

# bricolage

## User Guide

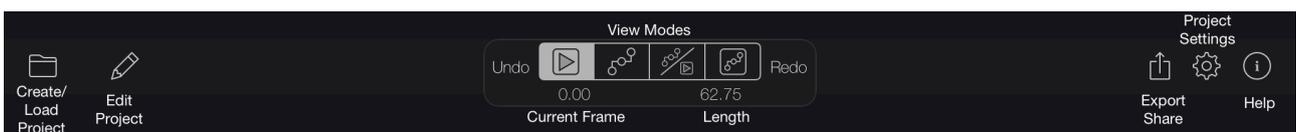
### Quick Start

Bricolage mixes and processes images, still and moving, by passing the image through a series of separate processing steps. The path of an image flowing through these steps is represented by a wire traveling from the output on the right side of a block to the input on the left sides of the next block. We call these blocks nodes. You make connections simply by touching an output port to an input.

Because you can connect an output to as many downstream inputs as you like, and some of these nodes have more than one image input port on the left side, final compositions are typically branching chains of nodes where images are mixed with versions of themselves and other images. See the [Building Flows](#) section for some simple examples.

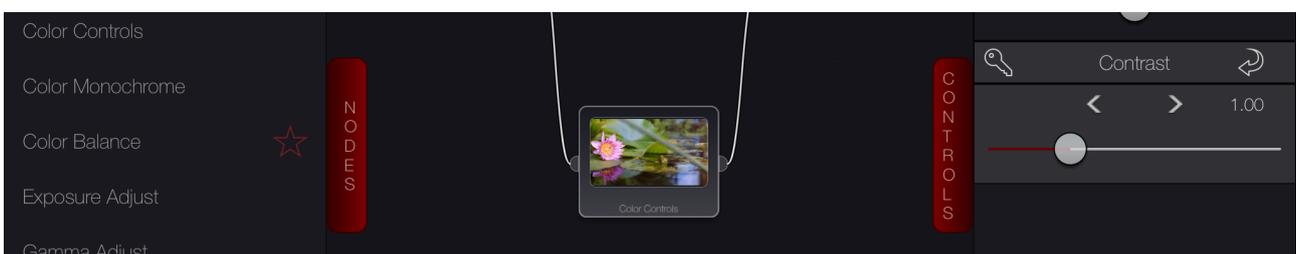
### View Modes

Bricolage has two main views, a 'Flowgraph' view, where you can see the flow of effect nodes, and a player view, where you can see your composition. There are four layouts to choose from, a player, a flowgraph view, a split view with flowgraph and player, and a view with nodes overlaid on the player. You can edit nodes in any node view and edit parameters for the selected node in any view.



### Parameter Controls and Node Picker

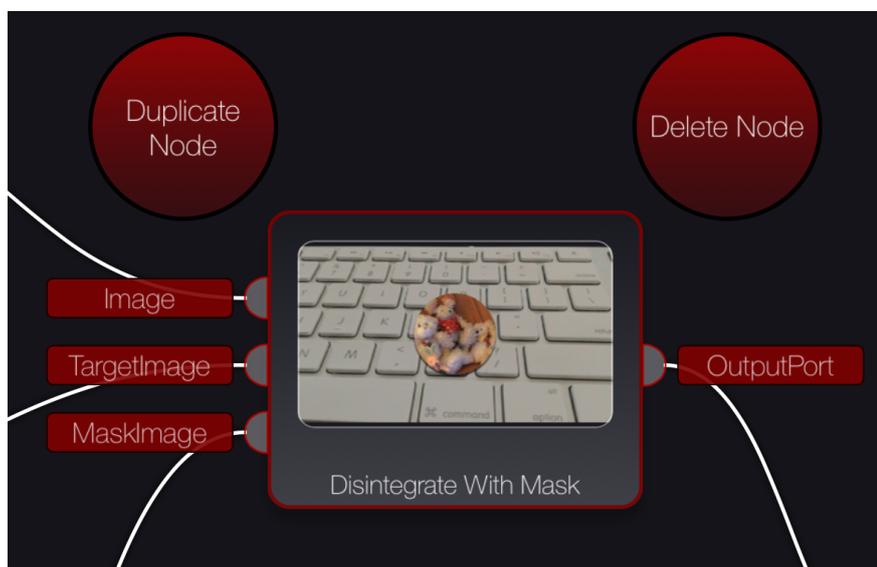
The parameter controls and node picker are found on the right and left sides of the interface respectively. The parameter controls will open as soon as you touch a node. You can also open and close it by tapping on the red button labeled Controls. Deselecting all nodes will close the controls. The Node picker can be opened by tapping on the red node button. Tapping on any name in the picker will add that node to the centre of the flowgraph.



# Nodes and Links

## Nodes

A node represents a video or image source or an effect. The nodes produce a result image at the output port on their right side, and can have multiple images coming in to their input ports on the left side. You can connect two nodes by touching the output of one to an input port on another. There is a special final output node that only has one input and no outputs. The input feeding into this is the final result of your composition. It's what you see in the player and in exported movies. When you touch a node, it will be selected, and any adjustable settings in the node will be available in the drawer on the right side. Nodes show a preview of their effect applied on their input. Touch and hold on a node, and a control panel opens allowing you to delete or duplicate the node, and shows you the names of any inputs.

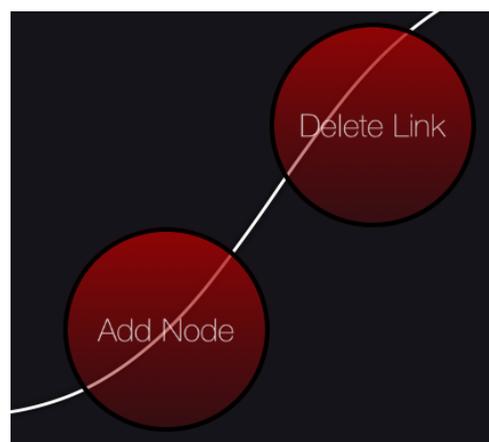


## Node Categories

Nodes that have a star next to them are custom nodes. Custom nodes which have a gold star next to them are professional nodes. You can test them, and if you like the results you can remove the watermark by clicking buy.

