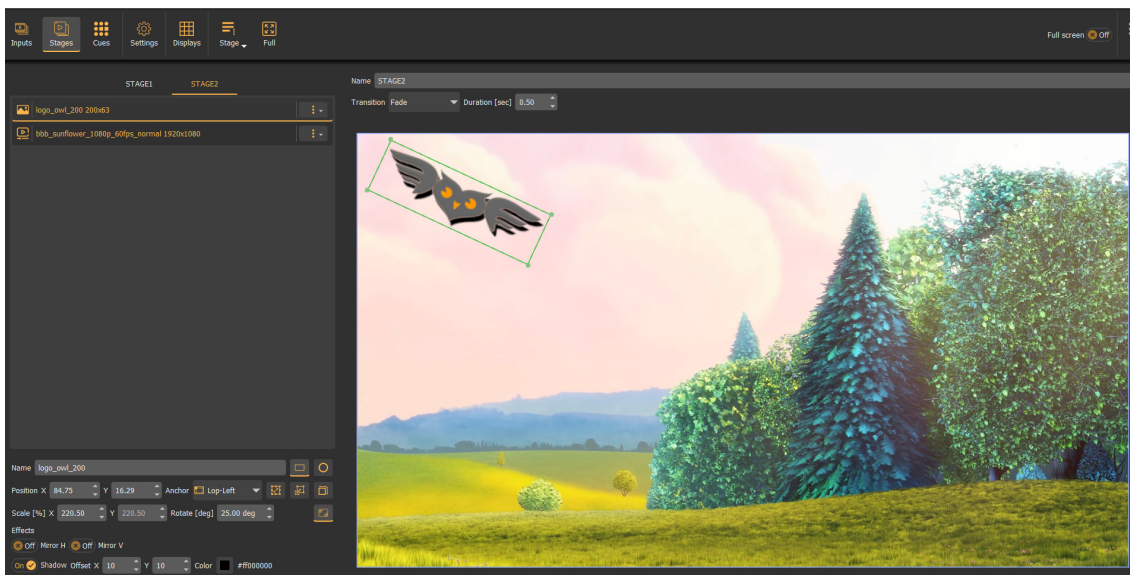
Create cues

Cues are mechanisms to switch and start a stage. Each cue refers to one stage and can be used to start and switch to that stage.

Select the Cues button and click on the Cue button on the right to add one or more cues.
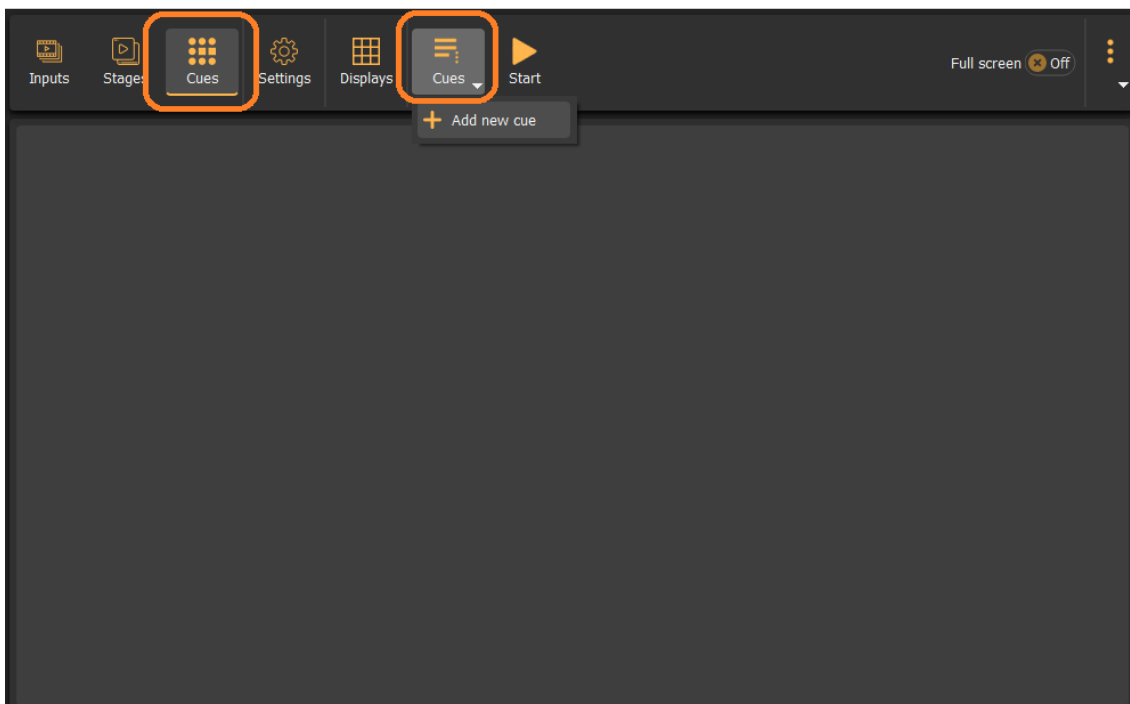
Select the cue, select the "Start stage" action associated to this cue and select the stage.
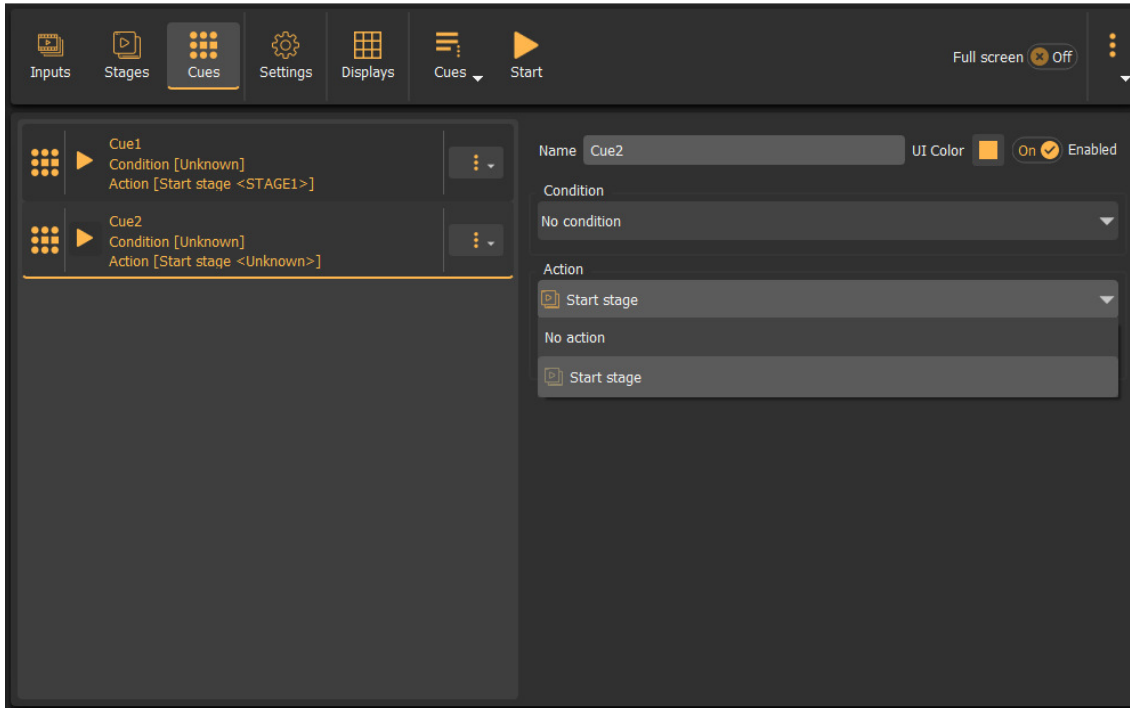
Use the "Play" button next to the cue to activate the Cue. The Start stage action will start the associated stage and show the stage on the output display.
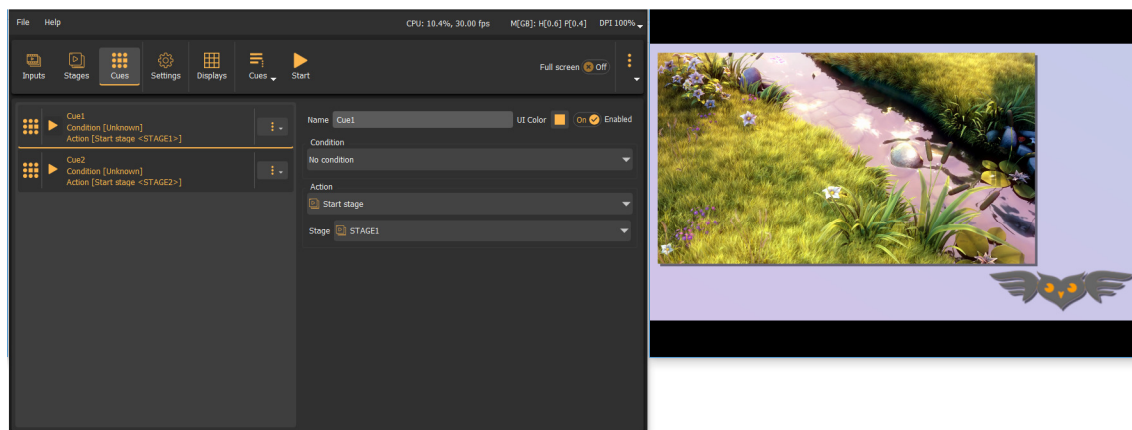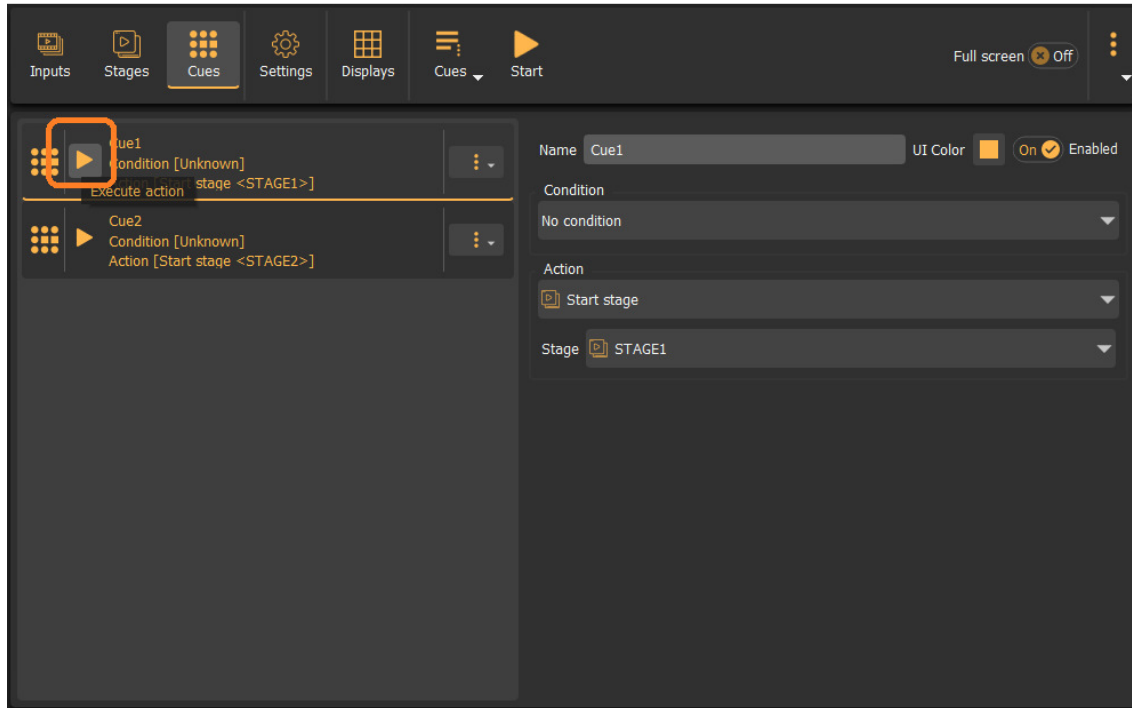
Configure the edge-blending

Press the Configure button to edit the geometrical correction and soft-edge blending. A configuration screen will be opened where the user can user the control points to map the projected output on the projection screen, define the overlap and configure the soft edge blending depending on the configuration mode.

Alternatively, use our Immersive Calibration Pro for auto-alignment with optional use of cameras.
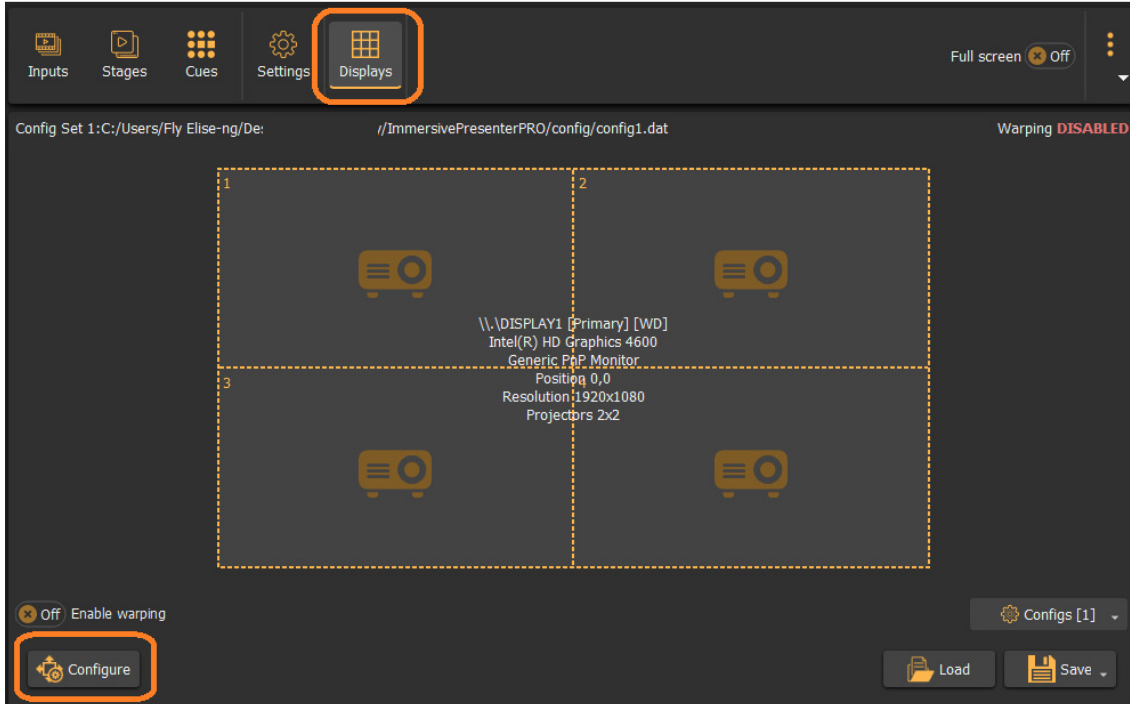
In the geometrical correction mode, user can use the mouse of keyboard to move the green control points on the screen until the projected image is mapped on the projection screen.
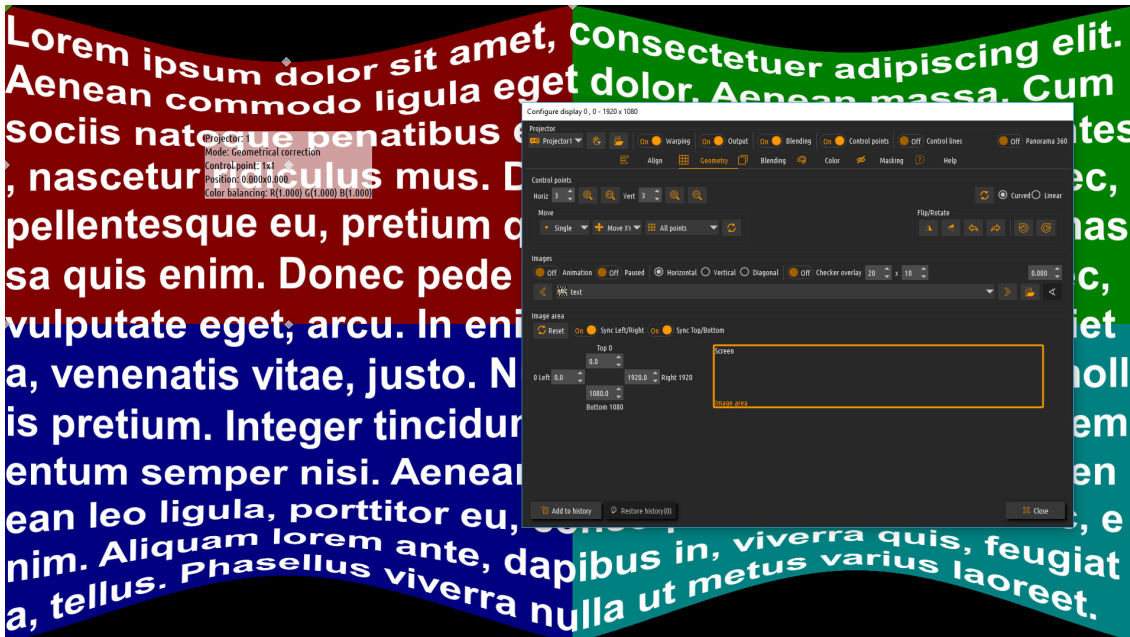
After the image is mapped to the screen the overlapped regions can be defined and the soft-edge blending can be configured. Using the "F10" keyboard key, user can switch between geometrical correction and soft-edge blending mode. The default soft-edge blending mode is the "simple" mode where the edge-blending region follows the contour of the edge of the screen. In most cased this mode is enough to configure the soft-edge blending.

