

nauch

nauch is for playing, editing and manipulating moving images, still images and live video in real time.

v1.0
2010

notes.

nauch is a *patch*¹ run by the program *Pure Data* to play, edit and manipulate moving images, still images and live video in real time.

The patch and this documentation is crude and unfinished and my knowledge of *Pure Data* is limited. So please forgive (and feel free to correct) any problems/mistakes/inefficiencies you encounter both with the patch and with this documentation.

This patch is made available as a freely licensed work, as explained in the *Definition of Free Cultural Works*²

I have used the programming environment *Pure Data*³ with *Gem*⁴ to create this patch. *Pure Data/Gem* is free software permitting the distribution of patches that can be opened, modified and shared for any use. I have only been able to make this patch because of the shared knowledge and resources that others working with *Pure Data*, *Gem* and similar free/open source software have shared.

This patch was conceived, at least to begin with, as a means for me to explore and develop playing/editing video in a live experimental improvised performance situation.⁵

I started making this patch for a performance I would be participating in⁶, and for this performance I wished to permit various possibilities. The determination of structure has been informed by the technical and ergonomic limitations of the machine on which I would run this patch, and the conceptual choices I made for the project. The hope however, is that there is structural flexibility enough to accommodate content other than mine in a way that can be made meaningful. I attempted to create an unstable system to provide choices that often only determine a range of potential outcomes, without entirely predictable results.

I have written the patch with the program *Pure Data*, because ultimately – everything is openly accessible and can be freely modified. I am aware however, that despite this patch (and its potential learning) being made available for 'free at the point of interest', in accord with the free software philosophy⁸, not everybody has the desire or option to acquire the specific technical knowledge required to more easily install, run, and/or modify the patch.

There is much information available online, in manuals, and through help files to assist learning, unpicking, reworking and exploring *Pure Data*, and patches such as this. There are links to some resources at the end of this document.

If you are not familiar with *Pure Data* and *Gem* It is recommended that you read the online manual <http://en.flossmanuals.net/PureData/GEMIntroduction> for an introduction.

Please contact me if you have suggestions/responses.

1 a patch is sort of a small programme run by a bigger programme—see *Reference* section for links to further information

2 <http://freedomdefined.org/Definition>

3 'Pd (aka *Pure Data*) is a real-time graphical programming environment for audio, video, and graphical processing' <http://puredata.info/>

4 'GEM stands for Graphics Environment for Multimedia and is an external (plugin) for the computer-music software PD' <http://puredata.info/community/projects/software/gem>

5 This is not an attempt to provide a new model.

This is an attempt to contribute in a small way towards the idea of, and means for, alternative ways of doing.

6 Thanks to Stoffel Debuysere. <http://www.paulabbott.net/paul/n/>

7 <http://bit.ly/bvMJZY>

8 <http://www.gnu.org/philosophy/free-sw.html>

System Requirements.

I would much prefer if this patch could run smoothly cross platform and on the most basic machine. However, unfortunately I do not have sufficient knowledge of programming or access to a variety of different systems, to administer a stable, tested patch that can deal effectively with the different challenges various operating systems and hardware platforms present.

System Recommendations

The system I created this patch on is described below – the patch is not comprehensively tested on other systems. I have attempted to make the patch as light as possible – the main work is done in playing back large video files. If you have a slower system – try using smaller video files at first. I will try to test the patch on other systems when I get the chance, and modify/improve mobility.

MacBook Pro Penryn
Mac OSX 10.5.8
2.4 Ghz Processor
4 GB Ram
video card - NVIDIA GeForce 8600M GT with 256mb RAM
keyboard

Important: external display of some kind is required (second monitor/display/projector etc) – the patch will send the output video to a second display device (i.e. a second monitor or projector output) – without one attached, you may see nothing, or have problems.

Limited test results

I will update the information below with results of attempts to test on other systems:

MacBook Pro Penryn running *puredyne*

puredyne carrot and corriander xfcs desktop interface will not sem to support second monitor.

MacBook Pro Penryn running *Ubuntu*

untested.

Dell Latitude 2100 running *puredyne*

the computer did not have a powerful enough graphics card, and the graphics did not work.
puredyne carrot and corriander xfcs desktop interface will not sem to support second monitor.

Dell Latitude 2100 running *Ubuntu*

the computer did not have a powerful enough graphics card, and the graphics did not work.
puredyne carrot and corriander xfcs desktop interface will not sem to support second monitor.

Setup.

There are good, detailed instructions on installing and setting up *Pure Data* and *Gem* here: <http://en.flossmanuals.net/PureData> and within the *Pure Data* package.

- 1 Download and install the latest version of *Pure Data* and *Gem* (i would strongly recommend the '-extended' option) from here: <http://sourceforge.net/projects/pure-data/files/pd-extended/>
-There are options for new and old macs, windows and linux based operating systems.
(the installer for newer macs (intel processor) is included in the *nauch* folder)
- 2 Configure *Pure Data* to your system (see link above)
- 3 Check all required dependencies are installed correctly (see *Dependencies* below)
4. Place content (video files, still image files etc) in the correct location, and check naming conventions are correct.
See section in *Sub Patches* for file format details)
- 5 Run the *n* patch for the first time (see *Using the patch* below)

I would suggest closing all other programs, and unplugging all unnecessary devices before attempting to run the patch for the first time.