## Links

A link is the connection between two nodes. Links are created by touching (kissing) two node ports together. Touch and hold on a link to add a node into that connection.

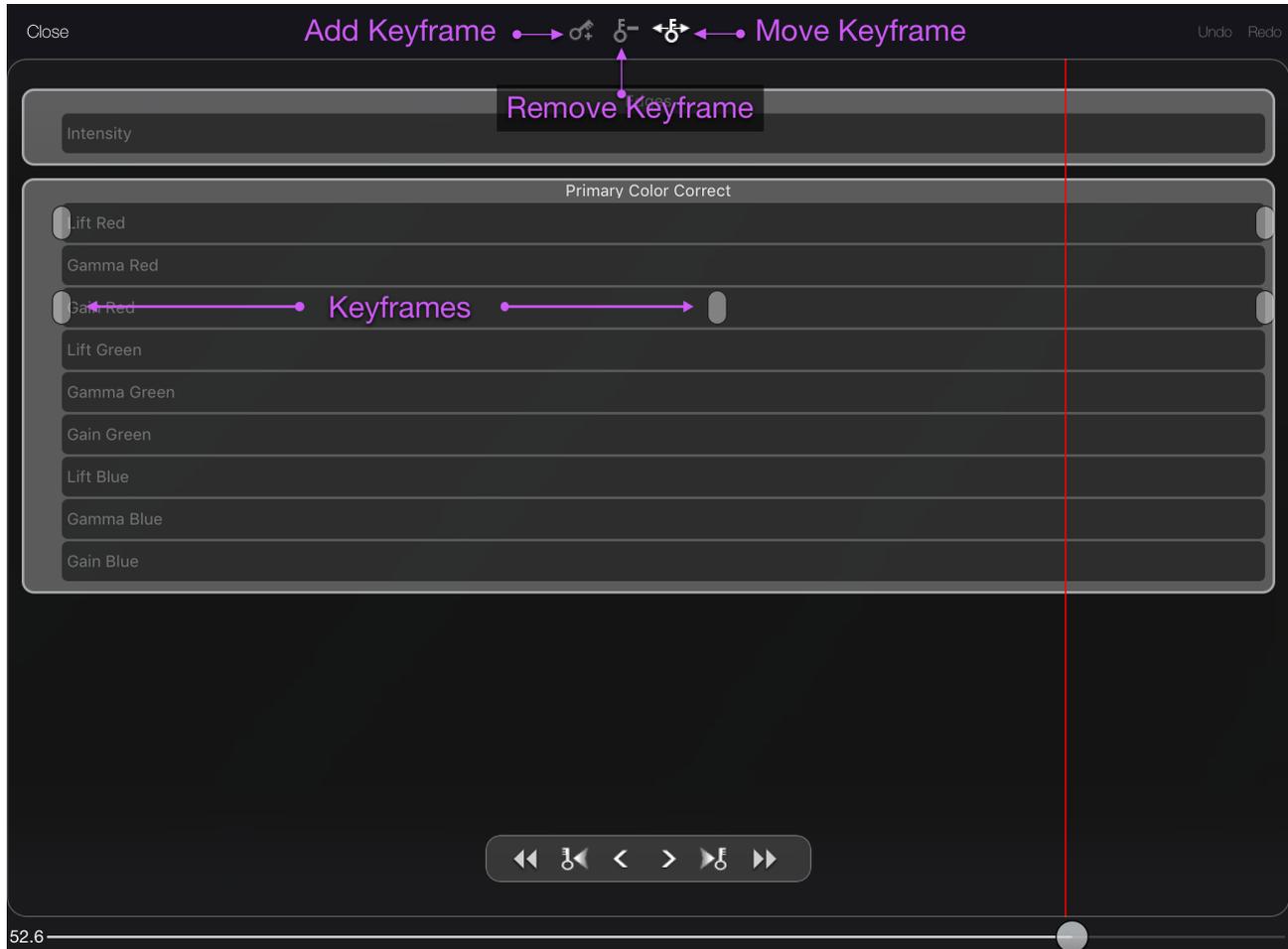


## Animating Settings

You can make adjustable settings change over time by setting a time with the time slider, then tapping the key button next to the setting. When the key is solid, there is a 'keyframe' at the current time holding the setting value that time. If you move to another time and change the setting, a new keyframe is created and the setting will change smoothly between the keyframe values as the video plays between the keyframe times. To make a setting change over the entire composition duration, jump to the start, set the setting, tap the key, jump to the end and set the final value. To remove the animation, tap the key again to remove the keyframe.