In the "simple" edge blending mode user can drag the red control points for every edge to adjust the soft-edge blending region. Using the mouse scroll button the gamma values for all tree components(R/G/B) can be adjusted per region).
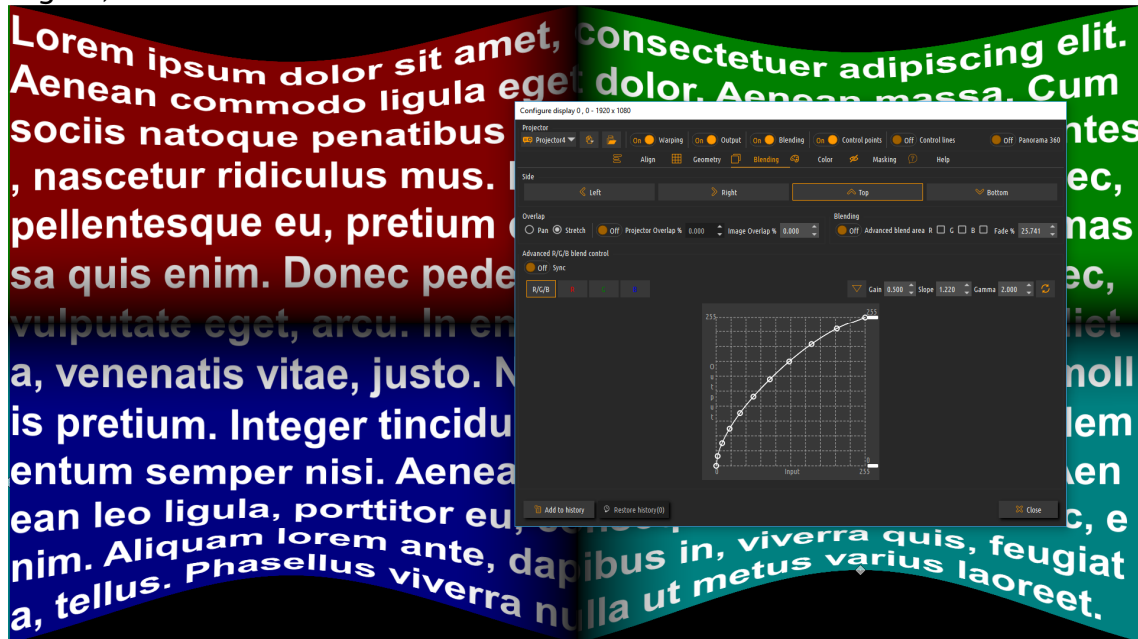
4 – For more complex setup with irregular projection screens user can switch to advanced blending mode using the **advanced configuration dialog.** In the "advanced" blending mode user can define more control points per edge and move the blue control points independently to match the contour of the projection screen and the overlap region. Using the "F12" user can switch between the blending regions. Using the mouse scroll button the gamma values for all tree components(R/G/B) can be adjusted per region).

Finally, by pressing the "D" key, the advanced configuration dialog can be show or hidden. From the advanced configuration dialog user can fine-tune the gamma values independently for all tree components(R/G/B).

After the configuration is finished, user can press the "Esc" key to exit the configuration screen. The configuration can be saved using the "Save/Save As" button on the control and configuration dialog. This configuration will be used the next time when Immersive Presenter PRO is started again.

Press Play to start the selected stage.
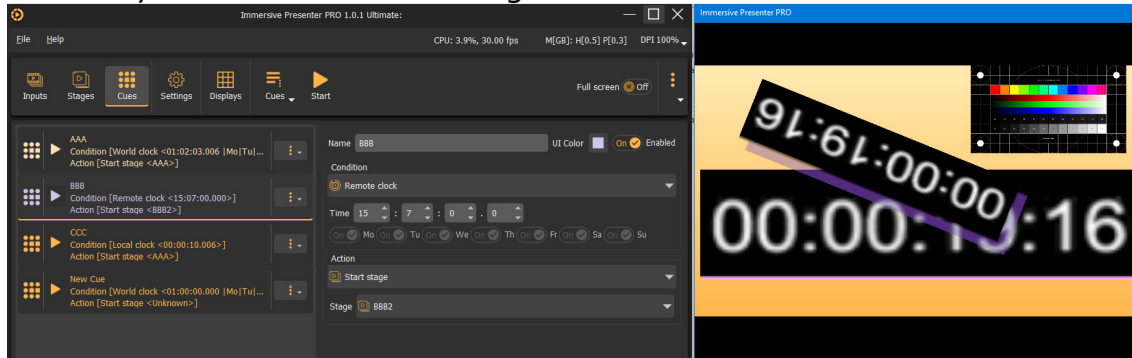
Pressing the "Full Screen" button, Immersive Presenter PRO will be minimized on the system tray and the video will be shown on the configured display.
Use the F key to toggle the full screen mode.

5   User interface

The graphical user interface is composed of several pages. Each page can be selected using the toolbar buttons
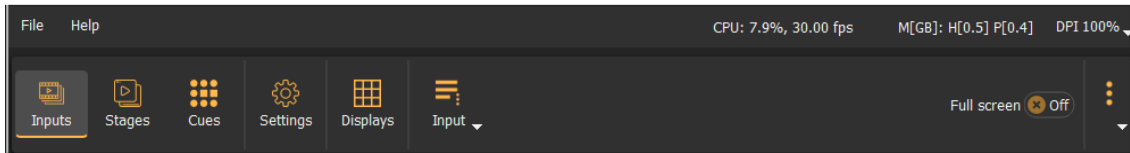
5.1   Inputs page
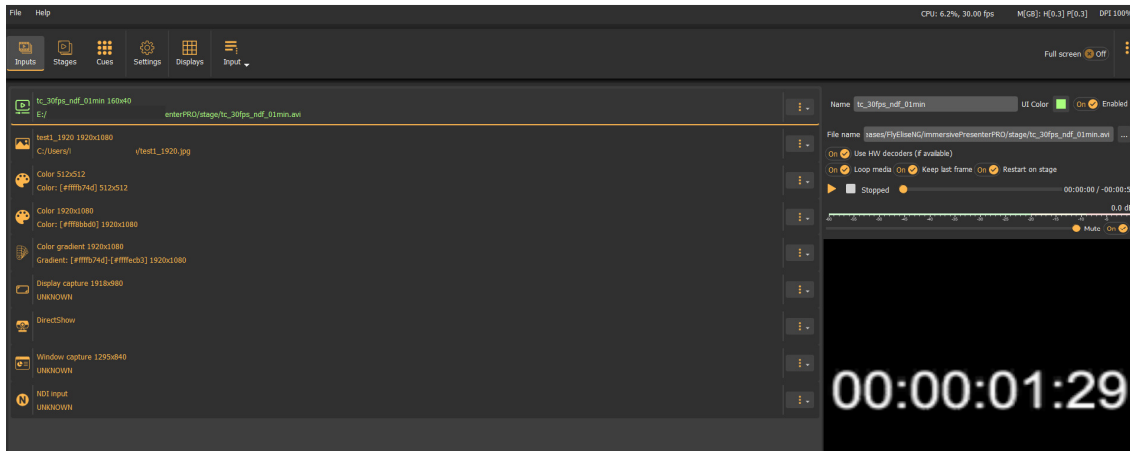
All inputs can be placed on one or more stages must be defined in the inputs page. Each input can be configured separately.

Right-click on the inputs page to add a new input. The flowing input types are supported:

5.1.1 A/V media file
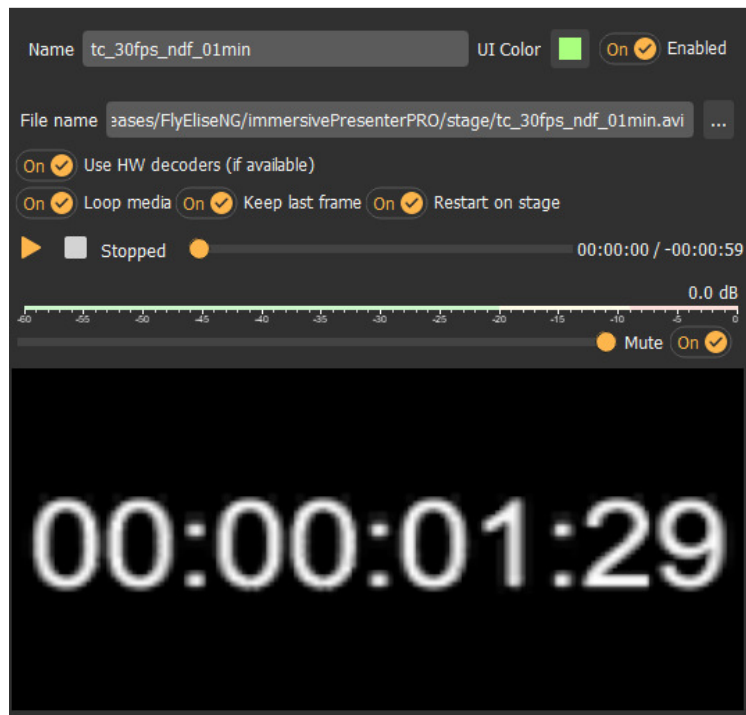
This input represents an audio or video content that can be put on any stage. The content is a local file.

If a hardware video decoding is available on the PC hardware, the users can select to use hardware decoding for increased performance.

User can select to loop the media content, as well as to restart the media each time a stage is selected which has this input.

The following file types are supported: mp4, ts, mov, flv, mkv, avi, mp3, ogg, aac, wav, gif, webm.

5.1.2 Image file

This input represents a single local image file.
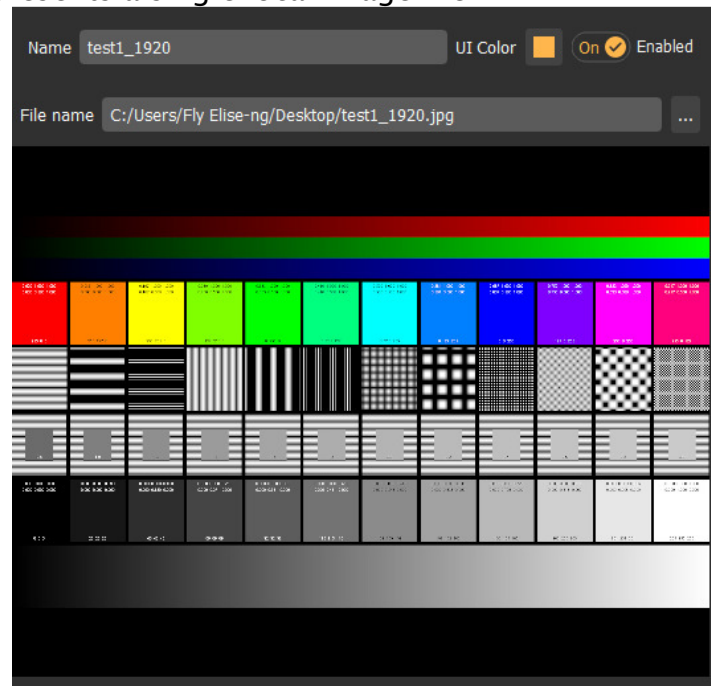
The image can be put anywhere on a scene and can be scaled or rotated on the scene. The following image formats are supported: bmp, tga, png, jpeg, jpg, gif, psd, webp.

5.1.3 Multi-image slideshow

Similar to the image input, multi-image input support multiple image files that can be played back as image slideshow.
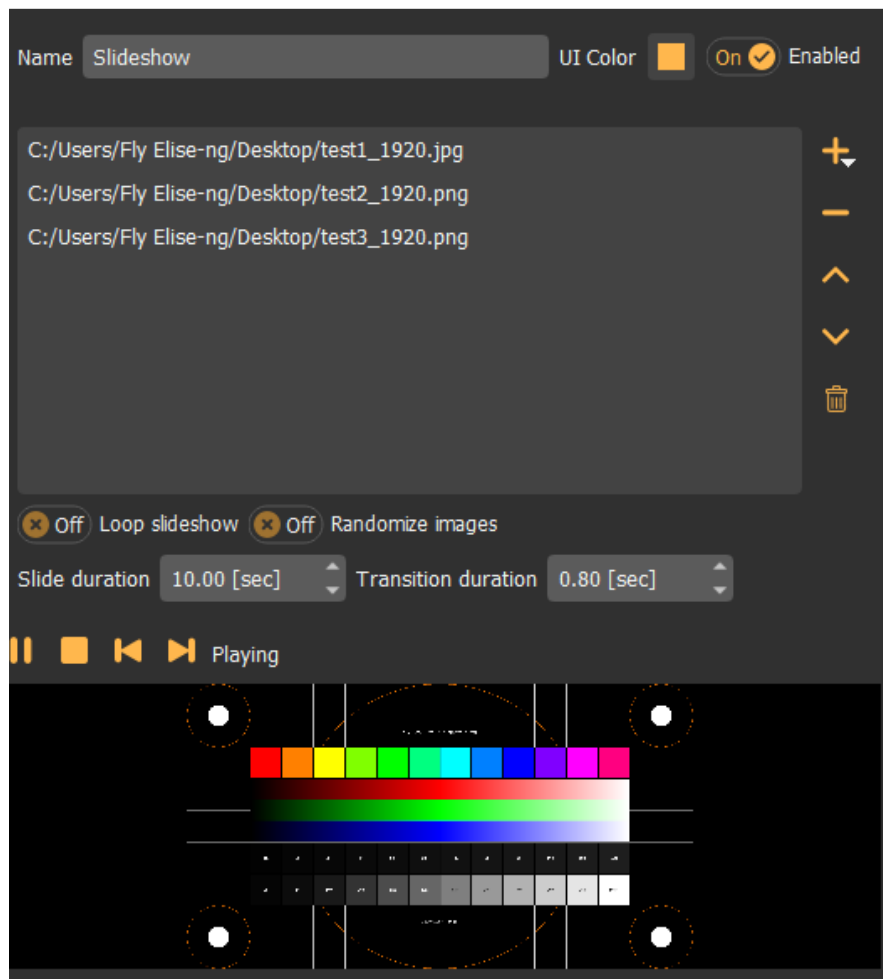
Multiple images can be combined as one slideshow with a transition. The slideshow can be randomized and looped. The duration of a single slide and the transition duration can be configured separately.