Known Issues

If you try to load the patch with firewire devices connected, *Pure Data* will crash. It will work however, if you load the patch in *Pure Data* first, and then connect devices.

For this reason, I would suggest keeping the main patch folder on your local hard disc.

Dependencies

I have attempted to use as few external libraries as possible, that were not included in the original puredata 0.41.4.extended download.

However, the following need to be installed and loaded into *Pure Data* correctly to run the patch (see *Startup Flags* and *Path* sections here: <http://en.flossmanuals.net/PureData/AdvancedConfig>)

GEM: ver: 0.92.2	mapping	pddp	unauthorized	flib
cyclone	markex	pdogg	pan	ekext
zexy	maxlib	pixeltango	freeverb	flatspace
creb	memento	rradical	hcs	PDP
cxc	mjlib	sigpack	jmmmp	PiDiP
iemlib	motex	smlib	ext13	pdp_colorgrid
list-abs	oscx	toxy	ggee	rtc

File Organisation

Files must be arranged and named carefully to ensure the program can correctly locate all necessary elements for the patch to run properly. The files and folders inside the main, top level 'nauch' folder should remain arranged, and named as you find them.

Folder structure and file names

main, top level folder	/nauch
main patch file	n.pd
folder containing essential abstractions [example patch file name]	/abstractions n-auchFilmSel.pd
folder containing still image files [example file name- <u>no</u> preceding '0']	/still img_23.tif
folder containing text (image) files [example file name- <u>no</u> preceding '0']	/text txt_23.tif
folder containing pre-recorded video files [example file name- <u>pre</u> ceding '0']	/video film_023.tif

Using the patch

Basically to start 'Rendering' video – that is, to have video/image data sent to the output monitor/device, first press the ESC key. This will turn rendering on.



Once rendering as been turned on, you can begin to use the various sub-patches to show video and images by turning visibility on. See *Sub-Patches* section for information.

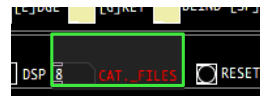
Focus

For the keyboard keys to control the various options of the patch the main patch window needs to have what is called 'focus'. This means that it is the active window at the front -on your computer screen. You can 'get focus' for this window by clicking anywhere within it.

Note: Each time you turn rendering on – remember to get focus back by clicking inside the main patch window.

CAT. FILES

Video and image files are organised into 4 categories – i.e. there are 4 categories of video files, 4 categories of image files and so on. (See *Basic Structure* pages for detailed description). Within these categories there are a number of files. This number can be modified in the CAT. FILES entry in master settings box:



So, for example – if you want to work with 8 files in each category, type '8' into the CAT. FILES box to have the patch assign 8 file numbers to each category throughout Video, Still and Text sub-patches and automatically recalculate the number of files it is required to access in your main file folder.

Note: I would recommend

- 1 decide the number of files you wish to have in each category
- 2 open the patch to enter a value in CAT. FILES box
- 3 close the patch and arrange/number video/image files
- 4 reopen patch and test

Inverted display

As mentioned previously, this patch was made to be used in a live performance situation – and in this situation i didn't want to have a lot of light coming from the screen ...

To help with this, I decided to use the patch in negative. On a Mac, you can use Universal Access options to switch on the 'white on black' display setting. This inverts the screen colours – and those white backgrounds become black.

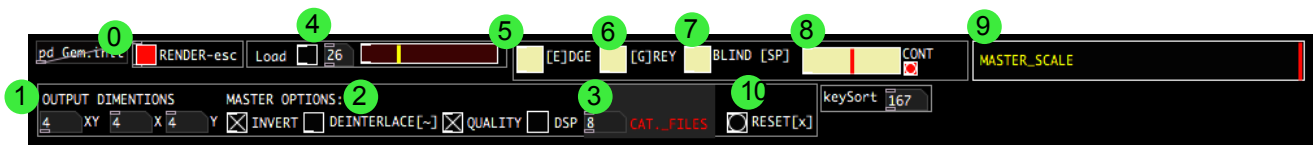
To switch this feature on (on a mac) press ctl+alt+cmd+8 or go to system preferences/ Universal Access to activate.

As I have been using this feature – I set the patch to automatically invert the output of the patch back to 'positive' colours. Therefore the 'controls' of the patch are all white on black, and emitting less light – while the footage and images are displayed correctly.

If you do not wish to use the display in this way, or do not have access to this function on your computer, click (to switch off) the invert option in the patch (explained in *Master Options* below).

Master Options.

In the top part of the patch, there are a number of options effecting the master output. Some of the options are set when you load the patch.