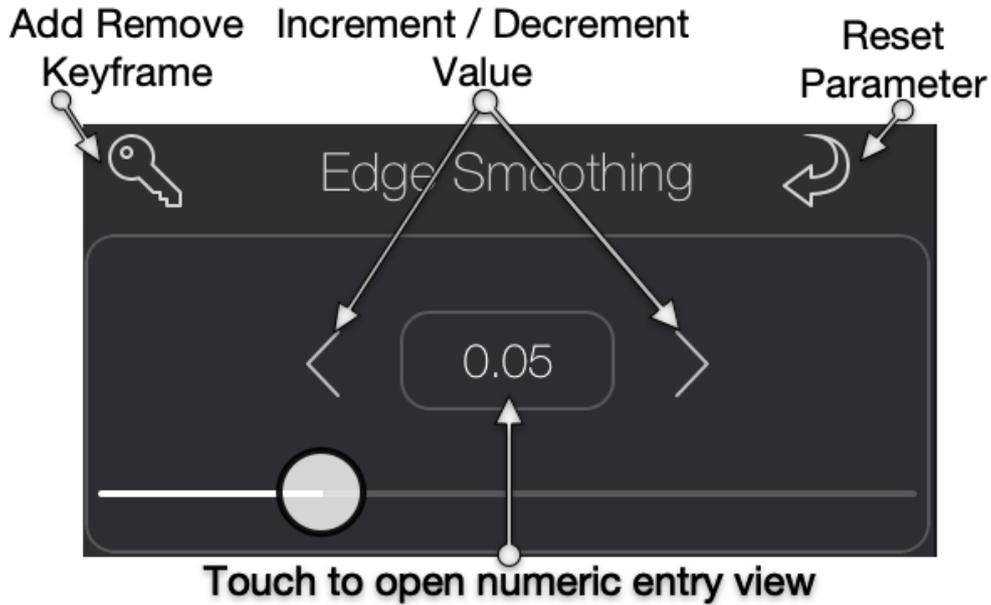
## Keyframe Editor

Selecting Edit Keyframes in the Edit popover will open the full screen keyframe editor. Each section in the filter keyframe editor corresponds to one filter. All channels for each filter are displayed, whether they have keyframes or not. You can pan and zoom to make editing keyframes easier. Keyframes can be moved by turning on the move keyframe button and performing tap, hold and move on individual keyframes. Keyframes can be deleted by turning on the delete button and tapping on the keyframes you want to remove. To add keyframes turn on the add button and tap where you want a new keyframe. Select or deselect filters by tapping on their section. If no filters are selected, the goto next / previous keyframe buttons will take into account all filters in the scene. If a filter is selected, only it will be taken into account when navigating keyframes



## Node editing

Touching on a node will make the parameters for that node visible on the right. You will see controls for each parameter associated with the node.



Special cells for position editing. When adding a path to control the position, press the curve button. When a path is set for a particular channel, the curve button turns red. To re-edit the path, simply press on the red curve button to open the path editor again.



## Play Controls

**Play Mode:** loop or play to end

**Goto start:** if an element is selected that has a different start point than the scene, the goto start button will first navigate through the selected element's end and start points and then goto start. If nothing is selected, goto start will go straight to the beginning of the scene.

**Goto previous keyframe:** this button is only enabled when an element is selected or the background filter drawer is open. It will navigate time to the previous keyframe.

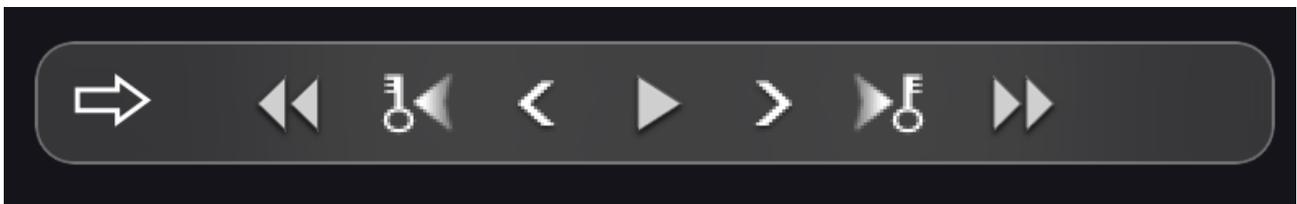
**Step back:** go back one frame

**Play:** plays to end or loops, depending on the play mode setting.

**Step forward:** go forward one frame

**Goto next keyframe:** this button is only enabled when an element is selected or the background filter drawer is open. It will navigate time to the next keyframe.

**Goto end:** if an element is selected that has a end start point than the scene, the goto end button will first navigate through the selected element's start and end points and then goto end. If nothing is selected, goto end will go straight to the end of the scene.



## Playback and Proxies

The playback controls let you play and pause video, jump to either end of the video, or step up or down to the next frame or the next keyframe in the animated settings of the current node. depending on the resolution of your picture, the speed of your iPad, and the number and type of nodes in your composition, your video play back may be slow or uneven. To get faster playback and more responsive adjustment of node settings, you can choose to work with a 'proxy' version of your movie at 1/2 or 1/4 the full resolution by tapping the gear icon. When you export your final composition, it will always be at the Render Resolution you choose. For filter effects, and some others, the effect result is very dependent on the resolution. If your composition looks very different when switching to a different proxy resolution, be sure to check it at the same resolution you intend to render at, to get an accurate preview of what you will be saving. This can also cause the thumbnail images that appear on nodes to look different from the composition.

**IMPORTANT HINT:** While proxy mode can greatly increase performance on slower hardware, it has one drawback. Some filters, namely distortion filters, tiling filters, crop and Flash do not scale well with proxy resampling. They may look markedly different or have markedly different positions when changing the proxy scale.

# Images and Compositing

## About RGB and A

In bricolage all images are made of pixels whose color comes from its red (R), green (G), and blue (B) components. When R,G, and B are all 100%, the color is white, when they are all 0%, black. There is a fourth component known as 'Alpha' (A) that is used as an opacity for mixing the color with a background color. With alpha at 100%, the color is mixed purely from its R,G, and B components, with alpha at 0%, the color is completely transparent. Compositing operations use this alpha amount to lay images over one another. Many operations can use a 'Mask' image to specify mixing and transparency. A mask image is a greyscale image where the black parts are interpreted as transparent parts, the white as visible.

## Mixing Pixels

Many of the nodes perform operations to mix two or more images together by doing some math on the color components of individual pixels in the images. You can add, multiply, subtract them, make the components all equal to create a greyscale image. If you add or subtract pixels, they can go out of the legal range of 0% to 100%, creating incorrect colors. To prevent this you can use a Clamp node to lock the pixel components into range.

## Regions and scaling

You can mix different size images and video sources in your composition. The output matches the resolution of the main video input. Use the *Crop* and *Move Rotate Scale* nodes to cut out and position other sources relative to main video input. Some nodes work with a 'Mask' image, which is a black and white image whose white parts cut out a visible region. The black parts are transparent, grey parts are partially transparent.