5.1.4 Color
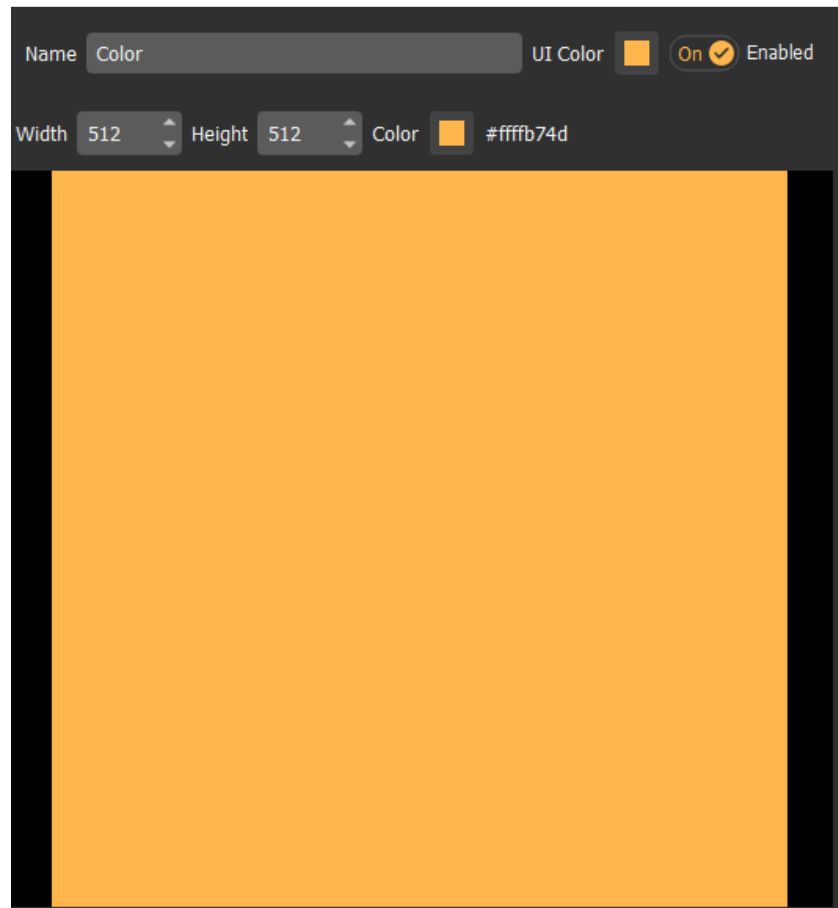
This is single color input. The color can be specified as ARGB values.

5.1.5 Color gradient
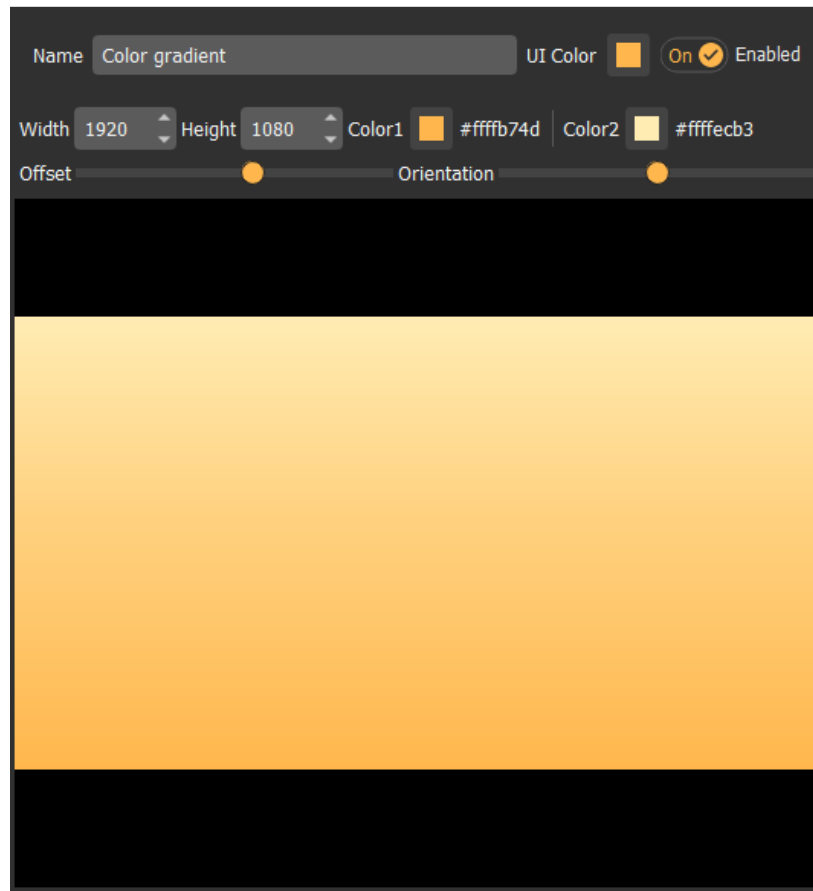
This is color gradient input created by 2 colors. Colors can be specified as ARGB values. The position and the orientation of the gradient can be configured separately.

5.1.6 Direct Show capture
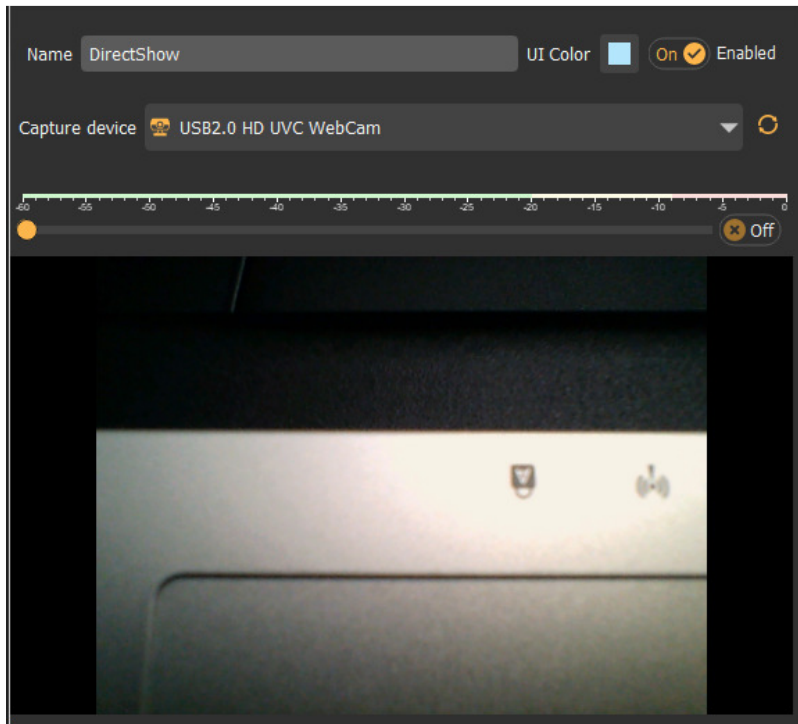
This is an input from any Direct Show compatible capture device. This includes any web camera or any other video or audio capture device available as Direct Show capture device.
The available Direct Show capture devices are listed in the selection dropdown box.

5.1.7 Display capture

This is an input that captures the complete windows display device output.
The complete display can be shown as an input on a stage.
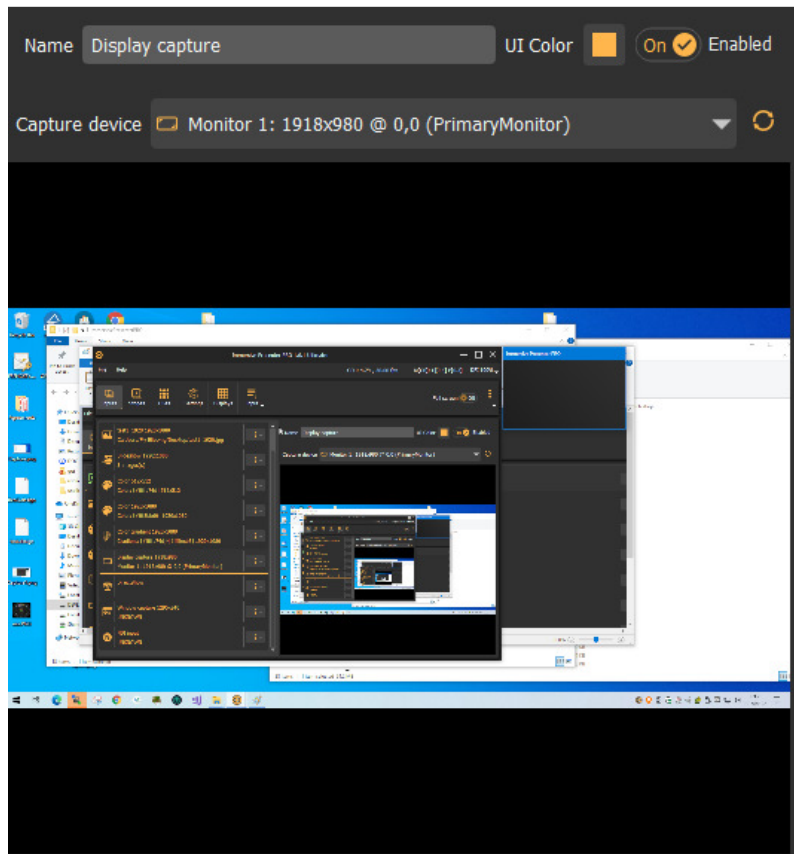
Using this type of input it is possible to have any content rendered and show on a separate windows display and then the whole display to be used in a stage that can be shown on one or multiple other windows displays.

5.1.8 Window capture

Similar to the Display Capture input, the Window Capture input represents a captured content of a single Window from the Windows Desktop.
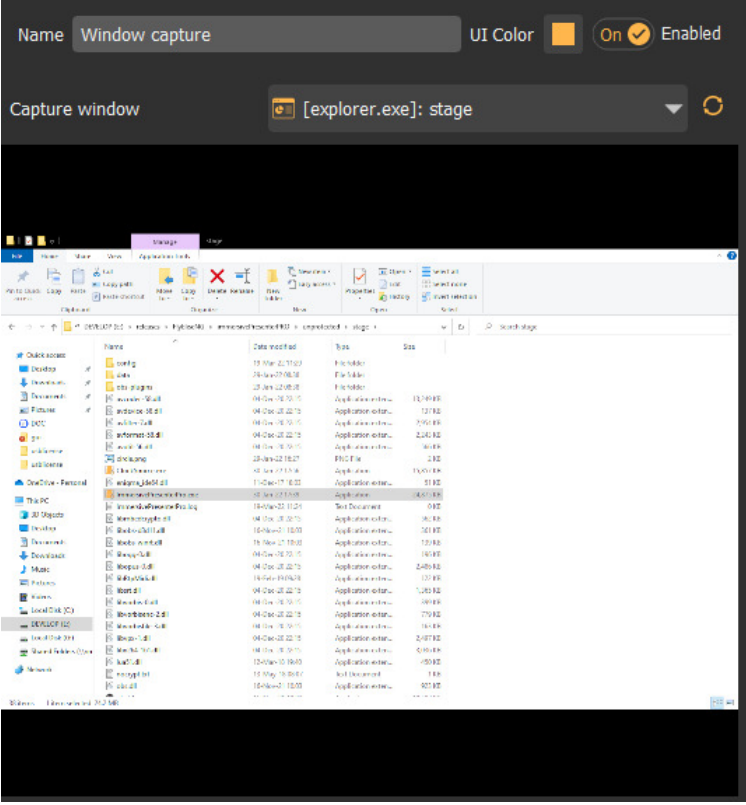
Any window from the windows desktop can be captured and shown as an input on a stage.

5.1.9 NDI Input
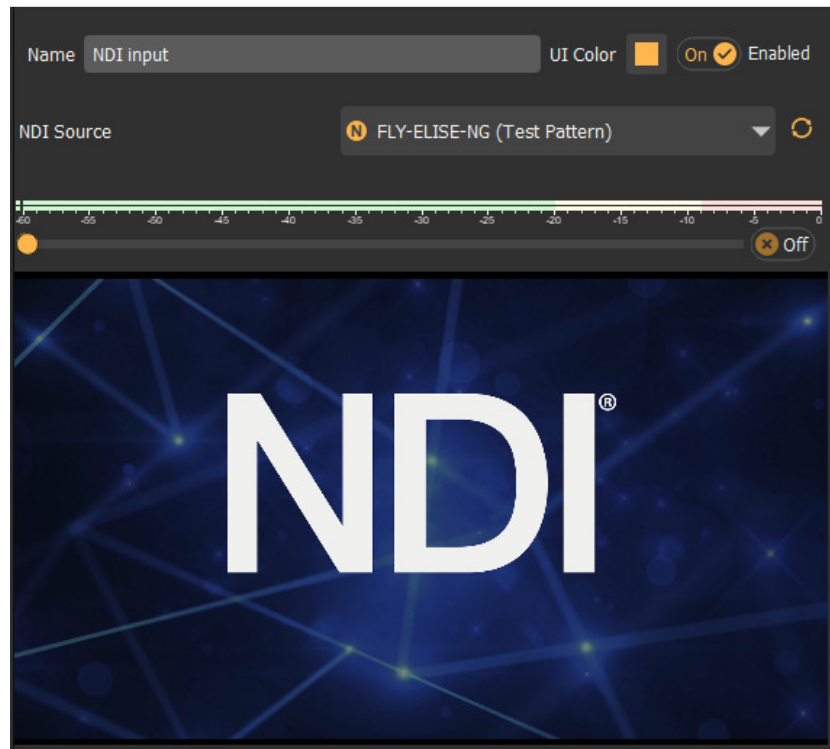
This is an input that allows any NDI video and audio source to be captured and shown as input on any stage.

For more info, check the ndi info page: https://www.ndi.tv/

5.2 Stages page

Stages are the areas that are the primary output of Immersive Presenter PRO. Only a single stage is presented at a particular time on one or more video outputs. Multiple stages can be defined and the output can switch from one to another stage. The switch from one to another stage can be performed with a stage transition effect. Multiple transition effects and their durations are possible.
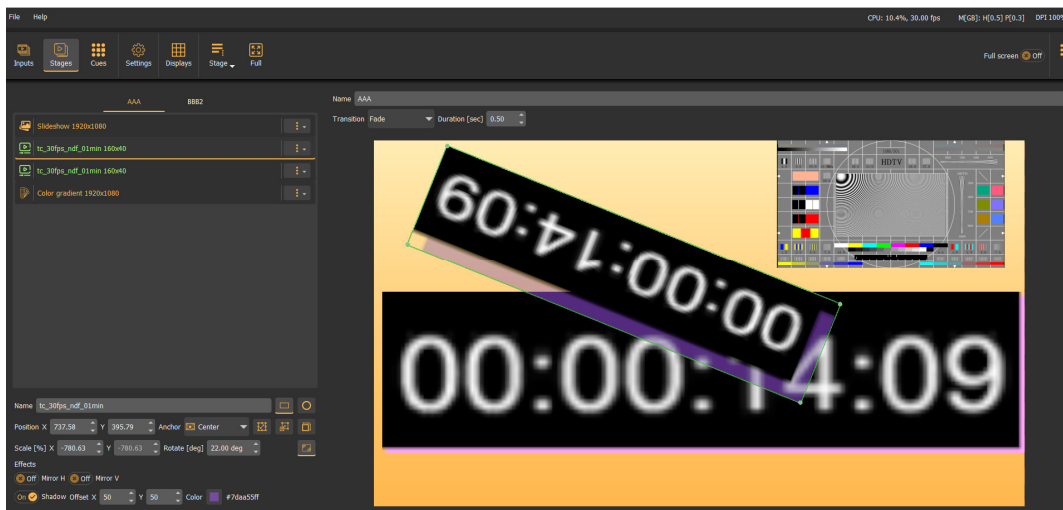
Use the stage button to add or delete a stage as well as to add an input to the stage. Inputs can be added to the stage also by right click in the stage list.

The stage represents the canvas on which one or multiple inputs (defined in the input page) can be combined. Each input is put on a separate layer and the layer order determines the order of rendering of the input on the stage. The lowers layer is drawn first and the highest later as last.

The stages can be configured in 2 modes: planar mapping and dome mapping. Planar mapping stages are used for any projection surface for projecting planar (rectangular) content.
Dome mapping stages are used for full dome projection. The stage is in a form of dome master circle and the inputs can be positioned on the dome master circle.