Item	Function	Key Stroke	Mouse
0	RENDER turns on rendering video to output display device	ESC	Mouse
1	OUTPUT DIMENTIONS adjust ratio/size of master output image	-[type numbers into boxes]	-
2	MASTER OPTIONS INVERT [default on] - all output colour to negative ⁹ DEINTERLACE [auto off] QUALITY [auto on] minor speed improvement with this setting off DSP [auto on] Audio Digital Signal Processing – memory saved with this off, but required for some functions		yes yes yes yes
3	CAT. FILES – (explained above)		yes
4	LOAD METER [auto on] displays % use of CPU (memory usage)	-	yes
5	EDGE turn of 'edge detect' on output Note: this is a very memory intensive process	E	yes
6	GREY convert video and image file output to greyscale (FIELD, FLK_COL, FLK_BW not affected)	G	yes
7	BLIND places a black full frame 'over' the current output – with the effect of 'hiding' the output, leaving only a black screen. processes continue <i>underneath</i>	space bar	-
8	CONTRAST change the contrast of video and image file output	-	drag to change
9	MASTER SCALE change the size of the output image	-	drag to change
10	RESET – turn off all visible sub-patches, return sub-patch values to default...	X	click

Alpha transparency

To turn alpha transparency on/off for any sub-patch (excluding Video File playback) – press ALT + the key that turns visibility on for that sub-patch i.e.:

Sub Patch	Key: Visibility on/off	Key: Alpha Transparency on/off
Video	1	-
Still	S	alt+S
Text	T	alt+T
Field	F	alt+F
FLK_COL	C	alt+C
FLK_BW	W	alt+W
LIVE_VIDEO	+	alt+[+]

⁹ I have been using this patch with the computer display settings set to negative – to reduce the amount of light the screen emits in performance. To assure the output of the patch still displays as positive, I have had to invert the negative output again back to positive...

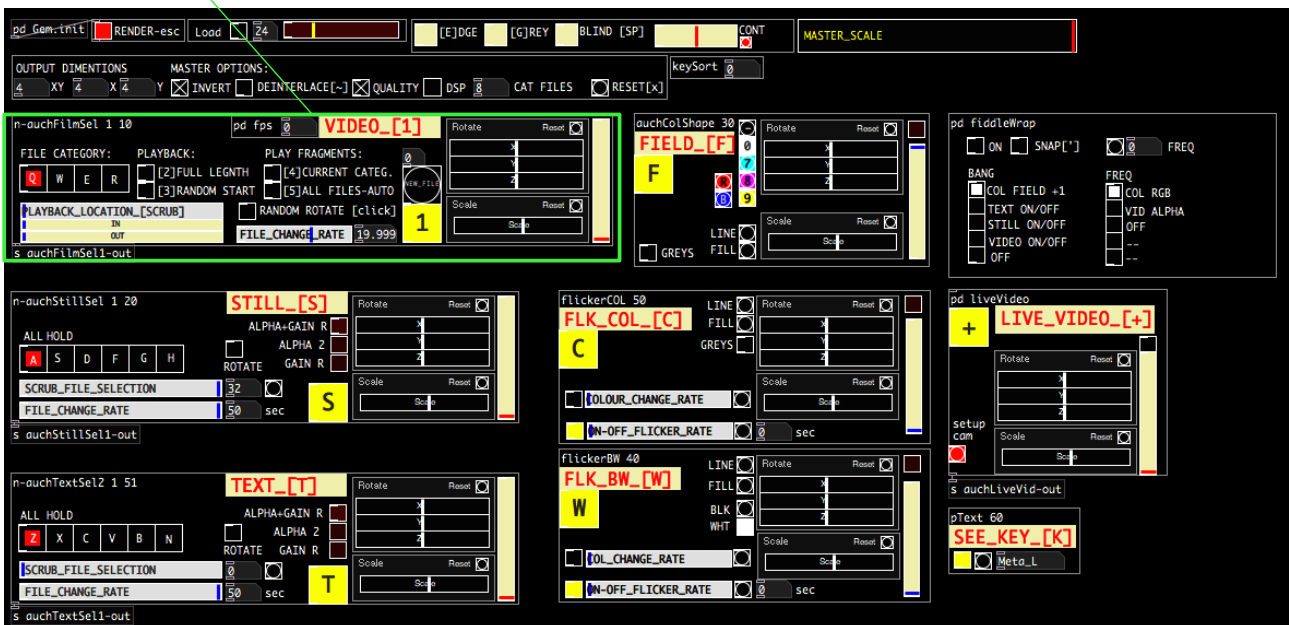
Basic Structure.

There are various options for playing pre-recorded video, showing live video or still image files, filling the screen with colour and some simple manipulations:

1. Video (video file playback)
2. Still Images (Still Image file)
3. Text (Still image files consisting only of text [could obviously be another set of *any* still images])
4. Colour Field (a full *frame* [i.e. fills the screen] of a single colour)
5. Flicker-Colour (intermittent full frame of colour)
6. Flicker-Black/White (intermittent full frame of black or white)
7. Live Camera input (i.e. webcam/video via Firewire)
8. Key (the keyboard key pressed will be visible [as text] when on)
9. audio input can be used to control (in a limited way) some of the variables of the visual elements.

The elements mentioned above are divided into different *sub-patches* within the patch - i.e. the sub-patch with the label 'VIDEO_[1]' (see below) is where the options for playing video files are shown¹⁰.

This is the *top layer* of the patch – and where most real-time modifiable options are displayed:



Layers.