## Depth Data

Newer iPhones and iPads can take photos that include embedded depth data. When you load such an image, an additional image input node will also appear. This grey image holds the depth data. This data is lower resolution than the photo, but a high quality scaling option is included. You can also choose to normalize the data, so the pixel values range from 0 to 1.0. You have up to three options for how the data will be presented:

**Depth** — The distance of each pixel in the photo from the camera, which gets lighter as you go farther back.

**Disparity** — The separation of the camera's two views at each pixel, which gets darker as you go farther back.

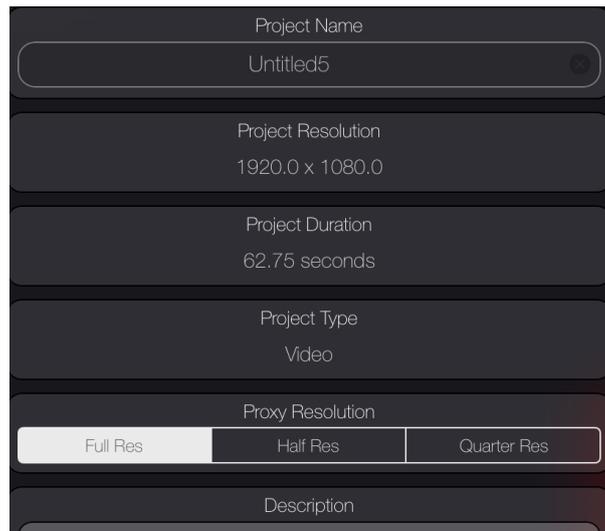
**Matte** — The Portrait Effects Matte added in iOS12 which uses machine learning to make a very clean mask for people in the foreground of the front camera on depth-capable devices.

You can use this depth image to create effects with a number of special depth-aware nodes like Depth Fog or Disparity Anaglyph.

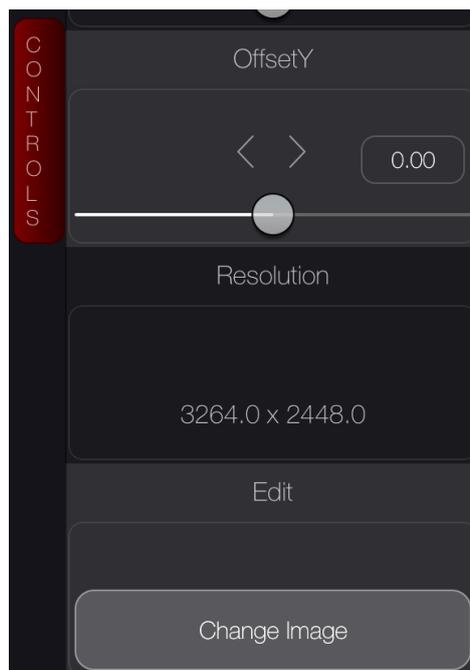
# System

## Bricolage Projects

There are two types of projects you can make in Bricolage: Still frame and Video. The main input to the project is round as is the output. Both these nodes can not be deleted. You can add secondary input nodes into your project of any type, still, generated or video, regardless of the type of project you have created. If you made a still input project, any further video input nodes you add will only display a single frame. The project settings popover lets you view the current state of your project, as well as rename, set proxy resolution and change the description.

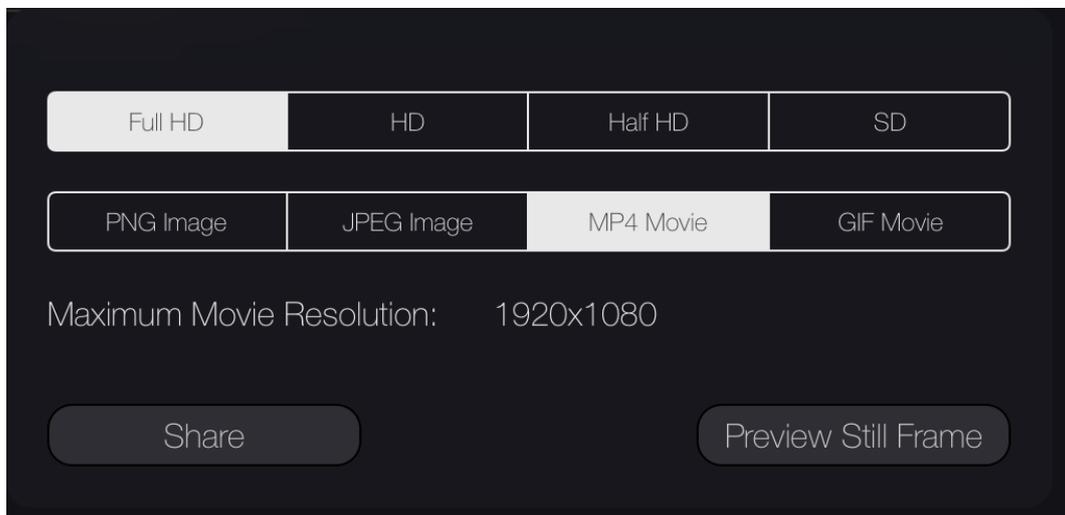


If you want to change the input image to a still image node, select the node, open the controls and select the change input button.



## Render / Share

When you are ready to render your animation, press on the share button on the toolbar to open the render popover. The popover has settings for size and type.