Each input on the stage can be freely positioned, scaled and rotated. Different anchor points can be used for aligning the inputs.
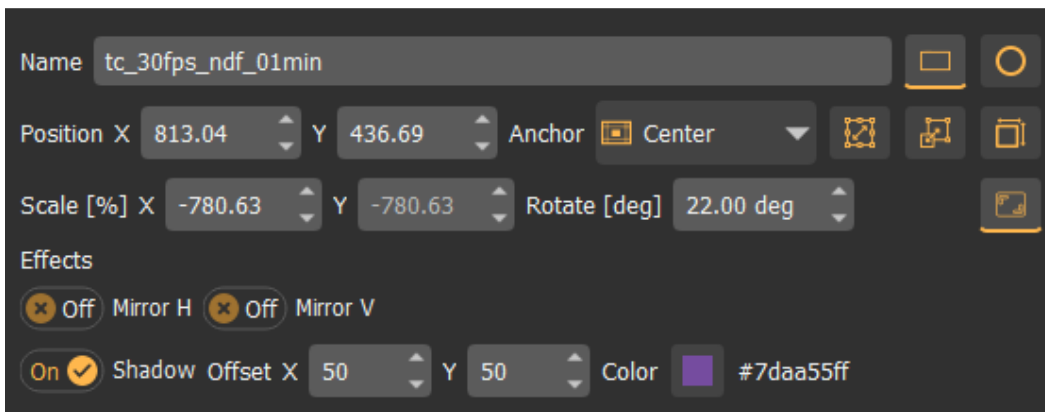
In addition to position, scale and rotation, each input can be individually flipped (mirrored).

For each input, a shadow effect can be defined including the direction of the shadow and the color (and transparency) of the shadow.

For dome playback and shows, based on dome master content, a planar stage item on a stage can be positioned using a polar coordinate: azimuth, elevation and scale.
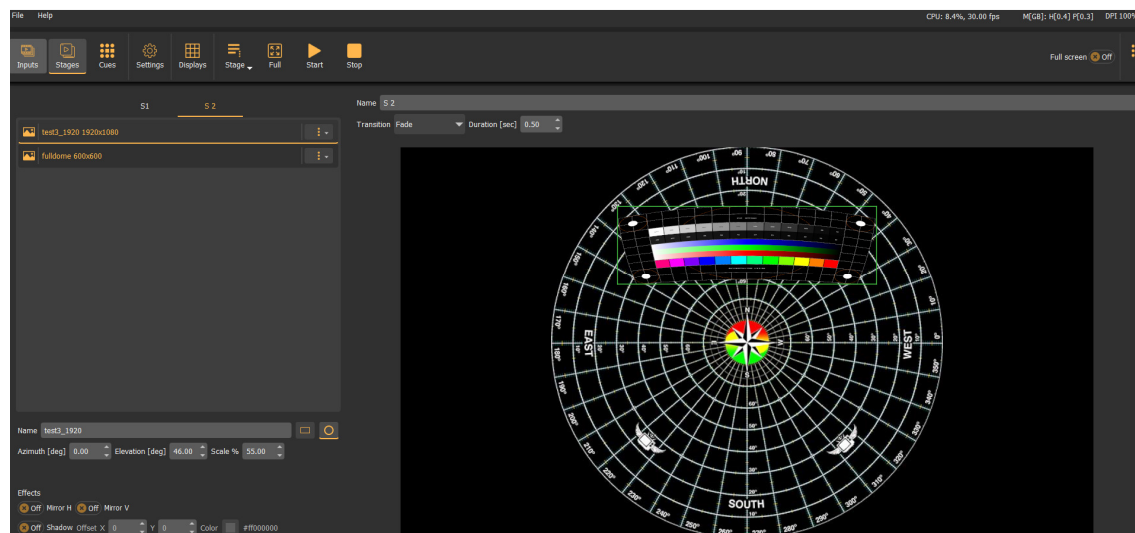
Combining multiple live or static inputs into one or more stages makes it possible to create rich and versatile presentations with one or more stages. The presentation can switch from one to another stage synchronously either manually or using automatic stage cues.

5.3 Cues page
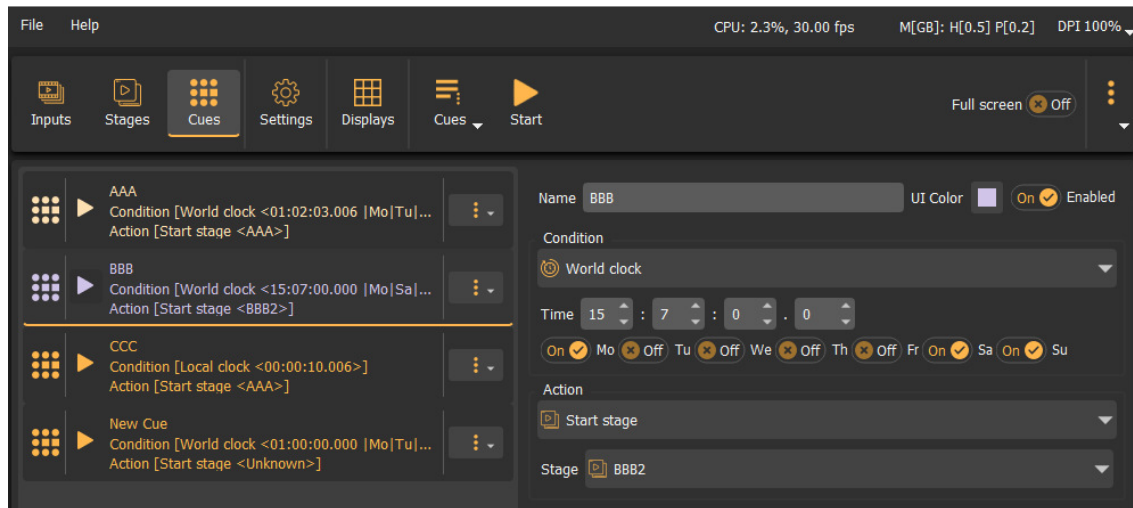
Cues are used to combine triggers that will trigger an actions. Currently, only a stage switch actions is supported to switch from one stage to another.

Actions can be triggered by a condition. When a condition becomes true, the action is triggered which will trigger the underlying action logic.

Currently, only time based conditions are supported. The time source can be selected from a local time (from the moment the software started), world clock source (system time) or a remote clock source (LTC or MIDI clock). The condition can be defined as a clock value (hour, minutes, seconds and milliseconds) as well as the day of week (for world clock time source). Once the clock reaches this value, the condition will become true and the corresponding action will be executed.

Currently, only one action is supported: Start stage. This action with switch from the current stage to the stage selected in the cue action.

Using the Cues button, new cues can be added in the cues page. Cues can be rearranged and removed using the cue button next to each cue.

In order to start evaluation of the conditions specified in each cue, the Play button has to be used to start the "Playback" of the cues.

The Settings/general page allows to specify the auto-start option to start the cues "playback" immediately after the software starts.

5.5 Displays page
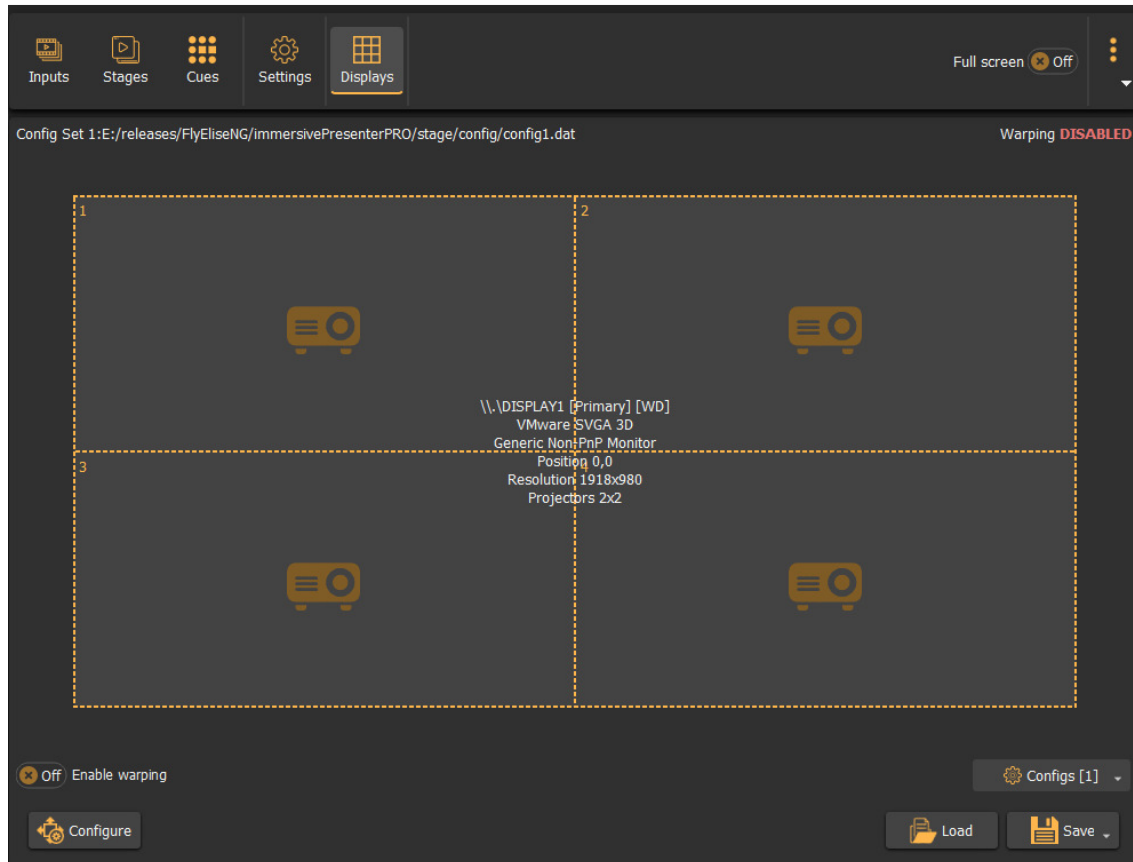
The displays page shows the detected displays on the system. Every time Immersive Presenter PRO is started, it detects all displays present on the system. Every display is presented with a button containing information about the display system name (known to Windows OS), the resolution and the number of projectors connected to this display. Initially there are no projectors configured to the displays.

By clicking on the display button a popup menu will be presented with all supported projector configurations.

The following projector configurations (horizontal x vertical) can be selected from the drop-down menu:

- None (No projectors connected)
- External calibration (Load .procalib files from Immersive Calibration PRO)
- All possible (horizontal x vertical) projector configuration with up to 16 projectors

Displays changes

When multiple windows displays are used (or multiple graphical cards) Windows sometimes enumerates and names the displays in an arbitrary order. Because Immersive Presenter PRO stores the warping and blending configuration per display, when Windows enumerates displays differently, the previously configured display can be renamed differently or can swap position with another display.

When the option "Check for display change" is selected, Immersive Presenter PRO will detect any changes in the displays configuration since the last time the settings have been saved. If changes are detected, the displays tab will be cored red. Pressing the Left or Right mouse button on the display will open the context menu. The first item in the context many will open the previously saved displays configuration and the users can select (take over) the previously saved configuration.

After selecting the projector configuration, click the "Configure" button to open the warping and blending configuration screen.

5.5.1 Geometrical corrections and soft-edge blending window

Geometrical corrections and soft-edge blending window provides a warping mesh of control points. By adjusting the position of the control points, the projected display can be mapped on any kind of planar or curved surface.

Depending on the projector configuration, a number of independent meshes are available (one per projector). The control points can be moved by mouse or by using keyboard shortcuts.

The number of horizontal and vertical control points can be selected from the advanced setup dialog or using keyboard shortcuts. Up to 50 control points can be selected.

Three editing modes are available:

- Geometrical correction
- Simple edge blending
- Advanced edge blending

In geometrical correction mode the image can be mapped on any projection surface by dragging the green control points with the mouse or using keyboard shortcuts.
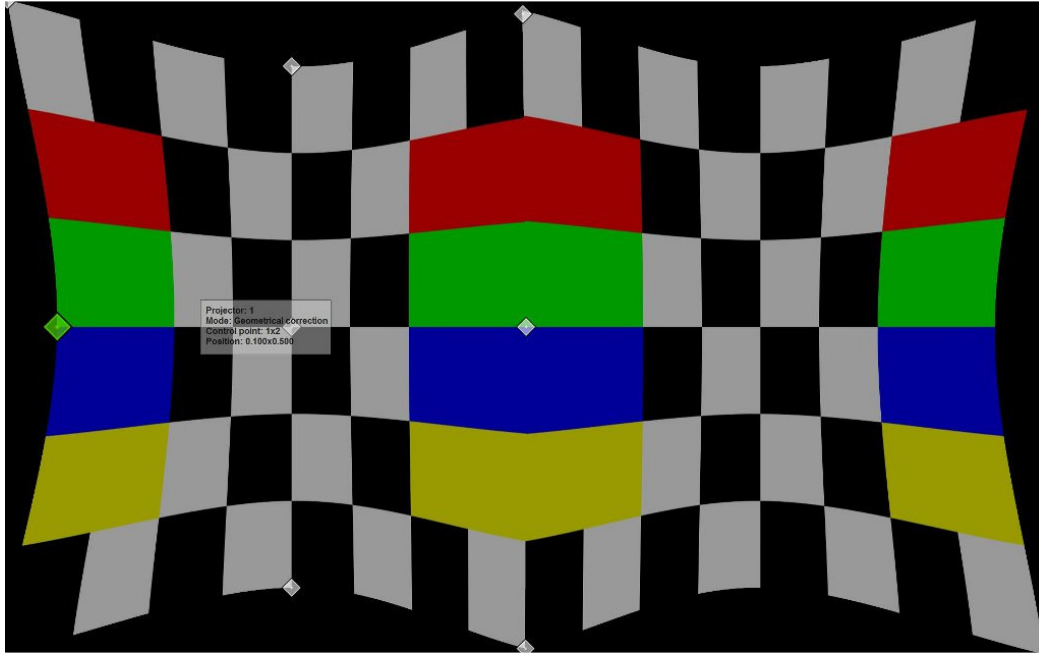
User can switch between geometrical correction and edge-blending mode using the "F10" key.

In simple edge blending mode, one control point is available per edge. User can drag the red control points to adjust the blending regions for each edge. Using the mouse scroll button the gamma value can be adjusted per control point.
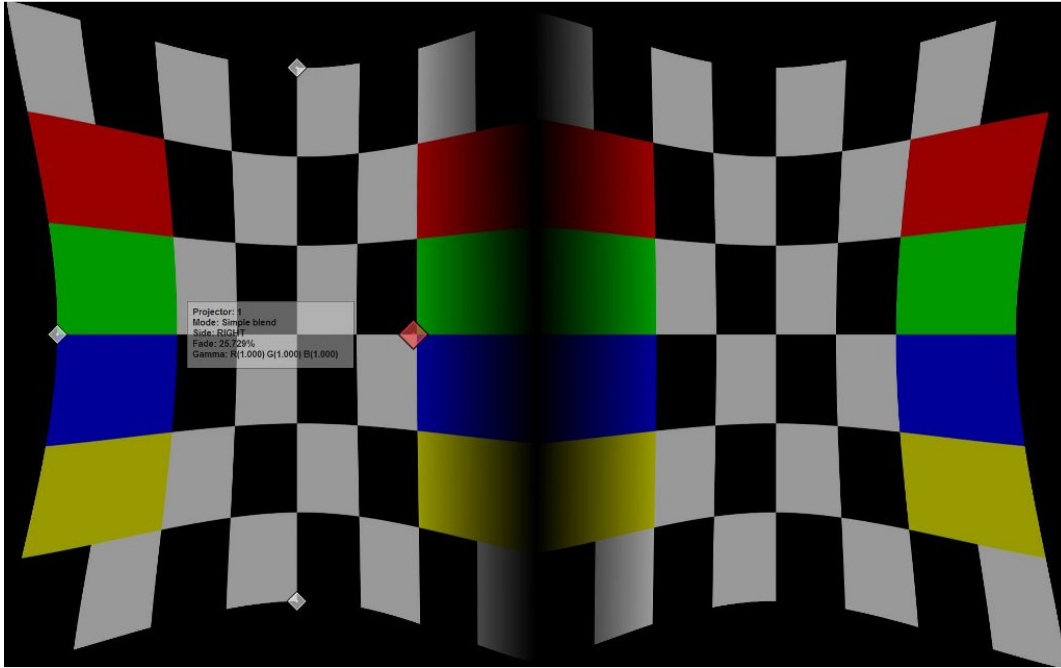
Using the advanced configuration dialog user can enable the advanced blending mode.