One basic, important principle is the layering order. What these sub-patches can display is organised in layers. You must imagine that you look down from the top of the stacking order ... the layer above masks the layer beneath¹¹

Layer order

- [top]
- Key
- Text
- Flicker_Colour
- Flicker_Black/White
- Field_Colour
- Still Image
- Live Video
- Video File playback
- [bottom]

¹⁰ You can open the sub-patch to modify its contents

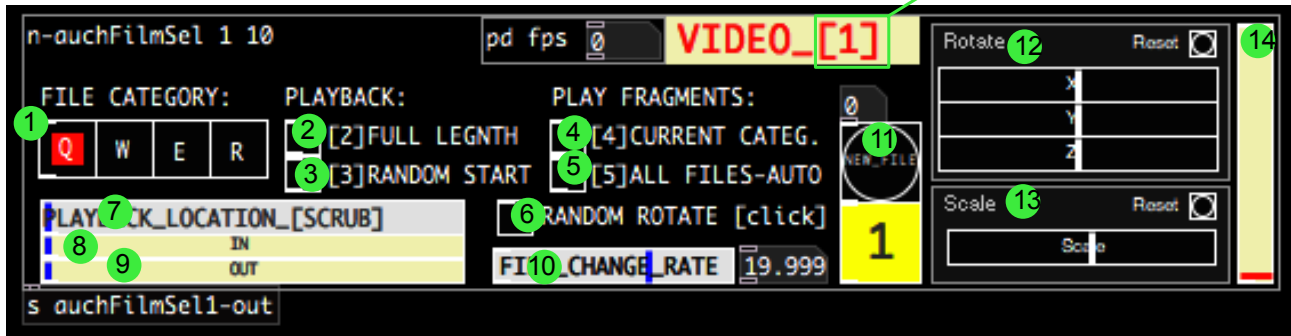
¹¹ (some basic layer transparency/compositing can be done - this will be explained later).

Sub-Patches

Sub patches are labelled according to function – with the key that turns visibility on/off listed after the label

1. Video

(video file playback)



Control

Item	Function	Key Stroke	Mouse
0	VISIBILITY Switch Video File playback layer on/off	1	
1	SELECT FILE CATEGORY Select Category	Shift+Q/ Shift+W/ Shift+E/ Shift+R	
2	FULL LEGNTH Play Video file from start to end	2	
3	RANDOM START Trigger random start point in video file. Auto re-trigger at file end	3	
4	PLAY FRAGMENTS: CURRENT CATEG. Play a fragment of a file from the current category, from a random defined start and end point	4	
5	ALL FILES-AUTO Play a fragment of a file from any category Auto re-trigger – determined by FILE CHANGE RATE or file end	5	
6	RANDOM ROTATE file will be rotated 0° or 180° at random on each file load	(no)>>	yes
7	PLAYBACK LOCATION Displays current frame of file playback (not modifiable)	-	-
8	IN Displays current In point (start) of video file	-	drag to change
9	OUT Displays current Out point (end) of video file	-	drag to change
10	FILE CHANGE RATE Changes the frequency a new file is selected for playback Number value to the right is time value in seconds	-	-
11	New file alert/File Number display		
12	SCALE scale size of the video layer (reset – back to 100%)	-	drag to change
13	ROTATE Rotate the video layer on X, Y or Z planes (reset – back to 100%)	-	drag to change
14	ALPHA Adjust transparency/brightness of video file layer Top = alpha 100%, Bottom = alpha 0%	-	drag to change

File Structure

A number of video files stored on a folder on the hard disc are loaded into the object when selected, and displayed when visibility is on.

You can choose which category files will be selected from, but not which specific file will be selected to play (this is done at random). The effect of this will depend on how many files you choose to place in each folder.

Files are arranged into 4 categories. The number of files in each category can be modified, (by typing a number into CAT. FILES). If you change this number the files will need to be renumbered/renamed and arranged accordingly (see NOTE

below), See notes in *Setup* for full details about file organisation/naming etc.

NOTE

when naming files - THERE MUST ALWAYS BE A '0' PRECEDING THE *NUMBER* of the file, as below:

Category	File Number	File Name
(where files in Category = 4)		
Category 1 - Q	1-4	film_01.mov - film_04.mov
Category 2 - W	5-8	film_05.mov - film_08.mov
Category 3 - E	9-12	film_09.mov - film_012.mov
Category 4 - R	13-16	film_013.mov - film_016.mov

(where files in Category = 26)		
Category 1 - Q	1-26	film_01.mov - film_026.mov
Category 2 - W	27-52	film_027.mov - film_052.mov
Category 3 - E	53-78	film_053.mov - film_078.mov
Category 4 - R	79-104	film_079.mov - film_0104.mov

Each category consists of a number video files (default = 8). The number of videos in each category can be changed by typing a number in the 'Cat Files' Box of the *Master Options* section.