**Size:** you can render your movie to Full HD (1920x1080), HD (1280x720), Half HD (960x540) and SD (640x480)

**Type:** you can render to MP4 video, GIF movie, or PNG or JPEG images.

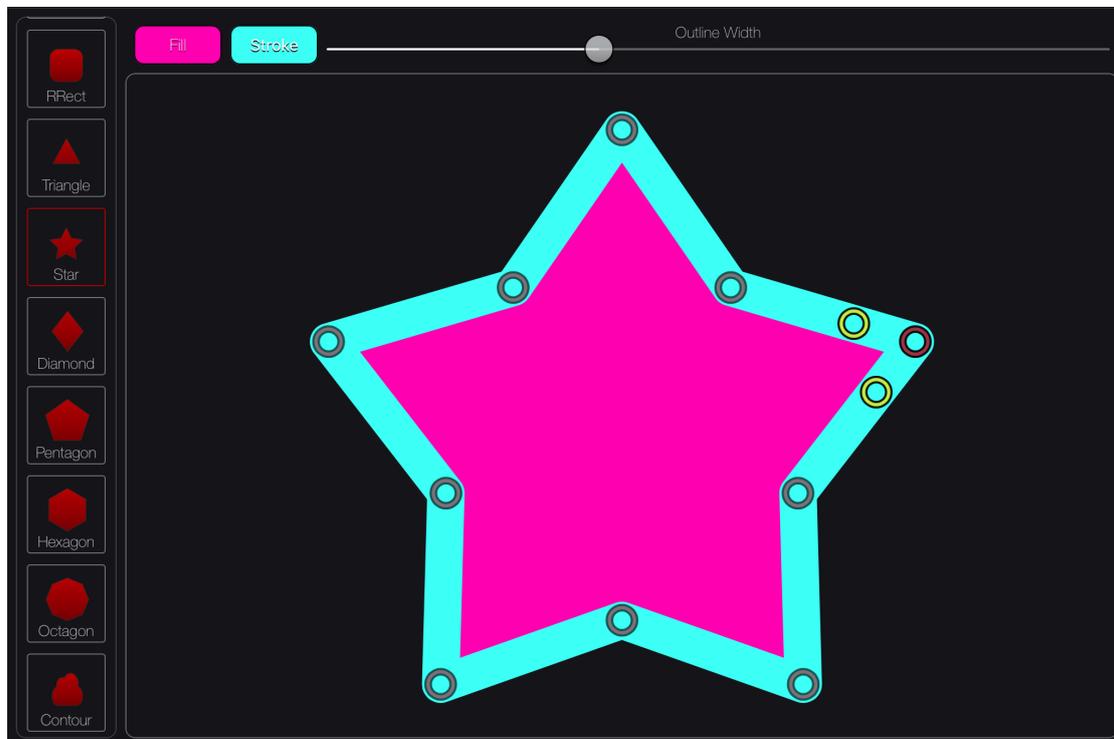
At any time before you share your masterpiece you can view a preview of the current still frame with all the above mentioned settings.

The first time you render after changing your composition, it will take a few moments. After this you can copy the movie in iTunes sharing, or continue on to share the movie to other apps, like iMovie or Dropbox, save it to your camera roll, email it, upload it to YouTube, etc.

# Shape Nodes

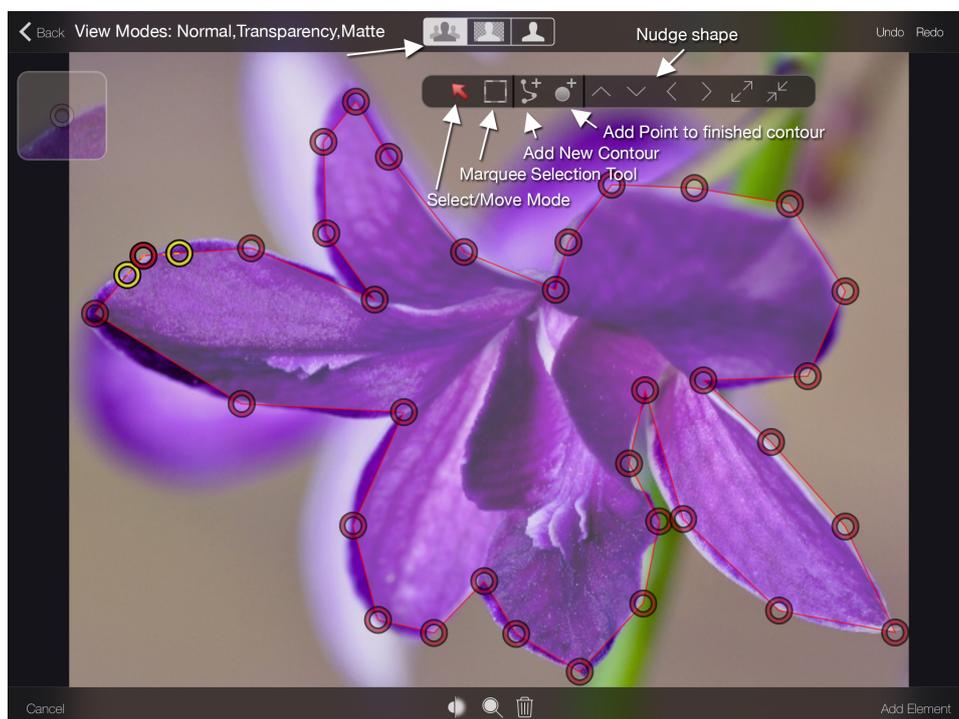
## Shape Element

You can choose from a variety of shapes or draw your own. All shapes have bezier handles for editing, as well as fill, gradient and outlines.



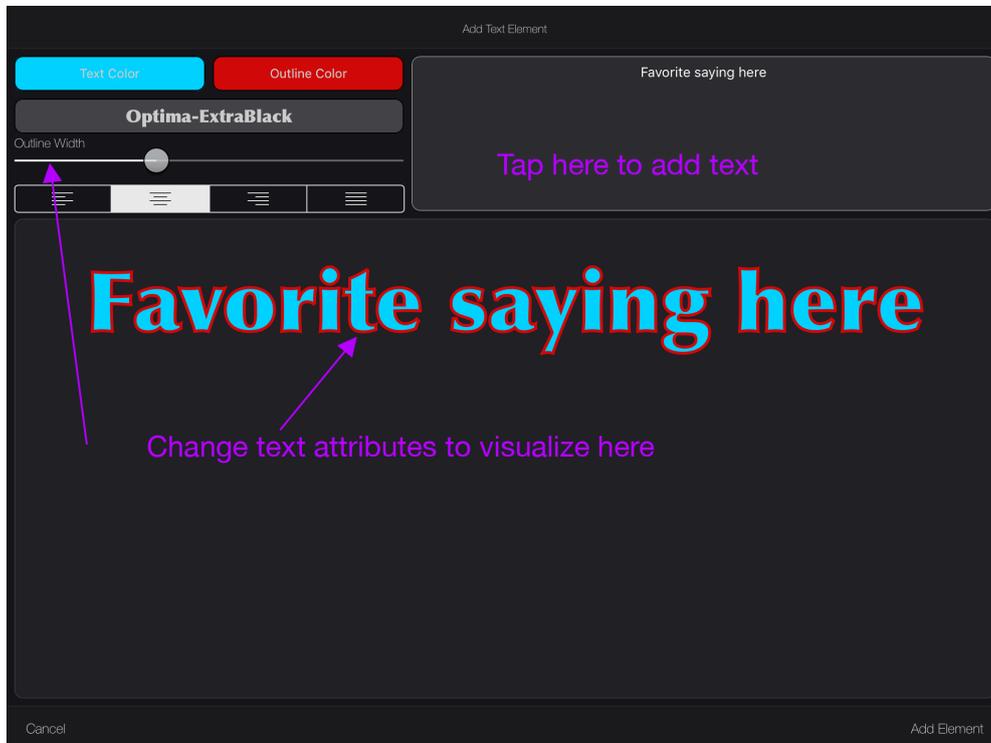
## Cutout Element

You can also cut out your own elements. Import any image from your photos and draw a contour to define the area of the image you want to keep. Bricolage will create an element with alpha for you to animate in your scene.