In advanced blending mode one or more control points can be defined per edge. The blue control points can me moved independently to realize the most complex edge-blending configurations.

Using the mouse scroll button the gamma value can be adjusted per control point.
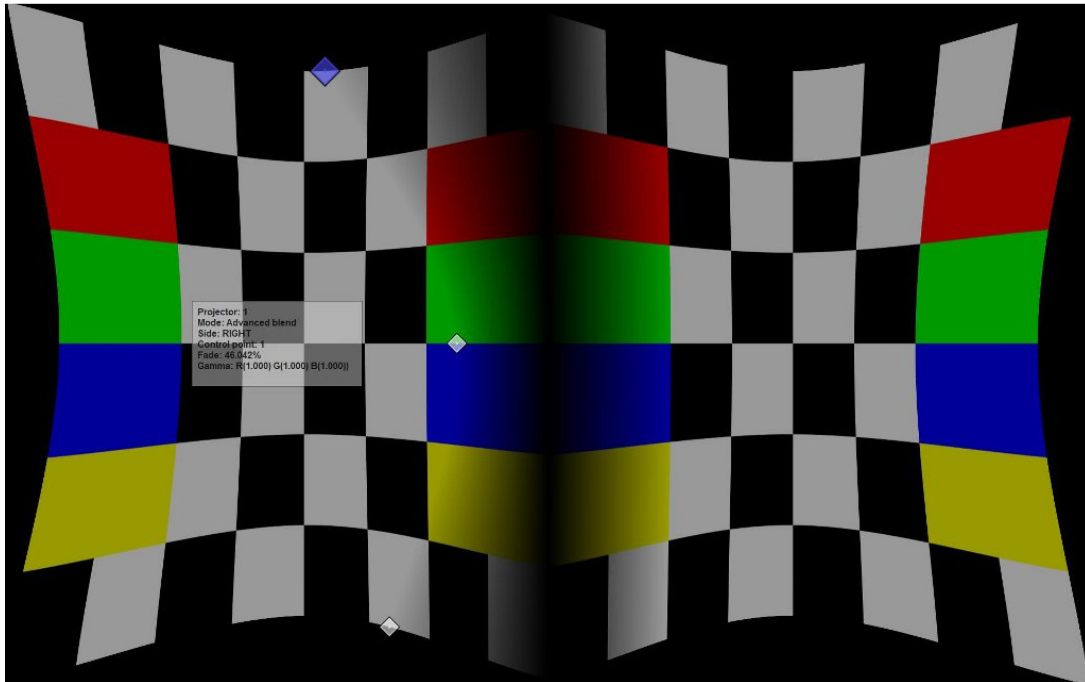
5.5.2 Keyboard and mouse control

Keyboard shortcuts

Modifiers		Key	Action
		D	Show/Hide advanced configuration dialog
		C	Center the configuration dialog on the projector
		I	Show Hide information window
		Esc	Close configuration dialog and window
		F5	Increase the number of horizontal control points
		F6	Decrease the number of horizontal control points
		F7	Increase the number of vertical control points
		F8	Decrease the number of vertical control points
		N	Select next geometrical correction grid
		Left	Select left control point
		Right	Select right control point
		Up	Select up control point
		Down	Select down control point
Ctrl		Left	Move control point left by 1 pixel
Ctrl		Right	Move control point right by 1 pixel
Ctrl		Up	Move control point up by 1 pixel
Ctrl		Down	Move control point down by 1 pixel
Ctrl	Shift	Left	Move control point left by 10 pixels
Ctrl	Shift	Right	Move control point right by 10 pixels
Ctrl	Shift	Up	Move control point up by 10 pixels
Ctrl	Shift	Down	Move control point down by 10 pixels
		F10	Toggle between geometrical correction and soft edge blending editing
		F11	Toggle between simple and advanced soft edge blending grid
		F12	Select next soft edge blending grid
Ctrl	Shift	Q	Reset all geometrical correction and soft edge blending grids
Ctrl		Q	Reset all geometrical correction and soft edge blending grids to the whole display area

Mouse operations

In geometrical correction mode:

- Drag control point with LEFT mouse button normal drag
- Drag control point with RIGHT mouse button fine grained drag
- Key combinations: "H" – drag all points in the same horizontal line
- Key combinations: "V" – drag all points in the same vertical line
- Key combinations: "A" – drag all points in the grid
- CTRL + S + MIDDLE mouse – Select a region to select all control points in the region
- CTRL + D + MIDDLE mouse – Select a region to de-select all control points in the region
- RIGHT mouse double-click – Select and De-select a control point

In soft edge blending correction mode:

- Drag control point with LEFT mouse button normal drag
- Drag control point with RIGHT mouse button fine grained drag

- Mouse wheel: Increase/Decrease the Red, Green and Blue gamma value of the soft edge blending point
- Mouse wheel + Key R – Increase/Decrease the Red gamma value of the soft edge blending point
- Mouse wheel + Key G – Increase/Decrease the Green gamma value of the soft edge blending point
- Mouse wheel + Key B – Increase/Decrease the Blue gamma value of the soft edge blending point

The list of all keyboard and mouse shortcuts keys can be shown in the calibration screen using the "Help" button. A new window will be shown next to the calibration configuration dialog.

5.5.3 Advanced configuration dialog

Pressing the "D" key can toggle the visibility of the advanced configuration dialog.

Geometrical correction tab
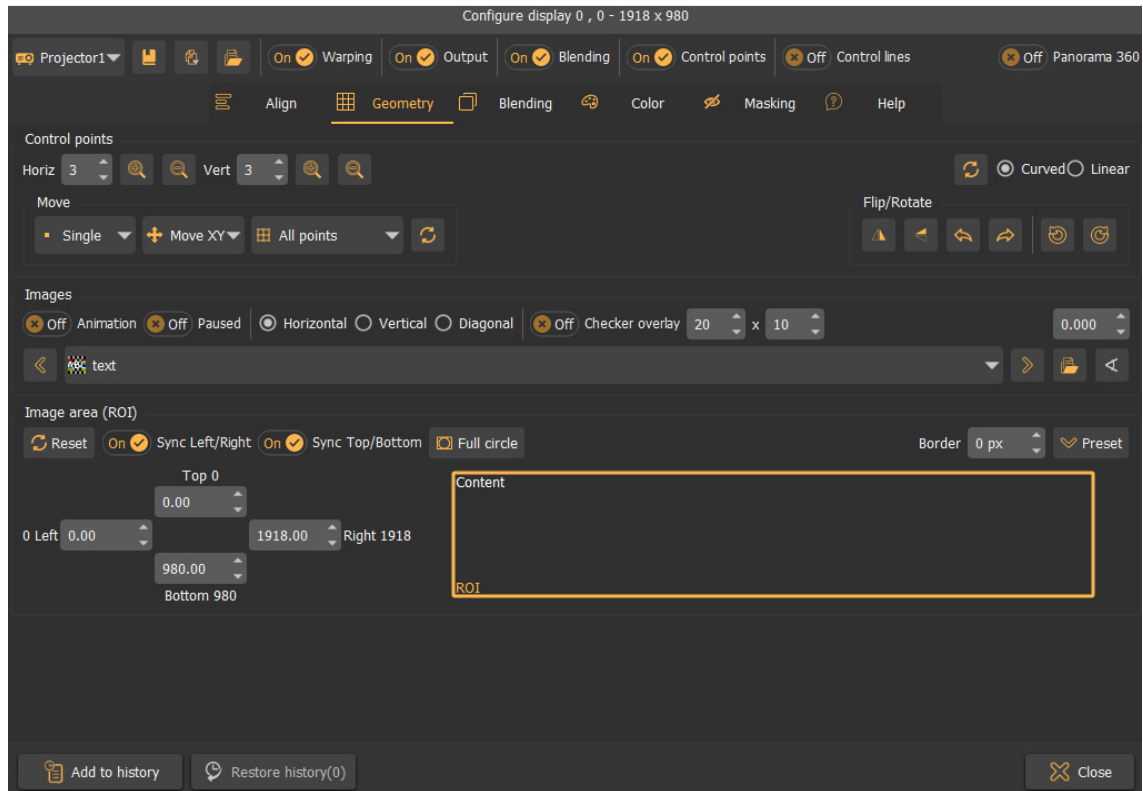
In the geometrical correction tab, the user can:

- Select the projector to be edited
- Enable/disable the projector output
- Show/hide the control points
- Show/hide the lines between the control points
- Select the number of horizontal and vertical control points
- Double or halve the number of horizontal and vertical control points
- Select the curved or linear geometrical correction
- Select to move single control point, all control points in the horizontal or vertical line, selected points or all control points on the grid
- Select to lock the movement in X, Y or XY directions

- Select to move only the edges control points and let the program interpolate the other control points
- Enable or disable the horizontal, vertical or diagonal animation lines for perfect geometrical correction
- Add additional checker grid overlay on top of the background image. Configure the number of horizontal and vertical checker boxes.
- Control for image mirroring, flipping and rotation
- Select the background image from the list of the built-in image of customer provided images in the images folder
- Load a background image from any location form the hard disk.
- Create a perspective images as background
- Adjust the image mapping on the screen for perfect aspect ratio.

Soft-edge blending tab
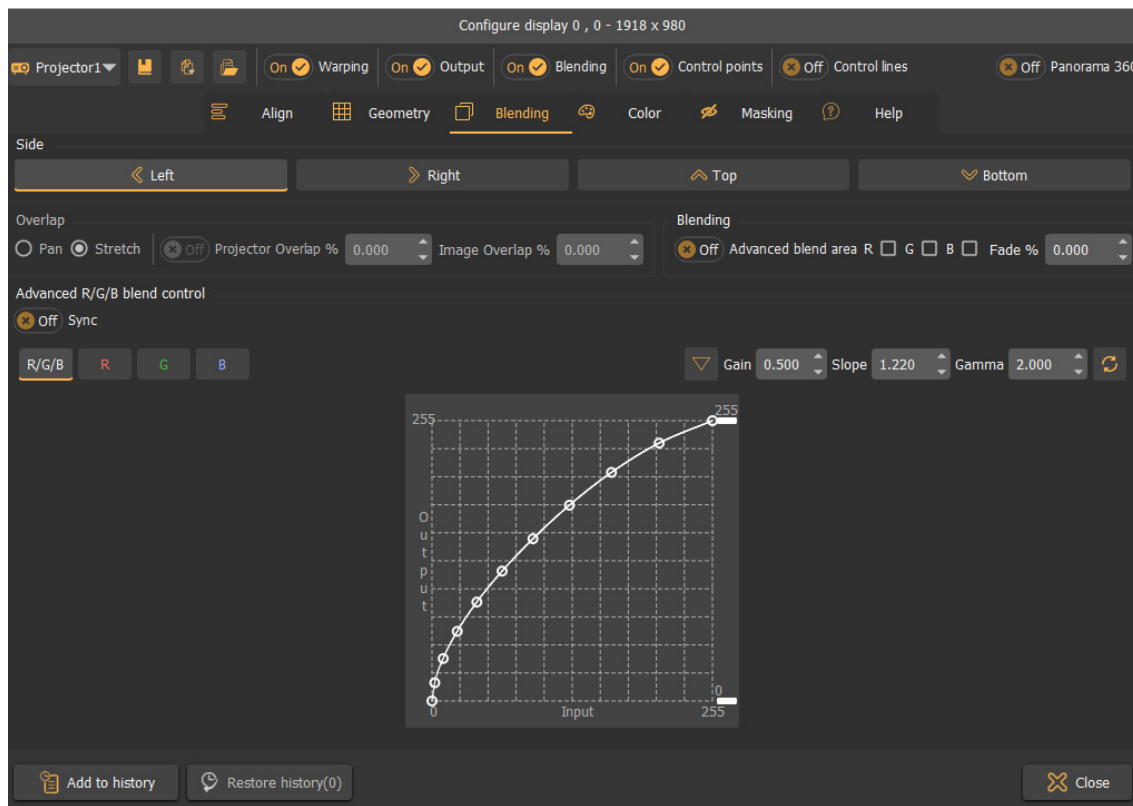
In the soft-edge blending tab user can:

- Select to edit Left, Right, Top or Bottom edge of the projector to edit the overlap or the fade (blend) area.

- Select between pan or stretch overlap mode
- Adjust the overlap region per edge
- Toggle between simple and advanced soft edge blending mode
- Adjust the fade region per edge (available only in simple edge-blending mode)
- Adjust the fade ramp per component R/G/B or for all components simultaneously.
- Use a parametric formula to configure the fade ramp based on 3 parameters (gain, slope, gamma).
- Manually fine-tune the fade ramp using the advanced fade controls.
- Select the masking bitmap that can be applied to the projectors.

Note: When putting the cursor on top of an adjustable field, a small window will be opened with one or two horizontal sliders. The first slider is for normal change of the value. The bottom slider is for very fine change of the value.
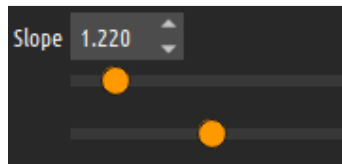
This is a very convenient input method that allows the users quick and fine adjustment of the blending parameters.

The overlap can be configured either as a projector overlap or as an image overlap. When the check box next to projector overlap is checked, the user can enter the projector overlap in percentages. This value should match the actual overlap of the projected images on the projection screen. When overlap is configured for that edge, the projected image will contain also part of the image projected from the adjacent projector. Both images must be matched on the projected screen. When using projector overlap, the overlap of the adjacent projector is automatically updated and the image overlap is automatically calculated.

Using the projector overlap is the preferred way of calibrating the overlap and produces the best results for manual calibration.

Note that, due to the limitations of the graphical system, the overlap region should be set only to projectors connected to the same display. For projectors

connected to other display, the output of the displays has to be configured in such a way that both displays show an overlapping image.

Fade is configured as percentage of the total projector image. This is a region whiting which the color intensity of the individual Red, Green and Blue components will fade to black for achieving seamless soft edge blending.