File Format

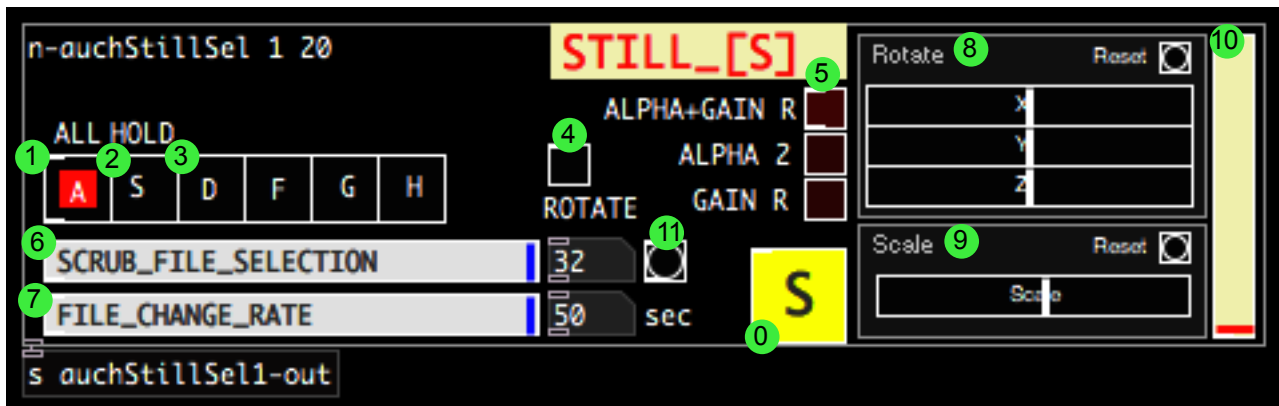
The options below worked reasonably for me - balancing speed/quality of image etc. - but a smaller size video file will speed things up..

size 720x576 px
codec h264 quicktime .mov
length (any - smaller means less pressure on memory - i was using files up to 5 mins)

on a Mac, other quicktime compatible codecs will work, but you will have to test to assess speed.
nb. I am in the process of exploring the potential use of *floss* file formats to avoid proprietary codecs.

2. Still Images

(still image file playback)



Control

Item	Function	Key Stroke	Mouse
0	VISIBILITY Switch Still Image File playback layer on/off	S	-
1	FILE CATEGORY -ALL Select All files from all categories	Shift+A	-
2	HOLD IMAGE	Shift+S	-
3	SELECT FILE CATEGORY Select Category	Shift+D/ Shift+F/ Shift+G/ Shift+H	-
4	RANDOM ROTATE file will be rotated 0° or 180° at random on each file load	-	click
5	ALPHA+GAIN R turns on sub-patch layer transparency ALPHA 2 alternate transparency composite mode GAIN R turn on automatic randomisation of the gain (brightness) of the sub-patch output	alt+S - - -	- click click
6	SCRUB FILE SELECTION manually select the current file. file number displayed to the right of the slider	-	drag to select
7	FILE CHANGE RATE Changes the frequency a new file is selected for playback Number value to the right is time value in seconds	-	drag to change
8	ROTATE Rotate the video layer on X, Y or Z planes (reset - back to 100%)	-	drag to change
9	SCALE scale size of the video layer (reset - back to 100%)	-	drag to change
10	ALPHA manually adjust transparency/brightness of sub-patch layer Top = alpha 100%, Bottom = alpha 0%	-	drag to change
11	New file load alert/File Number display	-	-

File Structure

A number of image files stored on a folder on the hard disc are loaded into the object when selected, and displayed when visibility is on.

You can choose which category files will be selected from, but not which specific file will be selected to play (this is done at random). The effect of this will depend on how many files you choose to place in each folder.

Files are arranged into 4 categories. The number of files in each category can be modified, (by typing a number into CAT. FILES). If you change this number the files will need to be renumbered/renamed and arranged accordingly (see NOTE below), See notes in *Setup* for full details about file organisation/naming etc.

Category	File Number	File Name
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(where files in Category = 4)

Category 1 – D	1-4	img_1.tif – img_4.tif
Category 2 – F	5-8	img_5.tif – img_8.tif
Category 3 – G	9-12	img_9.tif – img_12.tif
Category 4 – H	13-16	img_13.tif – img_16.tif

(where files in Category = 26)

Category 1 – D	1-26	img_1.tif – img_26.tif
Category 2 – F	27-52	img_27.tif – img_52.tif
Category 3 – G	53-78	img_53.tif – img_78.tif
Category 4 – H	79-104	img_79.tif – img_104.tif

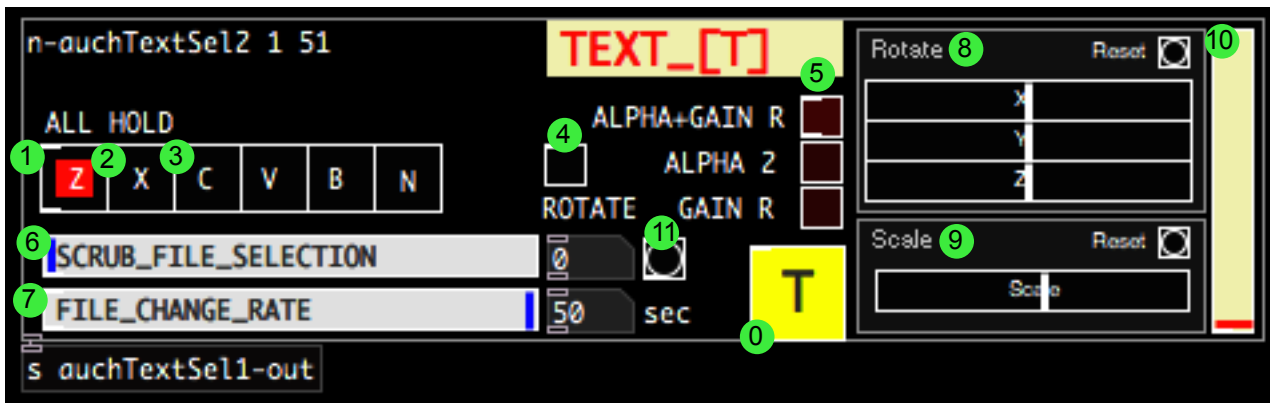
Each category consists of a number image files (default = 8). The number of images in each category can be changed by typing a number in the 'Cat Files' Box of the *Master Options* section.