## Text Element

Text elements have editable font, alignment, outline and color. Text elements can be used to animate titles.



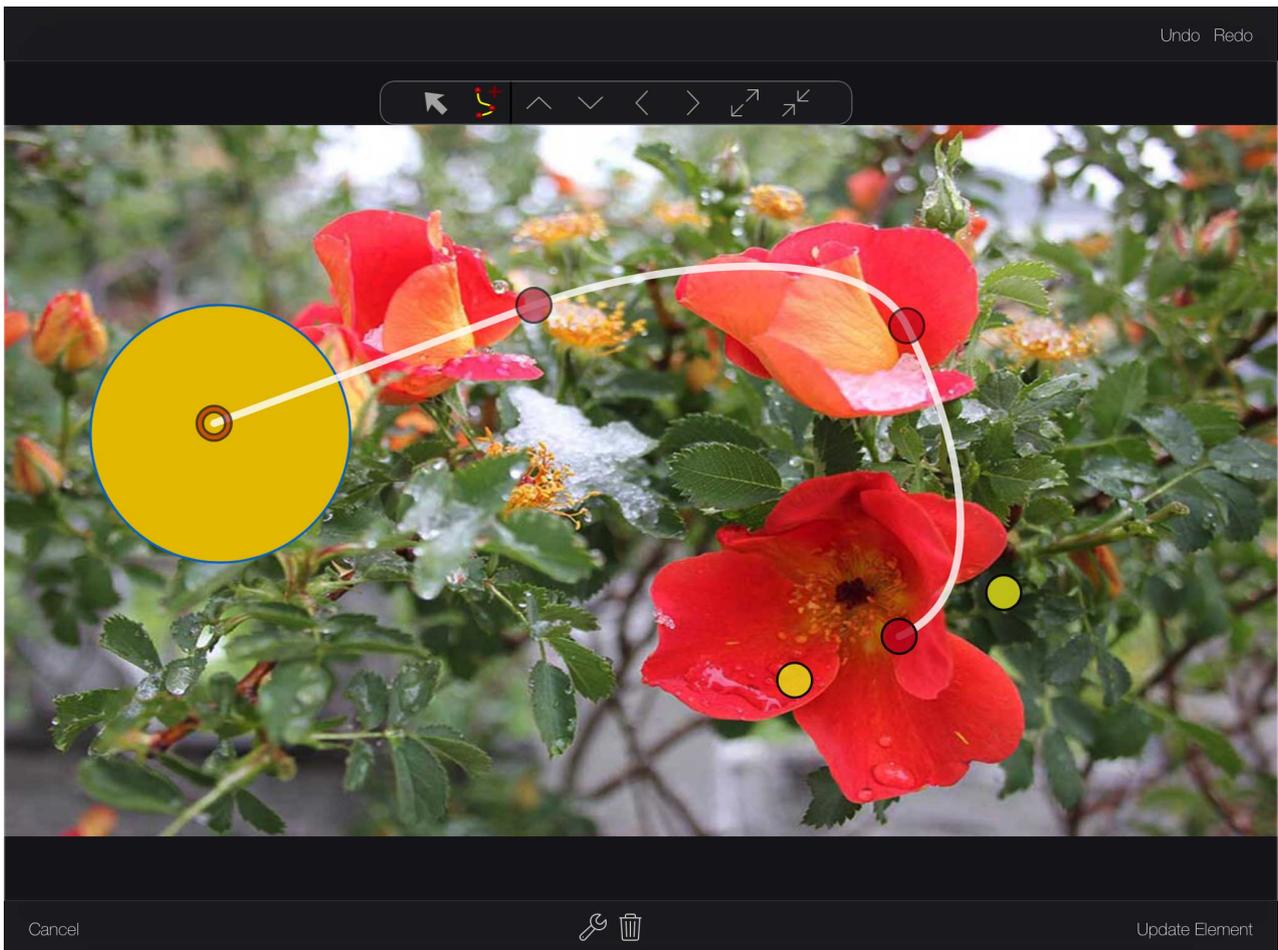
Once the elements have been added to your project, you can make changes to them by selecting the node, and pressing the Edit button, usually found at the bottom of the controls. Position and scale can be edited with the scale, offsetX and offsetY sliders.

## Path Move Node

Path animation is an additional type of animation for position. A path animation has no keyframes, but simply a single procedural path. The way to create a path animation is to add a PathMove Node downstream from the image or shape you want to move, and draw a custom path. The path move node has a foreground image input (the image to be moved), and an optional background input.

You can open the draw path editor from position parameter controls, by selecting the curve button. Once open, the UI has similar shape editing controls to the cutout and shape element editors.

When you first open the editor the tool is in Add path mode. Double click finishes adding and then editing can begin. Pulling on a point changes the shape, double clicking on a point breaks and joins the tangents. The wrench button at the bottom shows and hides the tools and the trash can button allows you to delete the shape and start over. Editing actions are undoable. When you are happy with the path, select update element to save



the path the position animation of your element. The element will move to the start position of the path. To make a change, re-open the editor (from either the contextual menu or the popover), make your changes, and update again.

## Green Screen Input Source Nodes

Green Screen removal is commonly performed on an image that has a solid color background, generally green, and a distinct foreground you would like to separate out. The parts of the image described by the selected key color are removed and result in transparent alpha.