The width of the fade region is very important for achieving good soft edge blending. Before setting the fade ramp of the fade regions per projector users can select the red color of the of the fade region of the left part of the overlapped edge and select green color on the neighboring projector on the same overlap edge. A combination of green and red color will produce yellow color on the screen. Using the fade regions control points users should adjust the fade region per projector so that no red of green areas are visible outside of the yellow regions.
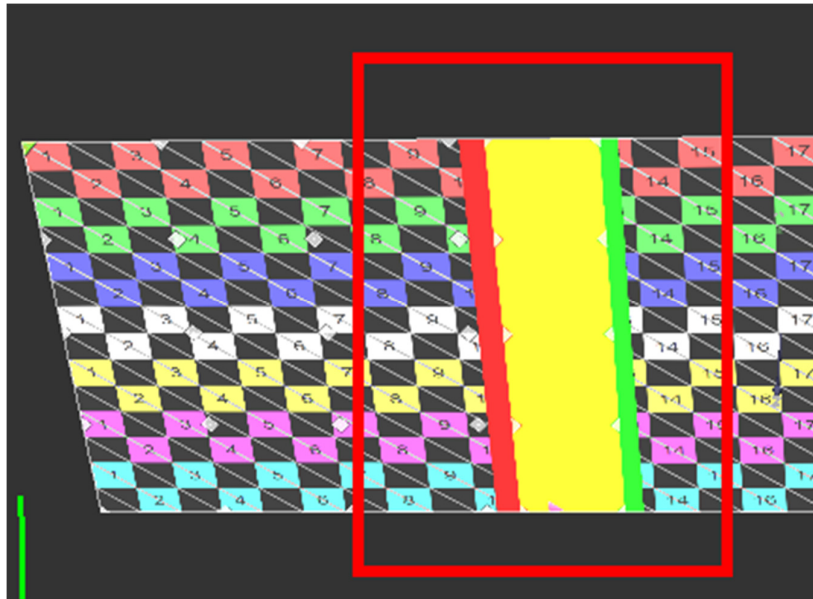
Fade regions wider than the actual projector overlap.
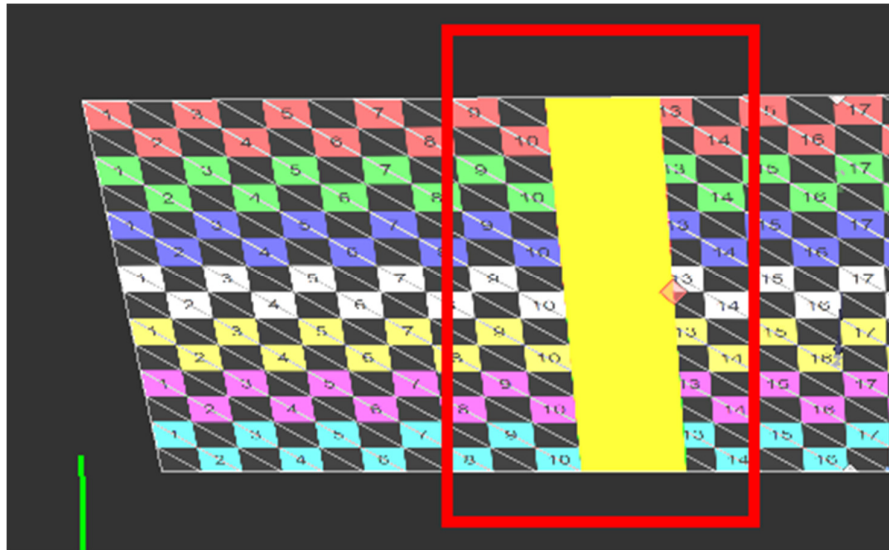
Once this alignment is completed, the fade regions color should be turned off and users can proceed to configure the fade out parameters.

This region can be configured using a parametric formula or manually. In manual mode this region is divided in 10 segments. The intensity of the color components and the beginning of the segments can be adjusted with the vertical sliders. The values inside the segments are interpolated.

In parametric formula mode the three parameters (gain, slope and gamma) can be used to create the desired fade function profile. The gain and the slope parameters determine the shape of the fade curve while gamma determines how fast the color will fade to black. The parametric formula can be adjusted per Red, Green and Blue color components or for all components together (Luma).

The following figure shows three gamma functions depending on the gamma value.
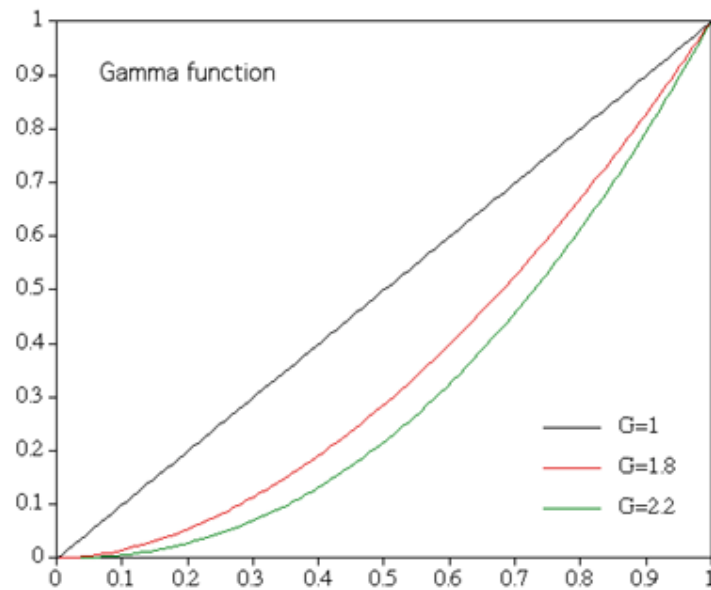
Color balancing tab
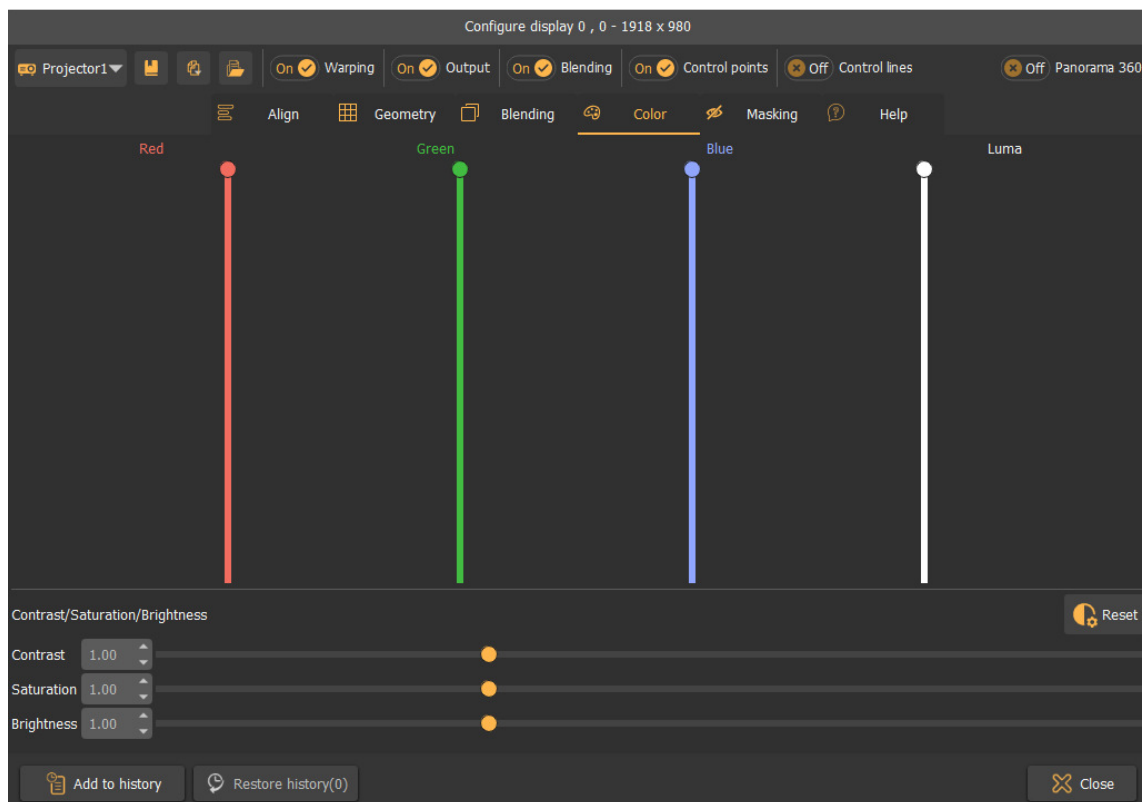
In the color-balancing tab the user can adjust the color profile per projector in order to achieve color uniformity among projected images.

Masking tab
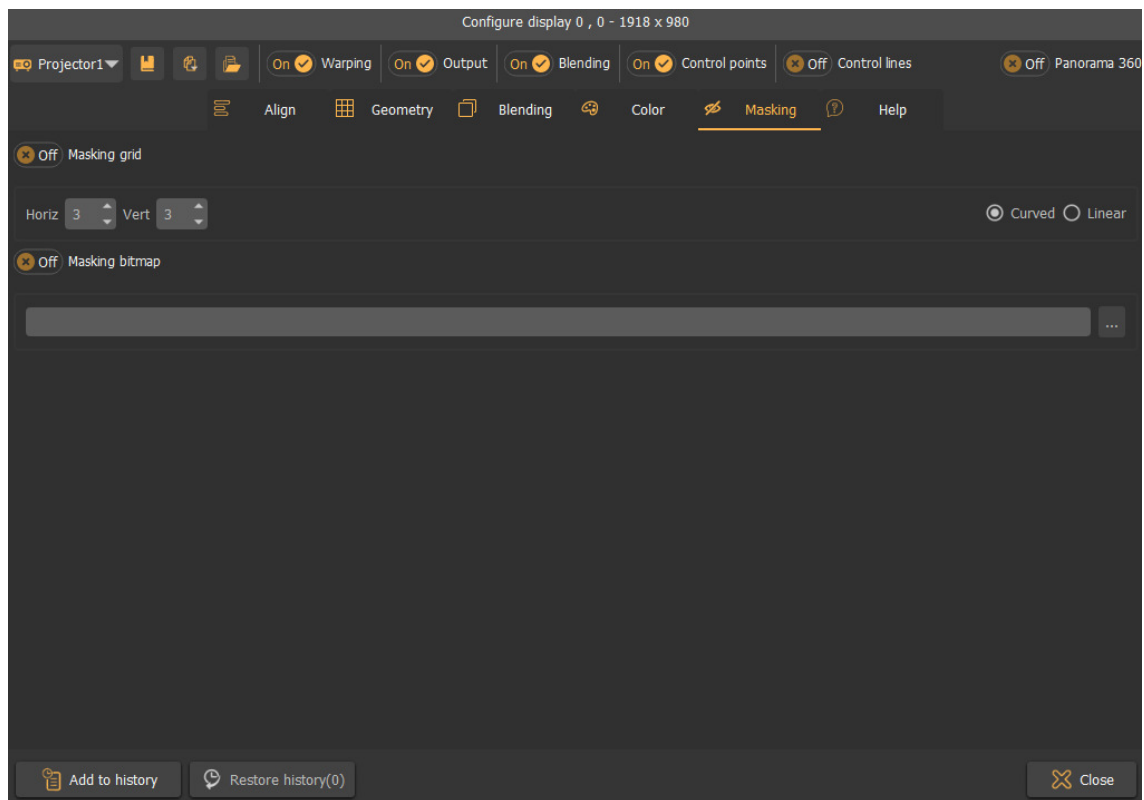
In the masking tab the user can select different masking options per projector or for the whole display.

When a part of the projected image has to be masked for whatever reasons the users can use the masking controls. Masking can be defined in two ways: An interactive masking grid per projector or a masking bitmap per display.

In the masking grid mode, user can use the grid control points in the similar way as with geometrical correction grids. The shape of the grid will determine which part of the image will be visible and which parts will become invisible and will be masked.

User can select the number of the horizontal and vertical grid control points as well as the mode of the grid: curved edges or linear edges.

In the masking bitmap mode, the user can select an existing black & white .bmp or .png file. The file can be prepared offline using a paint program.

The black parts of the image will determine which part of the projected image will be masked and will not be displayed.

Only one masking control can be selected at a time. When no masking control is selected the masking will not be applied.

Align tab

Using the Align tab user can use the align grid to indicate the position of the projected image on the screen as well as indicate the overlap regions on the screen with other projectors. By pressing the "Automap" button, Immersive Presenter PRO will calculate the geometrical correction, the overlap region and the edge blend region to produce the combined mapped image on the screen. This function is a utility function to map the projected image on the screen as accurate as possible using the align grid before the user can continue with the fine-tuning of the geometrical correction and the soft-edge blending.

The users have to position the grid points on the projector so that the points will be shown on the edges of the screen and the edges of the overlapping regions with other projector.
If the projector has one overlapping edge the grid contains only point for the screen edges and the one overlapping edge region. For projectors that have overlapping edges with more projectors (horizontally or vertically) the grid will contain points for all the overlapping regions.
The "colors" background image can be selected during mapping of the align grid for the best identification of the overlap regions.
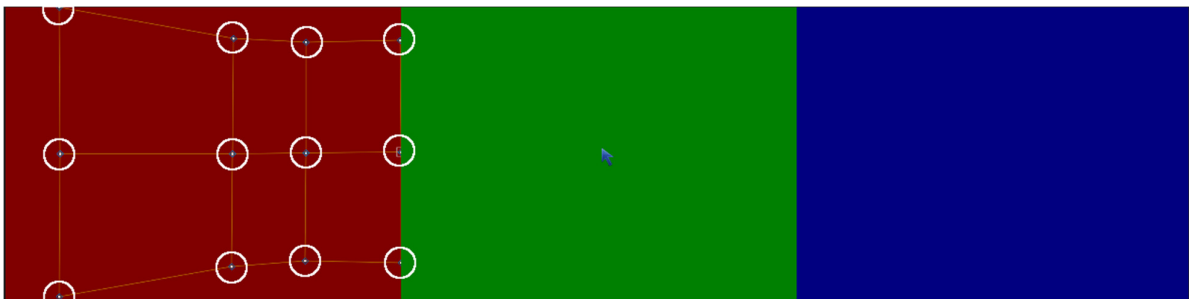
Left projector align points
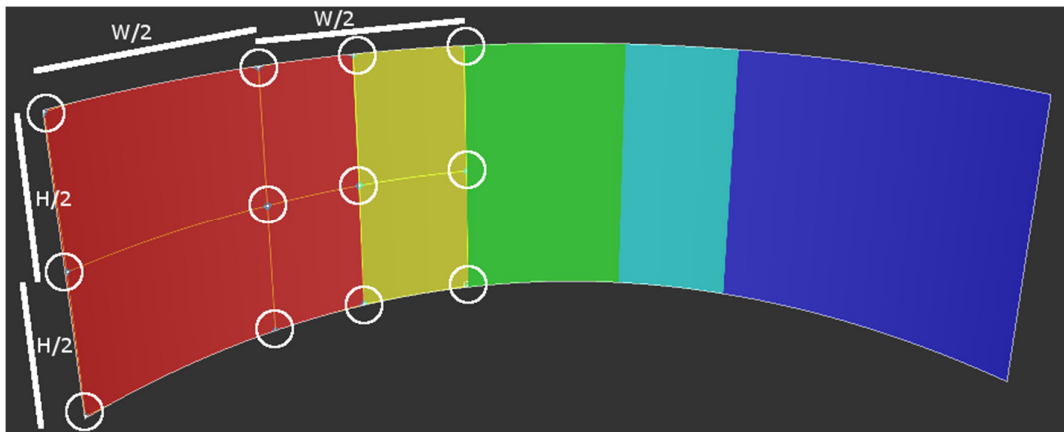
Left projector align points on the screen

A left projector in 3x1 projector configuration the first column of align grid points should be mapped to the left edge of the screen. The second column of the align grid should be mapped in the middle of the projected image on the screen for this projector. The third column should be mapped on the left edge of the overlap between the left and the center projector. The forth column should be mapped on the right edge of the overlap between the left and the center projector.
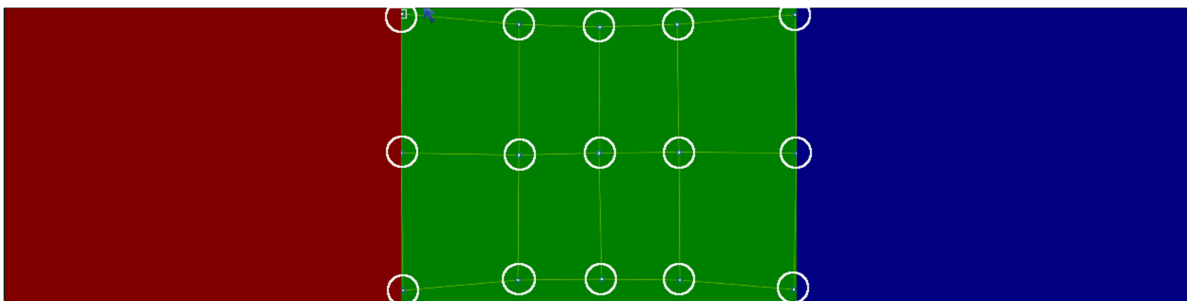
Center projector align points
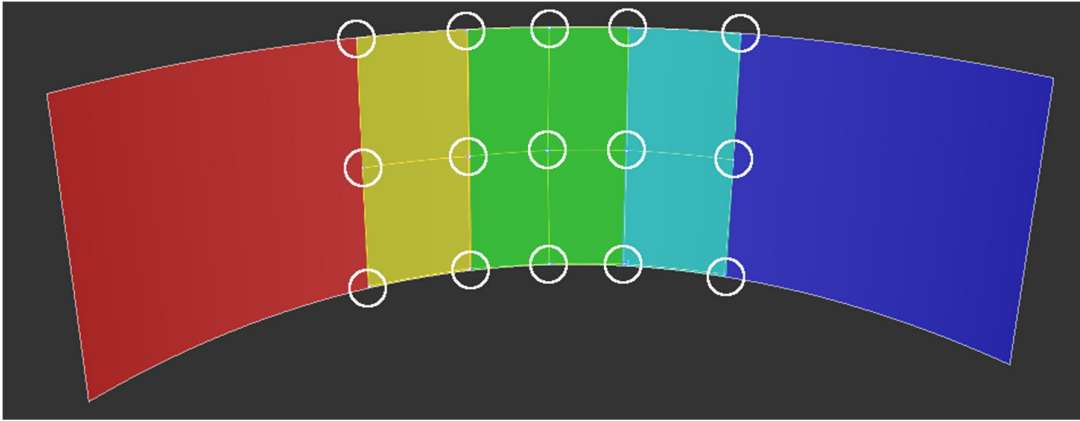
Center projector align points on the screen

Similar to the left projector the center projector has align grid points for the both overlaps with the left and the right projector. The most left columns of the align grid should be aligned with the overlap region with the left projector. The rightest columns of the align grid should be aligned with the overlap region with the right projector.