File Format

size 1280x960 px
res 72dpi
codec tif [must be .tif file format to work]

3. Text

(still images containing only text) – most options are the same as [2. Still](#)



Control

Item	Function	Key Stroke	Mouse
0	VISIBILITY Switch Still Image File playback layer on/off	T	-
1	FILE CATEGORY -ALL Select All files from all categories	Shift+Z	-
2	HOLD IMAGE	Shift+X	-
3	SELECT FILE CATEGORY Select Category	Shift+C/ Shift+V/ Shift+B/ Shift+N	-
4	RANDOM ROTATE file will be rotated 0° or 180° at random on each file load	-	click
5	ALPHA+GAIN R turns on sub-patch layer transparency	alt+T	-
	ALPHA 2 alternate transparency composite mode	-	click
	GAIN R turn on automatic randomisation of the gain (brightness) of the sub-patch output	-	click
6	SCRUB FILE SELECTION manually select the current file. file number displayed to the right of the slider	-	drag to select
7	FILE CHANGE RATE Changes the frequency a new file is selected for playback Number value to the right is time value in seconds	-	drag to change
8	ROTATE Rotate the video layer on X, Y or Z planes (reset – back to 100%)	-	drag to change
9	SCALE scale size of the video layer (reset – back to 100%)	-	drag to change
10	ALPHA manually adjust transparency/brightness of sub-patch layer Top = alpha 100%, Bottom = alpha 0%	-	drag to change
11	New file load alert/File Number display	-	-

File Structure

A number of image files stored on a folder on the hard disc are loaded into the object when selected, and displayed when visibility is on.

To display text over video or still images, the alpha (transparency) needs to be set to ON (alt+T)

You can choose which category files will be selected from, but not which specific file will be selected to play (this is done at random). The effect of this will depend on how many files you choose to place in each folder.

Files are arranged into 4 categories. The number of files in each category can be modified, (by typing a number into CAT. FILES). If you change this number the files will need to be renumbered/renamed and arranged accordingly (see NOTE below), See notes in *Setup* for full details about file organisation/naming etc.

Category	File Number	File Name
(where files in Category = 4)		
Category 1 – D	1-4	txt_1.tif – txt_4.tif
Category 2 – F	5-8	txt_5.tif – txt_8.tif
Category 3 – G	9-12	img_9.tif – img_12.tif
Category 4 – H	13-16	img_13.tif – img_16.tif

(where files in Category = 26)		
Category 1 – D	1-26	txt_1.tif – txt_26.tif
Category 2 – F	27-52	txt_27.tif – txt_52.tif
Category 3 – G	53-78	txt_53.tif – txt_78.tif
Category 4 – H	79-104	txt_79.tif – txt_104.tif

Each category consists of a number video files (default = 8). The number of videos in each category can be changed by typing a number in the 'Cat Files' Box of the *Master Options* section.

File Format

size 1280x960 px

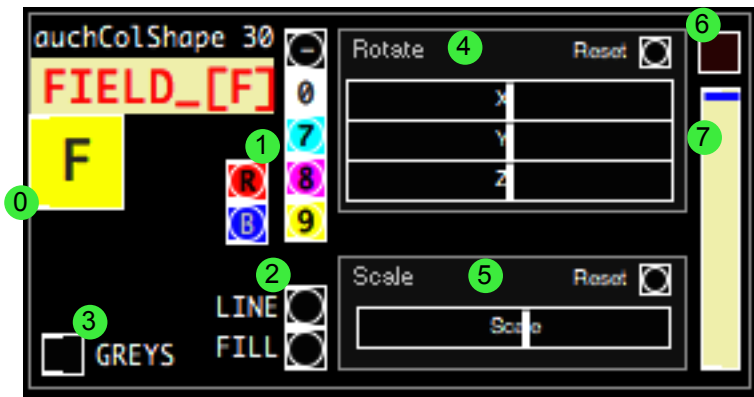
note: as mentioned above – for overlaying text, save files with layers, and with an alpha transparency layer

res 72dpi

codec tif [must be .tif file format to work]

4. Colour Field

(generate full frame block of colour)