### PARAMETERS

**Color** - The color to remove from the image. You can select the color by tapping on the color swatch and opening the color sliders, or by tapping on the eye dropper to pick a color from the image.

**Color Range** - the range around that color to remove. The higher the range, the more will be removed from the image.

**Edge Smoothing** - softens the transition at the edges.

**Fringe Erase** - removes some of the edge spill that can come from the surrounding background color reflecting on the foreground object.

**Mask Threshold** - cuts out the almost transparent parts of the key (removes grey and turns it black).

**Brightness Match** - cuts out the almost transparent parts of the key (removes grey and turns it black).

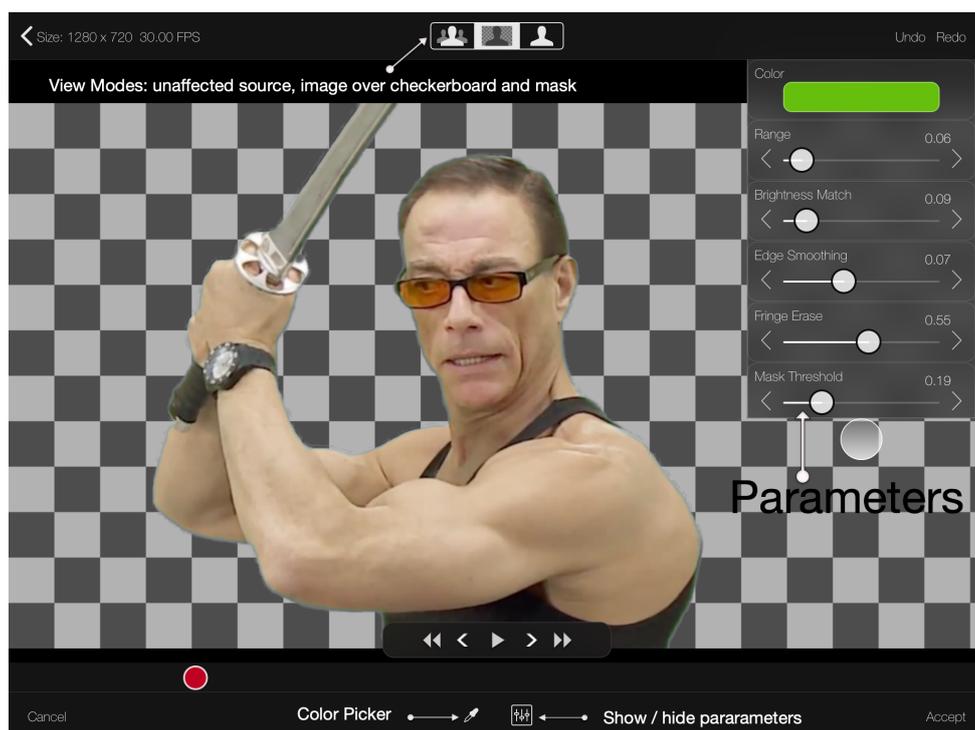
There are two types of green screen inputs:

### GREEN SCREEN VIDEO

The editor for green screen video has a player, and works on videos.

### GREEN SCREEN STILL

The Editor for green screen still has no player and works only on stills.



## Building Flows

There are countless techniques and tricks used by compositors. Here are a few examples to get you started. These patterns can be repeated, varied, and mixed to make new effects.

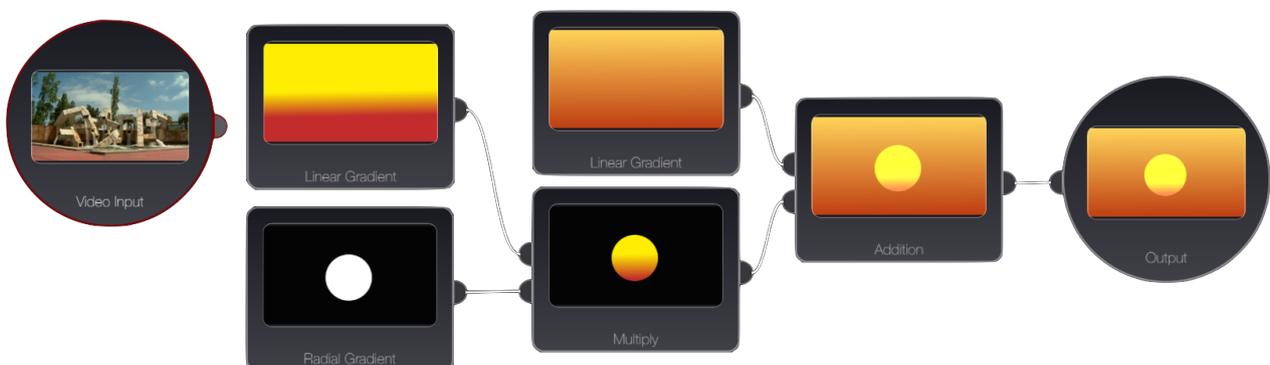
### Color Correction

This is one of the easiest flows you can make, just add a *Color Controls* node between the main input and the final *Output* nodes by touching and holding on the link connecting them, then choosing *Color Controls* from the Nodes drawer on the left. Tap the node you added and adjust the node settings in the Controls drawer.



### Sources

In addition to photographic sources, bricolage can generate images to use as sources. these range from the simple *Constant Color* or *Checkerboard* nodes to the *Fractal Noise* node available as an in-app purchase. This composition uses these image generator to make simple picture. Notice that the *Video Input* node isn't even connected, though it still determines resolution and duration of the composition.



### Split and Mix

You can also use generated sources, like gradient nodes to define masks to mix between images. A common technique is to mix together two copies of the same image that have undergone different processing. This is familiar from effects like the colorization of a single element in an image, or the mixing of blurred and un-blurred versions on an image in depth-of-field simulations like the 'tilt shift' effect. The effect below uses a *Radial Gradient* with the black color set to transparent, which lets the *Source Over* node put the image it multiplies over the background.



