LAC2015@JGU-Mainz

Ten Years of Qstuff*

Is it good enough already ?

Rui Nuno Capela
rncbc.org

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Ten Years of Qstuff* (1)

Good Software Takes Ten Years.
Get Used To it.

— Joel Spolsky, 2001
http://www.joelonsoftware.com

Ten Years of Qstuff* (2)

writing good applications is **hard**.

writing good graphical applications is **harder**.

writing good graphical audio applications is **harder still**.

writing good graphical audio & MIDI applications is an **exercise in masochism**.

– Paul Davis, 2003

"Some Things You May Not Have Thought About When Writing an Audio Application"
LADC2003@ZKM-Karlsruhe

2003-2004 The Dawn of Qstuff*

- **QjackCtl**

  qjackctl.sourceforge.net

  jackaudio.org

- **Qsynth**

  qsynth.sourceforge.net

  fluidsynth.org

- **Qsampler**

  qsampler.sourceforge.net

  linuxsampler.org

2005-2007 Enter Qtractor

Officially presented to the masses on LAC2007@TU-Berlin

Techno-boy bedroom studio, anyone ?
(still after a decade ? :-))

Notable milestones:

2008   DSSI, native VST, Tempo-map

2009   LV2

2011   TYOQA

2008-2011 Sideworks

- ## QXGEdit

  qxgedit.sourceforget.net

- ## QmidiCtl

  qmidictl.sourceforge.net

- ## QmidiNet

  qmidinet.sourceforge.net

2012-2015 Proto-toys

a.k.a. The *Vee-One*s

- ## synthv1
  synthv1.sourceforge.net

- ## samplv1
  samplv1.sourceforge.net

- ## drumkv1
  drumkv1.sourceforge.net

Who is behind Qstuff* ?

Hobby work of one lone-wolf developer

me, rncbc a.k.a. Rui Nuno Capela

a *gift economy* player ;-)

But why ?

Just for fun

The motive . . .

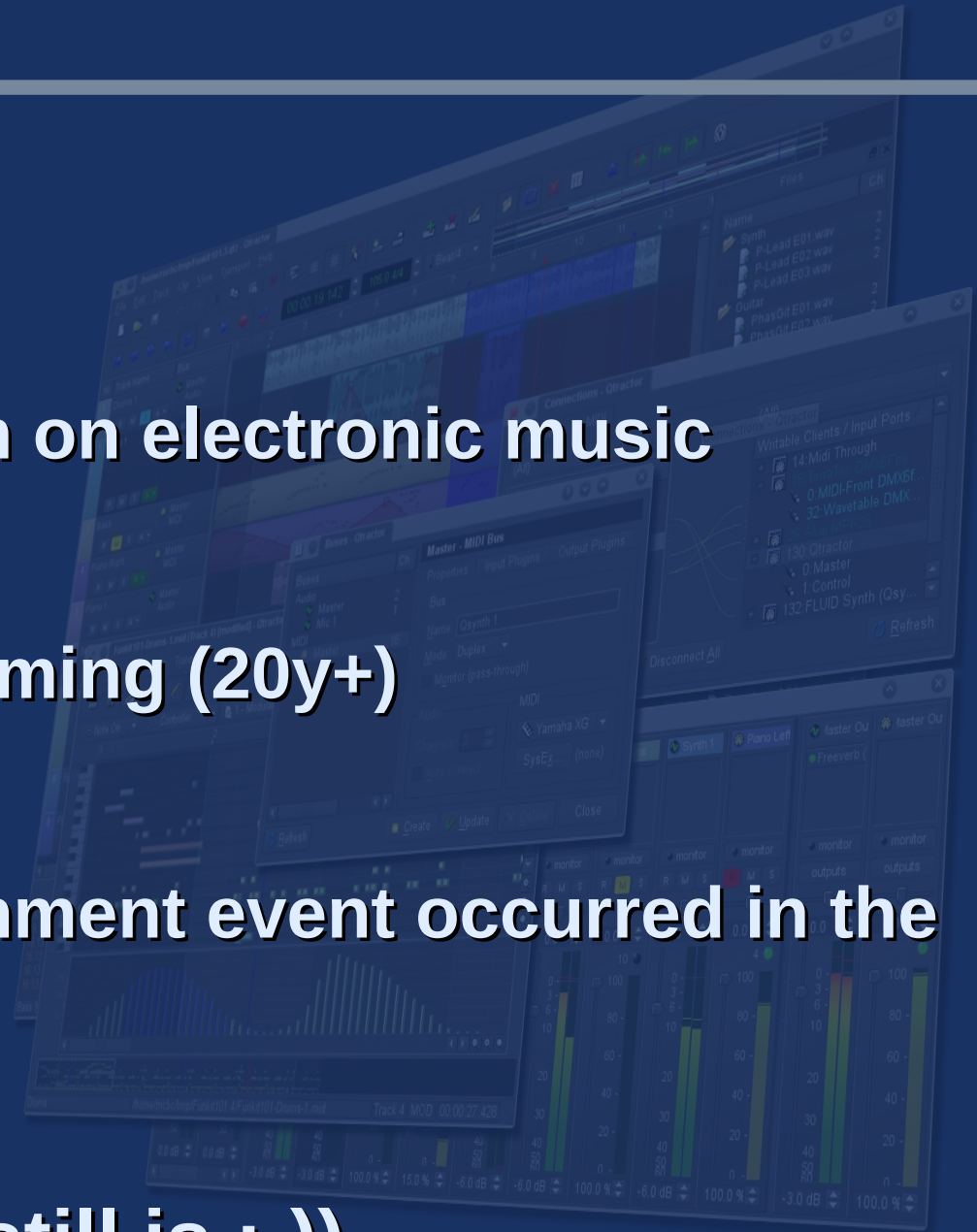> **Long time enthusiasm on electronic music**