Control

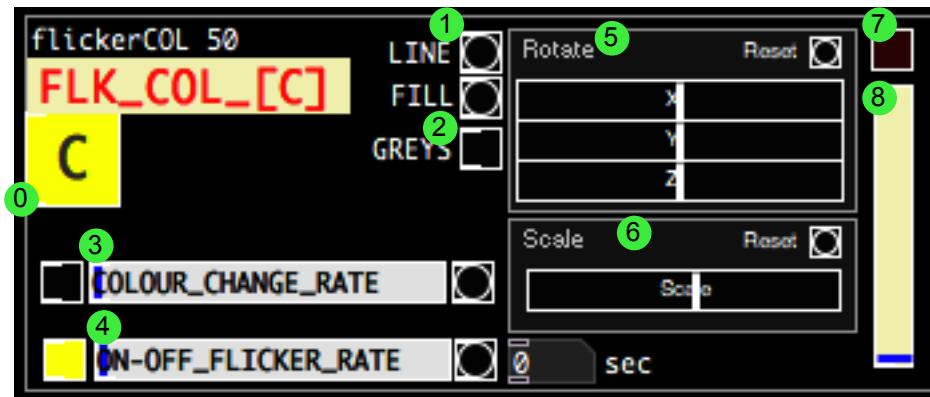
Item	Function	Key Stroke	Mouse
0	VISIBILITY Switch colour field visibility on/off	F	-
1	COLOUR SELECT Manually choose colour:		
	Black	[-]	click
	White	0	click
	Cyan	7	click
	Magenta	8	click
	Yellow	9	click
	Red	R	-
	Blue	B	-
2	SELECT FILL /LINE Fill – full frame colour Line – just the edge of the frame colour		click to choose
3	CONVERT TO GREYSCALE VALUES	-	click
4	ROTATE Rotate the video layer on X, Y or Z planes (reset – back to 100%)	-	drag to change
5	SCALE scale size of the video layer (reset – back to 100%)	-	drag to change
6	ALPHA - transparency auto composite multiply transparency on/off	alt+F	-
7	ALPHA manually djust transparency/brightness of sub-patch layer Top = alpha 100%, Bottom = alpha 0%	-	drag to change

Notes

The colour field sub-patch uses a slightly different method to the video+image file sub-patches. The colour fields are generated by the patch – no external files are loaded.

5. Flicker – Colour [FLK_COL]

(generate intermittent full frame block of colour)



Control

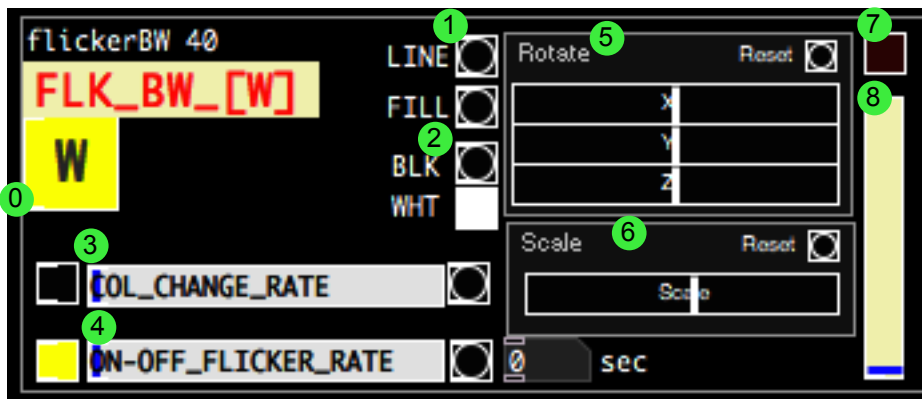
Item	Function	Key Stroke	Mouse
0	VISIBILITY Switch colour flicker visibility on/off	C	-
1	SELECT FILL /LINE Fill – full frame colour Line – just the edge of the frame colour	-	click to choose
2	CONVERT TO GREYSCALE VALUES	-	click to choose
3	COLOUR CHANGE RATE the rate at which a new colour (randomly assigned) is selected from 0.05 – 20 seconds	-	click on/off & drag to change
4	ON-OFF FLICKER RATE the rate at which the 'flicker' (visibility on/off) occurs from 0.05 – 20 seconds	-	click on/off & drag to change
5	ROTATE Rotate the video layer on X, Y or Z planes (reset – back to 100%)	-	drag to change
6	SCALE scale size of the video layer (reset – back to 100%)	-	drag to change
7	ALPHA - transparency auto composite multiply transparency on/off	alt+F	-
8	ALPHA manually adjust transparency/brightness of sub-patch layer Top = alpha 100%, Bottom = alpha 0%	-	drag to change

Notes

The colour field sub-patch uses a slightly different method to the video+image file sub-patches. The colour fields are generated by the patch – no external files are loaded.

6. Flicker – Black/White [FLK BW]

(generate intermittent full frame block of colour)



Control

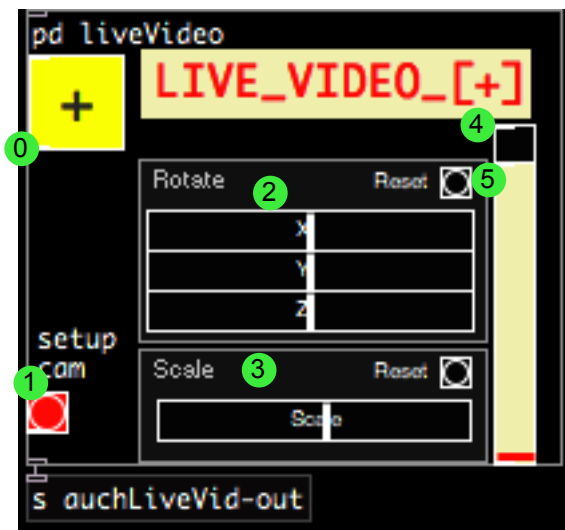
Item	Function	Key Stroke	Mouse
0	VISIBILITY Switch colour flicker visibility on/off	W	-
1	SELECT FILL /LINE Fill – full frame colour Line – just the edge of the frame colour	-	click to choose
2	MANUAL SELECT COLOUR Black/White	-	click to choose
3	COLOUR CHANGE RATE the rate at which a new colour (randomly assigned) is selected from 0.05 – 20 seconds	-	click on/off & drag to change
4	ON-OFF FLICKER RATE the rate at which the 'flicker' (visibility on/off) occurs from 0.05 – 20 seconds	-	click on/off & drag to change
5	ROTATE Rotate the video layer on X, Y or Z planes (reset – back to 100%)	-	drag to change
6	SCALE scale size of the video layer (reset – back to 100%)	-	drag to change
7	ALPHA - transparency auto composite multiply transparency on/off	alt+F	-
8	ALPHA manually adjust transparency/brightness of sub-patch layer Top = alpha 100%, Bottom = alpha 0%	-	drag to change