## Saving and loading Flows

When you have a flow that you particularly like, you can save it for later use. Open the Edit menu and press save flow. This will save all nodes but the output node into a file. All input nodes, including the main input will be stored. When you load the flow later, the main input will be treated as any other input node. Bricolage comes with a few templates which have been set up for you to help you get started.

## Color Picking

All color editing in Bricolage is done in the Hue-Whiteness-Blackness (HWB) model.

The *H* hue of the HWB model is exactly that of the HSV and HSL models. Changing hue corresponds to moving around the familiar color circle seen in paint stores.

The *W* whiteness control varies from 0 to 1, with 1 being always full white and 0 always being the color *shade* (a mixture of a pure hue with black) chosen with the other two controls.

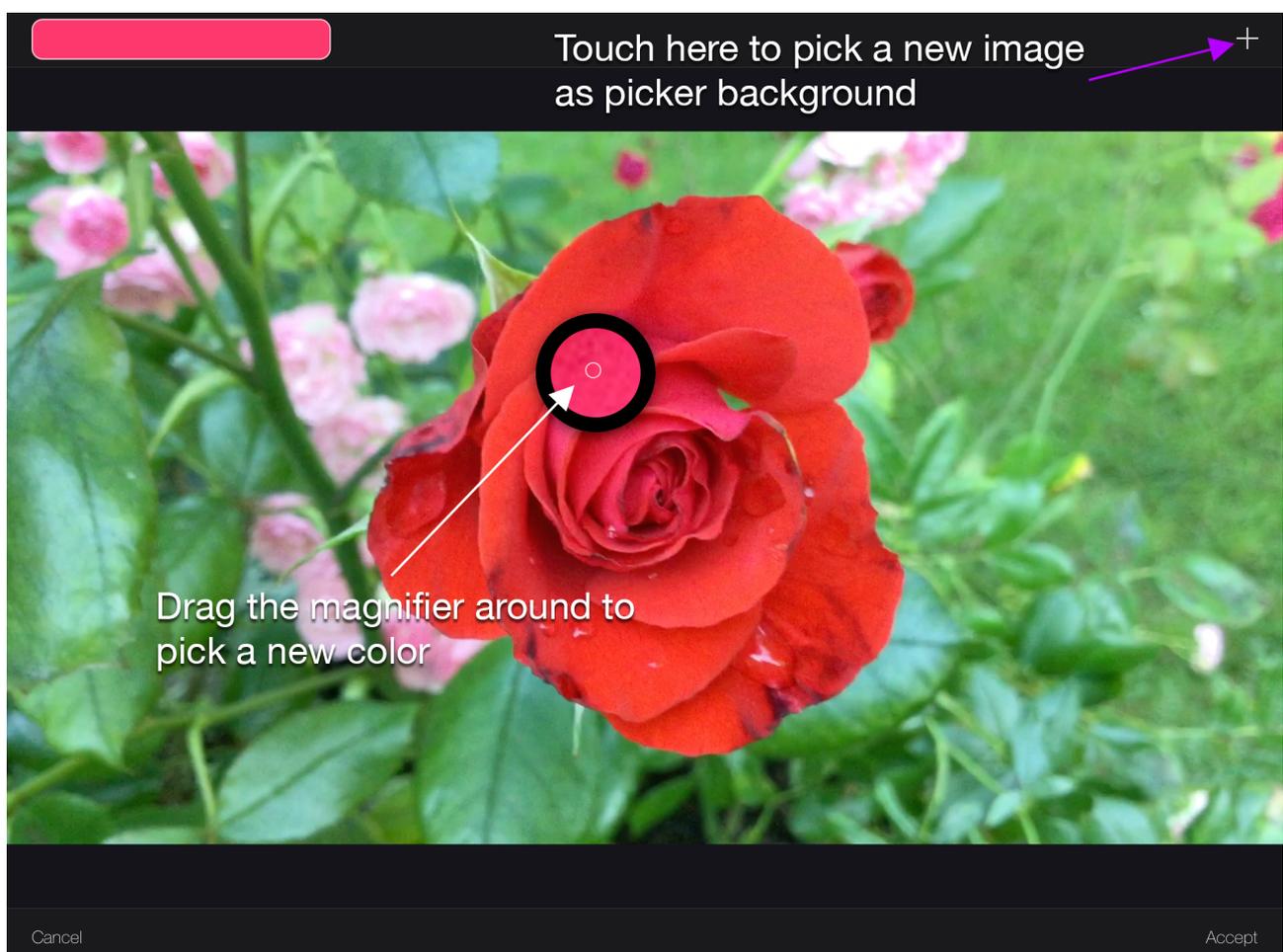
The *B* blackness control varies from 0 to 1, with 1 being always full black and 0 always being the color *tint* (a mixture of a pure hue with white) chosen with the other two controls.

## Eye Dropper

In addition to traditional color sliders, an eye dropper color picker is available for all color parameters.



The input for the eye dropper is the first video or still input upstream of the node you are editing. If there is no upstream image node, the main input of the project will be used. You can pick from your library of images at any time by tapping the plus button and opening the image loader.



## Color Lookup Table Management

A color lookup-table, commonly referred to as a LUT, is a way to change the colors in your image by looking up replacement colors in a big table. If a LUT has a different entry for each combination of red, green, and blue components, it is called a 3D LUT, and it can capture the most elaborate color correction operations. For this reason, 3D LUTs have become a standard tool, with a standard file format, the *.cube* file. Bricolage can import *.cube* files from any app (Mail, Messages, Files, Safari, Dropbox, etc.) that lets you use 'Open In' to open files. These files are imported into a folder called LUTs, which you can access via iTunes File Sharing. If you delete this folder, the default LUTs will be installed next time you launch. You can also copy this folder to a desktop, manage the LUTs in it, and drop it back in to the app, to replace the current set of LUTs. The LUTs are used by the *3D LUT Color Correct* node, and the list appears in the popup in the node controls.

## Live video Capture Layer

It is now possible to overlay a live video over your composition. The functionality is still limited but will be advanced in future versions. The video can be positioned by touch and move, size and opacity can be changed. Unfortunately it is not yet possible to export the live video. It is simply a live feature.