The align grid mapping for the right projector is similar to the left projector. After pressing the "Automap" button the warping approximation will be calculated and applied.
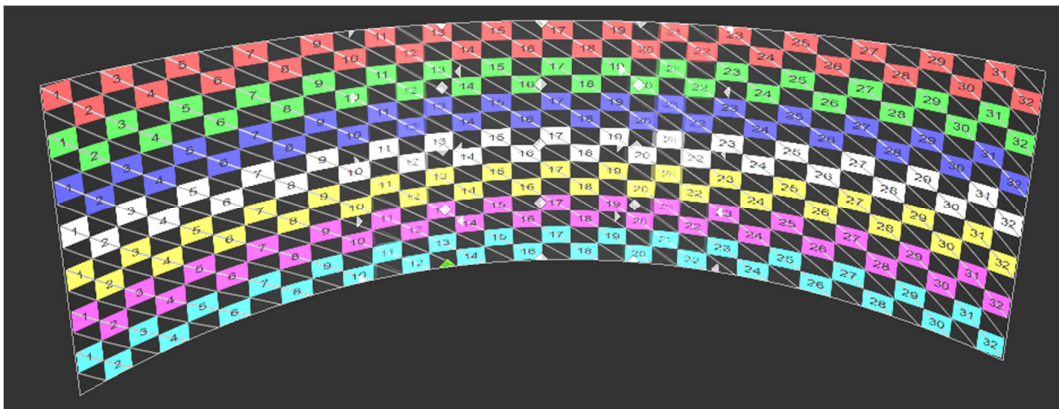
Only small adjustments of the geometrical correction and the edge blending are needed to get the perfect multi projector projection.

5.5.4 Button bar

The button bar contains the following buttons:

- Configure: Starts the geometrical correction and soft-edge blending configuration window if one or more displays are configured with projectors configuration.
- Configs: Opens a sub menu to select one of the 8 available configurations. Users can setup and configure each configuration separately. The warping and blending configurations will be saved per configuration set. The default keyboard shortcuts CTRL+SHIFT+1/2/3/4/…/8 can be used to immediately switch between different configuration sets.
- Load: Opens a load dialog to load another configuration file
- Save: Saves the current configuration.
- Save As: Opens a save dialog to save the configuration file with a different file name.

5.5.5 Config sets

Immersive Presenter PRO allows the user to configure multiple configurations that can be loaded at once and can be switched instantaneously. This can be used to have different warping and blending settings for brighter scenes and another blending configurations wit darker scene. Also the user can create one config set with _multi.procalib and another config with _single.procalib for warping multi-view and single view scenes respectively.
The users can switch between one of the 8 possible configurations sets using the default keyboard shortcuts (CTRL+SHIFT+1/2/3/4/…/8). If the game of the screen is warped, the warping will change instantaneously according to the selected configuration.

5.5.6 External camera assisted calibration

The manual geometric correction and soft-edge blending can be completely automated by using a standard off-the-shelves webcam. A HD webcam is

recommended for the best results (Ex: Logitech Webcam PRO 9000, Logitech HD Pro Webcam C920, etc.)

The external program *Immersive Calibration PRO* should be used to perform the automatic calculation of the geometric correction and soft-edge blending. After *Immersive Calibration PRO* has finished, the calculation results should be saved to a file "*.procalib".

Immersive Presenter PRO can import this file by selecting "External calibration" menu from the projectors calibration drop-down menu of the display.

After the external calibration file is loaded, users cannot perform further manual geometrical correction. Users can still manually adjust (fine-tune) the soft-edge blending parameters and the black offset parameters.

Note: "Ultimate" licensing option is required to be able to use Immersive Calibration PRO files in Immersive Presenter PRO

5.6 Settings page

The settings page contains Tabs for configuring Immersive Presenter PRO. The settings including the warping and blending configuration can be backed up and restored using the corresponding Backup/Restore buttons.

5.6.1 General
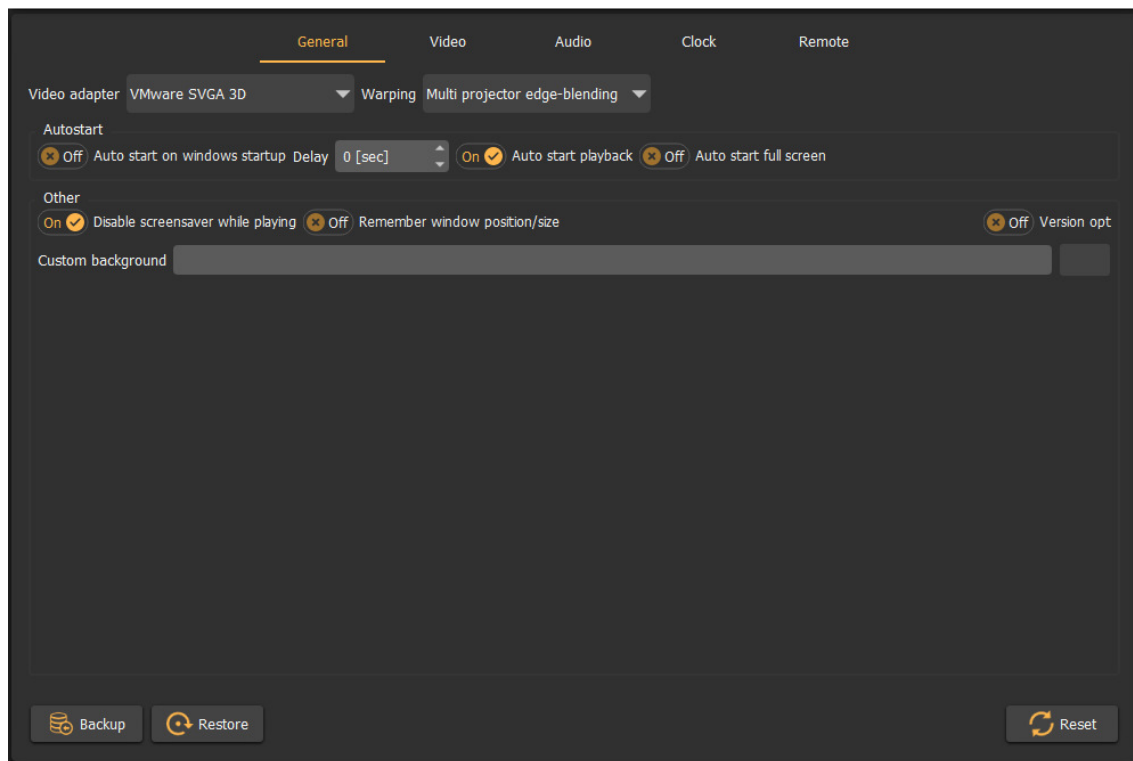
In this tab user can define if the software should be started automatically when the PC starts and if the show (full screen playback) should start automatically. Additionally, if the PC has more than one GPU, the software allows to select the primary GPU to be used for video decoding and processing.

Also users can specify if the screen saver should be disabled during playback. The warping can be configured in "Multi-projector warping & edge-blending" or "Projector mapping" mode.

If a custom background image is selected, this image will be used as an output when no other stage is selected.

5.6.2 Video
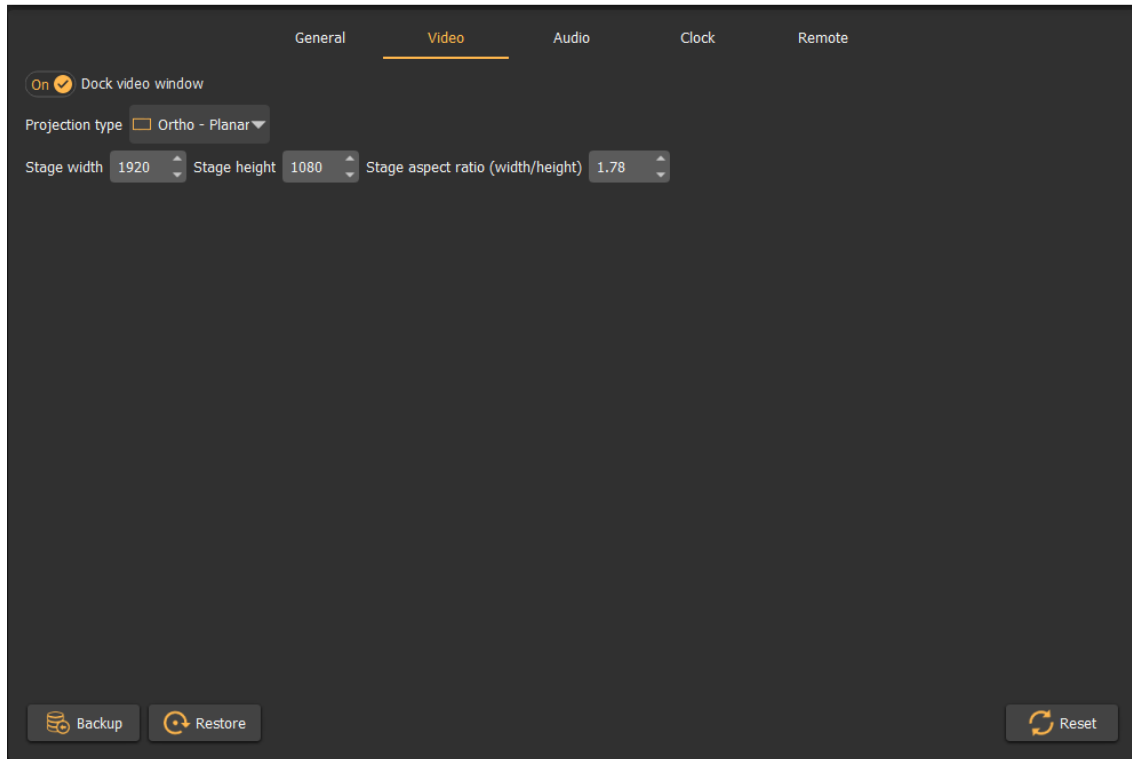
In the Video Tab user can define how the stage mode (planar or polar). For each stage type, the stage size can be configured. The stage aspect ratio must correspond to the projection surface aspect ratio. This will ensure correct aspect ratio during the projection and will prevent image stretching.

5.6.3 Audio
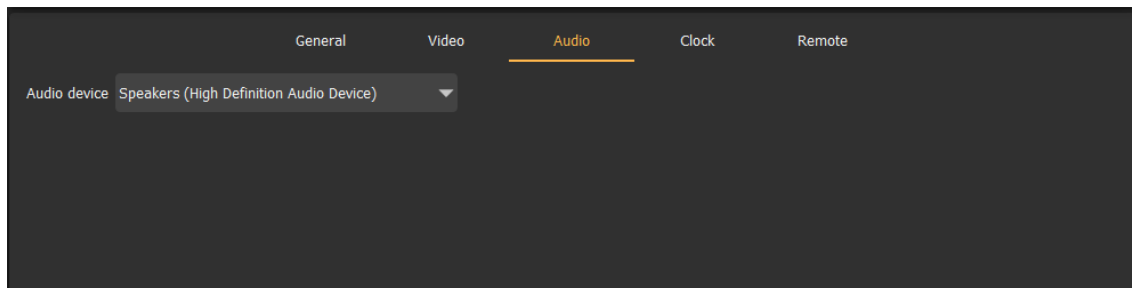
In the Audio Tab users can select which Audio device will be used for audio rendering If multiple audio devices are present user can select one.

5.6.4 Clock

The software supports 2 remote clock sources for medial playback: The LTC Clock and MIDI Clock.

LTC Clock
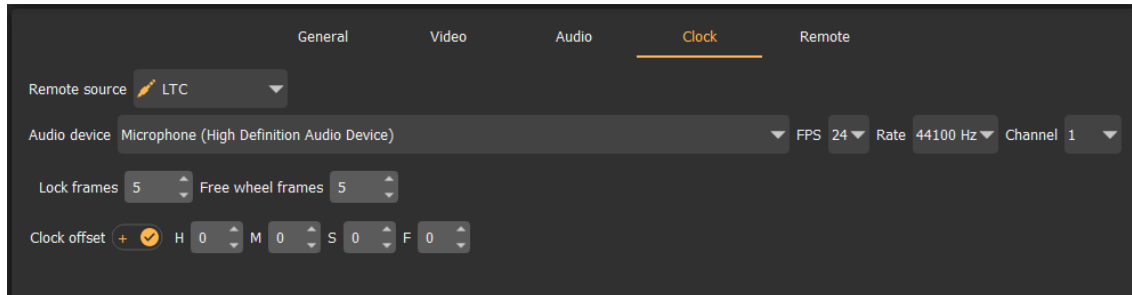
Linear timecode (LTC) is an external time code provider. Although the LTC signal is digital in structure, the transmission is traditionally via an analogue line. LTC is encoded with the required framerate, sample rate, bit depth and duration, to the SMPTE 12M specification. The data block for each frame has 80 bits. These include 26 bits to carry the SMPTE time, and 32 that can carry optional user data. The final 16 bits of the block comprise a fixed bit-pattern 'sync word' that an LTC reader uses to define the frame boundary, play direction, and bit-rate of the sync tone.

More info can be found here:

https://en.wikipedia.org/wiki/Linear_timecode

The users can select the audio device (and the input channel) that receives the LTC data, and configure the expected LTC frame rate (FPS) as well as the sample rate. Those have to match the source LTC generators settings.

MIDI Clock
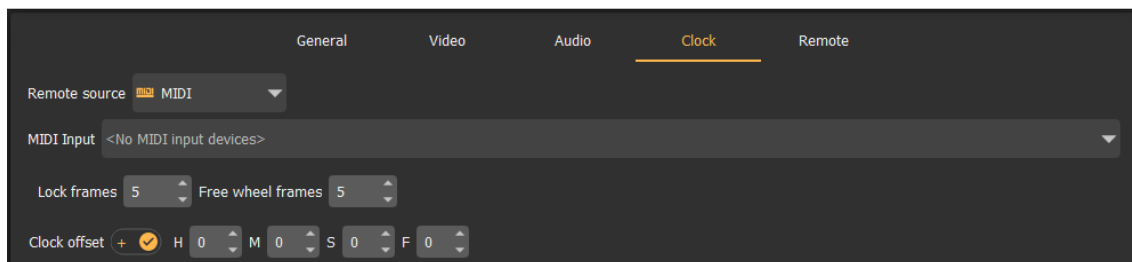
MIDI Time Code uses absolute time in its messages (the actual time on the clock in hours, minutes, seconds, frames, and sub frames). This data can then be translated into SMPTE messages.

The MIDI Clock receiver supports the following framerates: 24 fps, 29 fps and 30 fps. All frame rates are no-drop framerates).

The users can select the MIDI device connected to the PC which will be used to receive the MIDI time code. There must be an external MIDI Clock generator available that will generate the timecode.

In both LTC Clock and MIDI Clock modes, the users can specify the number of successive received time frames before the player will lock to the external clock. Also a number of free wheel frames can be specified before the player disconnects from the exte4rnal clock if the clock source is lost or not detected. Both settings can be used to configure the system for instable LTC or MIDI Clock sources.