Notes

The colour field sub-patch uses a slightly different method to the video+image file sub-patches. The colour fields are generated by the patch – no external files are loaded.

7. Live Video

(live camera input)



Control

Item	Function	Key Stroke	Mouse
0	VISIBILITY Switch colour flicker visibility on/off	+ (the <i>plus</i> or <i>equals</i> key)	-
1	SETUP CAMERA (See note below about <i>Camera Setup</i>)	-	click
2	ROTATE Rotate the video layer on X, Y or Z planes (reset – back to 100%)	-	drag to change
3	SCALE scale size of the video layer (reset – back to 100%)	-	drag to change
4	ALPHA - transparency auto composite multiply transparency on/off	-	click on/off
5	ALPHA manually adjust transparency/brightness of sub-patch layer Top = alpha 100%, Bottom = alpha 0%	-	drag to change

Camera Setup

If the patch is loaded without any other video devices attached, and you have a webcam – the patch will automatically set the webcam as the input for live video, using default compression settings.

If you want to use an external camera attached via firewire, follow these instructions:

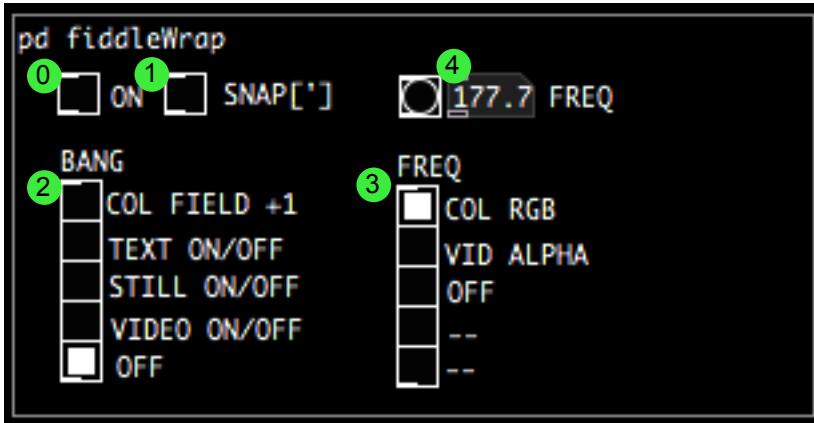
- 1 unplug any external video/firewire devices
- 2 open the patch
- 3 with the external camera on attach the firewire cable from device to computer
- 4 click the *Setup Camera* button in the LIVE_VIDEO sub-patch (see above)
- 5 in the dialog box that opens (may be hidden behind the patch window if you cant see it):
 - select source tab, and choose your camera from the list
 - select compression tab and choose (recommended) H.264, 'medium' qualityselect OK
- 6 in the main patch, turn rendering OFF, and then ON again
- 7 click again somewhere on the main patch window

This should have set the video input to your external camera.

8. Audio Control

(various basic options determined by analysing the audio input)

The sub-patch does some very basic frequency and amplitude analysis and uses the result to determine events.



Control

Item	Function	Key Stroke	Mouse
0	ON/OFF (HOLD) audio analysis active/inactive	[;] (the semi colon key)	yes
1	ON/OFF (SNAP) snapshot of values taken from analysis	['] (apostrophe key)	-
2	BANG trigger events based on amplitude of audio analysis exceeding threshold: COL FIELD – FIELD_COL sub-patch visibility on/off TEXT ON/OFF – TEXT sub-patch visibility on/off STILL ON/OFF – STILL sub-patch visibility on/off VIDEO ON/OFF – VIDEO FILE sub-patch visibility on/off OFF – analysis results have no effect	-	click to choose
3	FREQ modify events based on frequency change: COL RGB audio frequency mapped to RGB values in FIELD_COL sub-patch VID ALPHA audio frequency mapped to alpha values in VIDEO sub-patch OFF – analysis results have no effect	-	click to choose

Reference.

More about Pure Data/Gem:

<http://puredata.info/>

<http://en.flossmanuals.net/PureData>

<http://en.flossmanuals.net/PureData/GEMIntroduction>

More about FLOSS:

<http://www.gnu.org/philosophy/free-sw.html>

<http://www.gnu.org/accessibility/accessibility.html>

nauch
v 1.0
beta – incomplete

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