Additionally, a positive or a negative time offset can be applied to the received LTC or MIDI Clock for different show control scenarios.

When LTC or MIDI Clock is selected, the window will show the information about the remote clock.
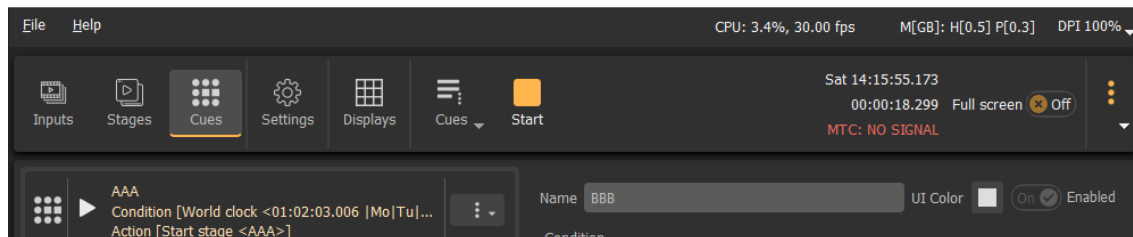
5.6.5 Remote
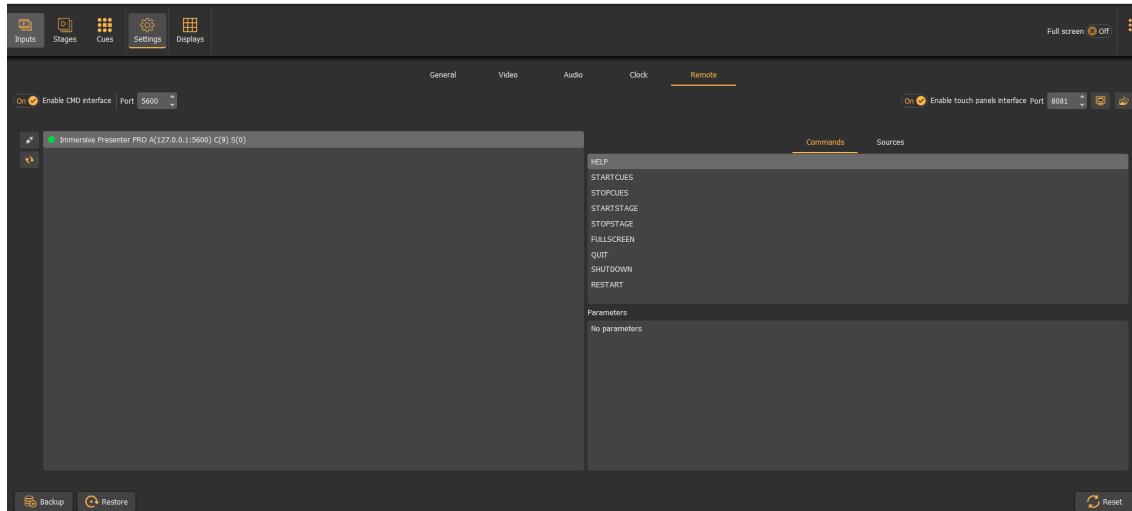
In this Tab users can enable the remote control interfaces. Both CMDNET and Touch Panels interfaces are available for integration with third party show control software or for creating a custom web based control panels.

Note: Depending on the licenses, some remote interfaces can be enabled or disabled. See the licensing options and the licensing types.

6   Video window

The Video window is shows the video content of the current stage.
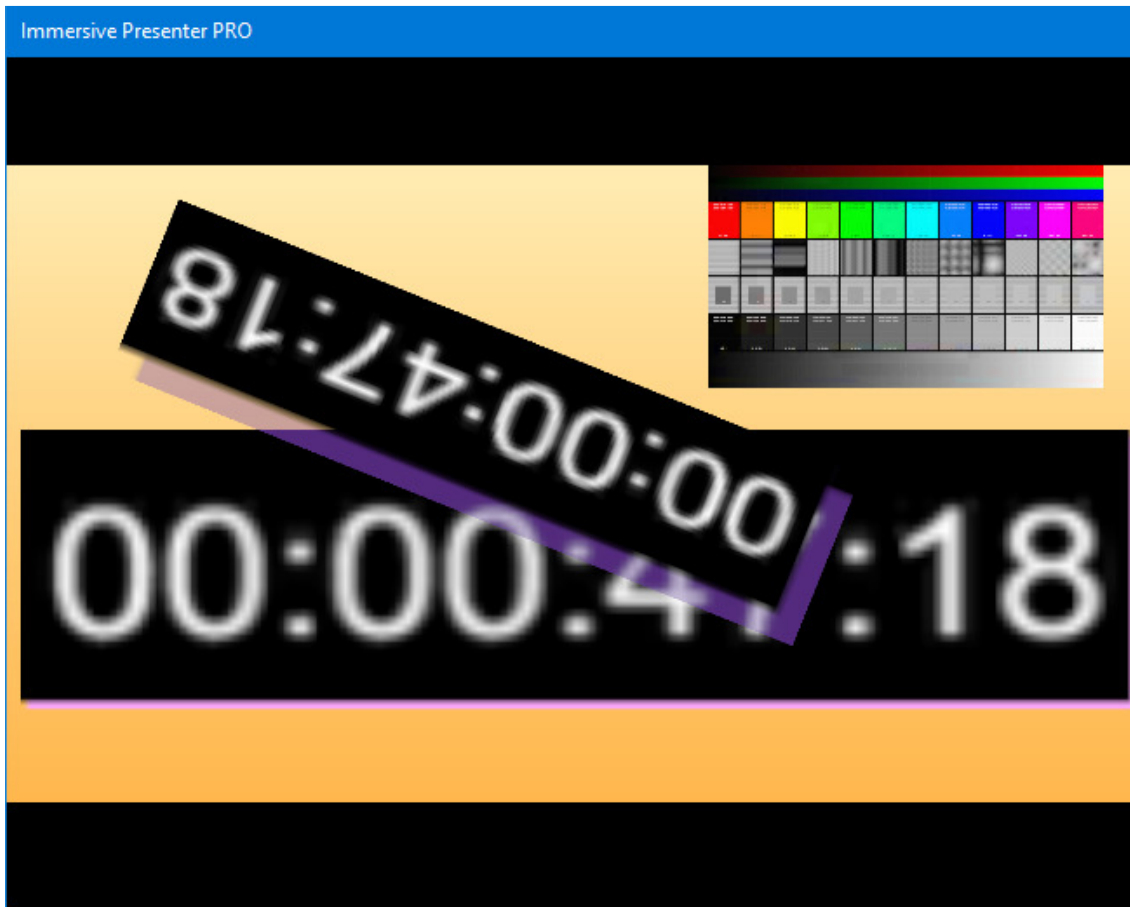
The following tables shows the keys combinations for the controlling the video window and the visibility, position and size of the additional OSD and info.

F	Toggle full screen mode
ESC	Exit full screen mode

7 CMDNET Interface

CMDNET is a TCP based interface with clear – text commands and responses.
This interface allows simple integration of the software with any (show)
control software that supports text based TCP control interface.
The CMDNET server waits for requests and then services them as it receives
them, in the order they are received. It responds to each request indicating
whether the request was carried out, and sometimes to provide requested
information. The CMDNET server will only send a message to the client in
response to a request. Exactly one message is sent by the CMDNET server to
the client in response to each request.

All commands and responses are sent in plain ASCII–encoded text. No data
is sent in binary form.
Each command has the following structure:

<COMMAND_NAME> <PAREMETER>;

The command name comes first, followed by an optional command
parameter (zero or one). The command and the parameter are separated by
a "space" character. A semicolon always ends the command.

Each command is processed by the CMDNET server and response is
produced.
The response has the following structure:

<RESULT_CODE>:<RESULT_INFO>;

The result code comes first, followed by result information. The result code
and the result info are separated by a ":" character. A semicolon always ends
the response.
The result code is one of OK or ERR. OK indicates successful command
execution. ERR indicates failure to execute the command.

The following is a list of the supported commands:

7.1 HELP

Description	Lists all available CMDNET commands
Command	HELP;
Response	OK:HELP, QUIT, …;

7.2 STARTCUES

Description	Starts the playback of the cues, if the cues are not started
Command	STARTCUES;
Response	OK: STARTCUES;

7.3 STOPCUES

Description	Stops the playback of the cues, if the cues are started
Command	STOPCUES;
Response	OK: STOPCUES;

7.4 STARTSTAGE

Description	Starts a stage with a given stage name.
Command	STARTSTAGE <stage name>; Starts a playback of a stage
Response	OK:FULLSCREEN;

7.5 STOPSTAGE

Description	Stops the playback of the cues, if the cues are started
Command	STOPCUES;
Response	OK: STOPCUES;

7.6 FULLSCREEN

Description	Enable/Disable full screen playback.
Command	FULLSCREEN on; enable full screen playback
	FULLSCREEN off; disable full screen playback
Response	OK:FULLSCREEN;

7.7 QUIT

Description	Quits and closes the warping software.
Command	QUIT;
Response	OK:QUIT;

7.8 SHUTDOWN

Description	Shuts down the PC.
Command	SHUTDOWN;
Response	OK:SHUTDOWN;

7.9 RESTART

Description	Restarts the PC.
Command	RESTART;
Response	OK: RESTART;

8 OSC Interface

Open Sound Control (OSC) is a data transport specification (an encoding) for real-time message communication among applications and/or hardware.
OSC's address space is entirely user-defined, thereby allowing it to be both lightweight and endlessly customizable and extensible to the user's specific needs. OSC messages are differentiated from one another by a URI-style symbolic naming scheme allowing for hierarchical organization of the address space.
https://opensoundcontrol.stanford.edu/

Immersive Presenter PRO supports remote control of the most important functions using well defined set of OSC message. The OSC support can be enabled and configured in the Settings/Remote screen. Note: An Ultimate license is required to enable the OSC support.

The following is a set off supported OSC messages. The type letter before the parameters indicates the expected parameter type Supported types are s (string), i (integer) and f (float).

Control	
/control/quit	Quits and closes the warping software.
/control/restart	Restarts the PC.
/control/shutdown	Quits and closes the warping software.
/control/fullscreen i:value	Enable/Disable full screen playback. Set value to 1 to enable fullscreen. Set value 0 to disable fullscreen.
Cue	
/cue/startcues	Starts the playback of the play cues.
/cue/stopcues	Stops the playback of the play cues.
Stage	
/stage/startstage s:stagename	Start the playback of the stage specified by stagename. Stagename is NOT case sensitive.
/stage/stopstage	Stops the playback of any active stage.

9   License options

The software can be licensed with different license modes. For more information about the available license modes please visit:

https://fly.elise-ng.net/products/

9.1   PC Locked and USB Dongle Licenses

The **PC Locked License** is "locked" to the PC Hardware components. The software will generate a "**HardwareID**", and based on this **HardwareID**, a "License Code" will be generated and emailed. The software can run only on that PC as long as the hardware components do not change. When a hardware component changes, the software will generate another **HardwareID**. Based on the changed **HardwareID**, it can be determined which component has been changed. If only one hardware component has been changed, we can generate a new PC Locked License. If the PC hardware is changed completely or a new PC is used, PC Locked License can NOT be re-generated.
If the software will be used on a changing PC Hardware configurations, or if the software will be used on more than one PC, a **USB Dongle License** needs to be ordered.
The **USB Dongle License** is stored and delivered on a secure "**USB Dongle**". The **USB Dongle License** is independent of the PC Hardware. The software can be used on any PC as long as the USB Dongle is inserted. USB dongles are delivered by post. Shipping costs are included in the price.

9.2   Commercial and Home-User Licenses

A **Commercial License** is for customers who are using the software for commercial applications and receive financial compensation from using the software. Re-sellers and system integrators who use the software in their solutions are considered commercial parties. Commercial license can NOT be ordered as PC Locked License. For commercial use only USB Dongle License must be ordered. If a PC Locked License is ordered and if the PC Hardware components change, PC License will not be re-generated.
A **Home-User License** (non-commercial) is for individual home-use only. It can only be purchased if no financial compensation is received whatsoever from

using the software. A Home-user License can be ordered as both PC Locked License and USB Dongle License.

9.3 License validity

Both PC Locked and USB Dongle licenses are **perpetual**. A perpetual license will allow the customer to use the licensed software **indefinitely**. For the first **2 years**, the perpetual license also entitles the customer to download all **updates** to the software and to receive **technical support**.

After the 2 - year period ends, the customer can choose to remain with the last version downloaded or to purchase a 2 – year **Updates & Support** package, for 40% of the license price. There are no penalties for letting Updates & Support lapse for a while before purchasing a new 2 – year Updates & Support package. The new 2 - year Updates & Support period will be extended from the expiry date of the last 2-year period.

9.4 Register the software with PC Locked License

After you send us the HardwareID, we will generate the PC Locked License Code.
PC Locked License can be entered using the Software License Window and pressing the **Enter PC Locked License** button.

License
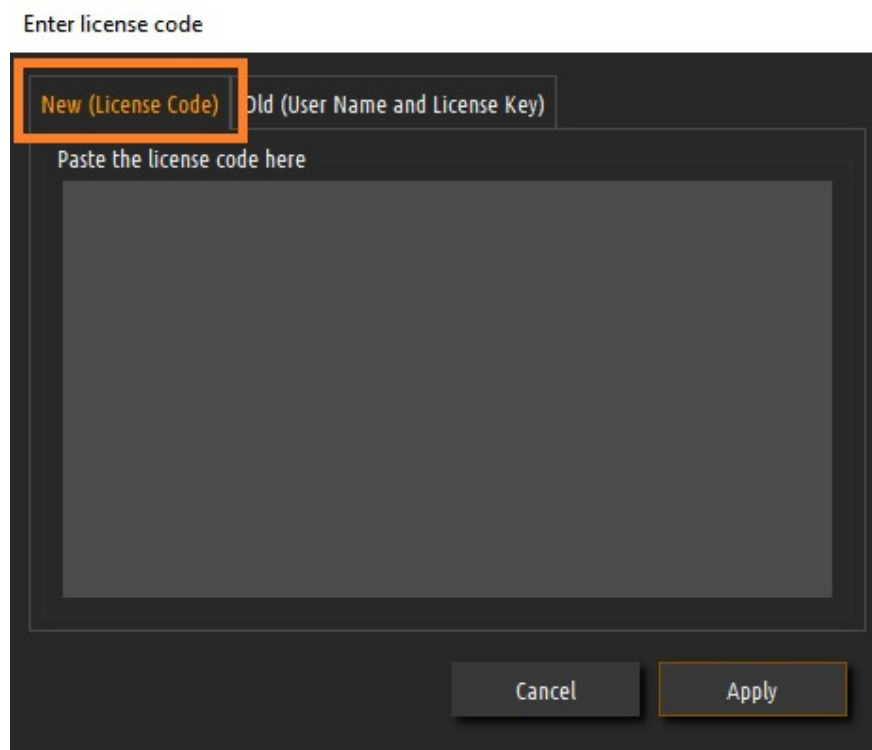
Registration type: Trial, 28 day(s) left

License info: **Ultimate**
Supported screens: Cylinder, PartialSphere, Plane, Cone, HorseShoeSingle, HorseShoeDouble, MultiPlane, FullDome, RoundCave, Model
Max projectors: Unlimited
Max cameras: Unlimited
Max eyepoints: Unlimited
Max objetcs: Unlimited
Projectors database: Full
F-Theta projector lens: Yes
Analyze: Warp & Blend, Projector Usage, Pixel Size, Pixel Resolution, Aitof Plot
Export to .dxf: Yes
VR headsets: Yes

HardwareID

Enter PC Locked License

Close

A new window will open to enter the license code.

Enter license code

New (License Code)   Old (User Name and License Key)

Paste the license code here

Cancel   Apply

Paste the license code that you received from us in the window and press Apply. The software needs to be restarted to apply the license.

If you have an "old" license with UserName and LicenseKey, select the "Old" tab.

Enter the UserName and LicenseKey. Press Apply and restart the software to apply the license.

10 License agreement

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