The skill . . .

> **A half-life on programming (20y+)**

The moment . . .

> **An extraordinary alignment event occurred in the whole Universe . . .**

So, that was it ! (and still is ;-))

Back to Qtractor...

qtractor.sourceforge.net

Beta already!
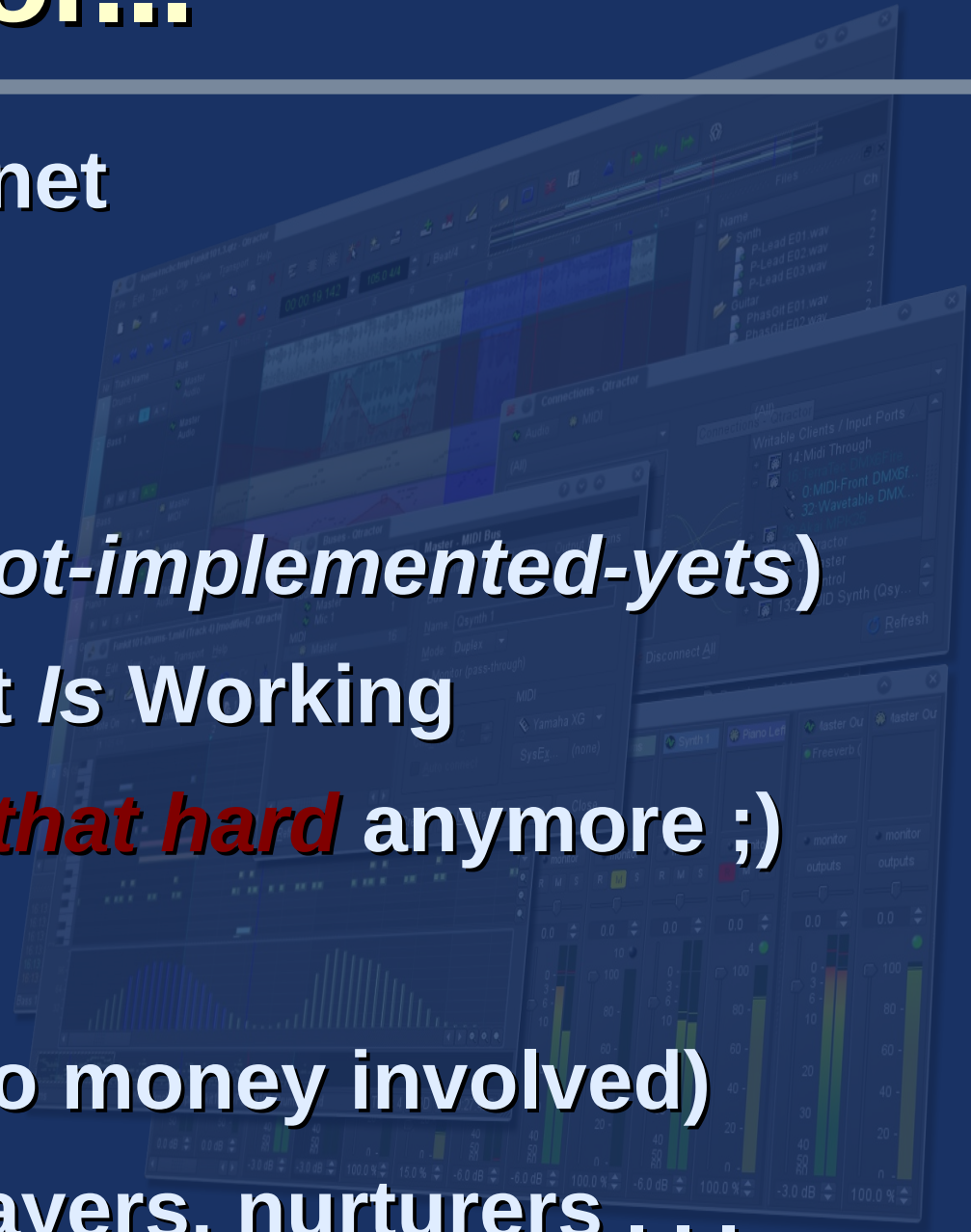
Fully functional (no *not-implemented-yets*)

What You See Is What *Is* Working

Still W.I.P. … just not *that hard* anymore ;)

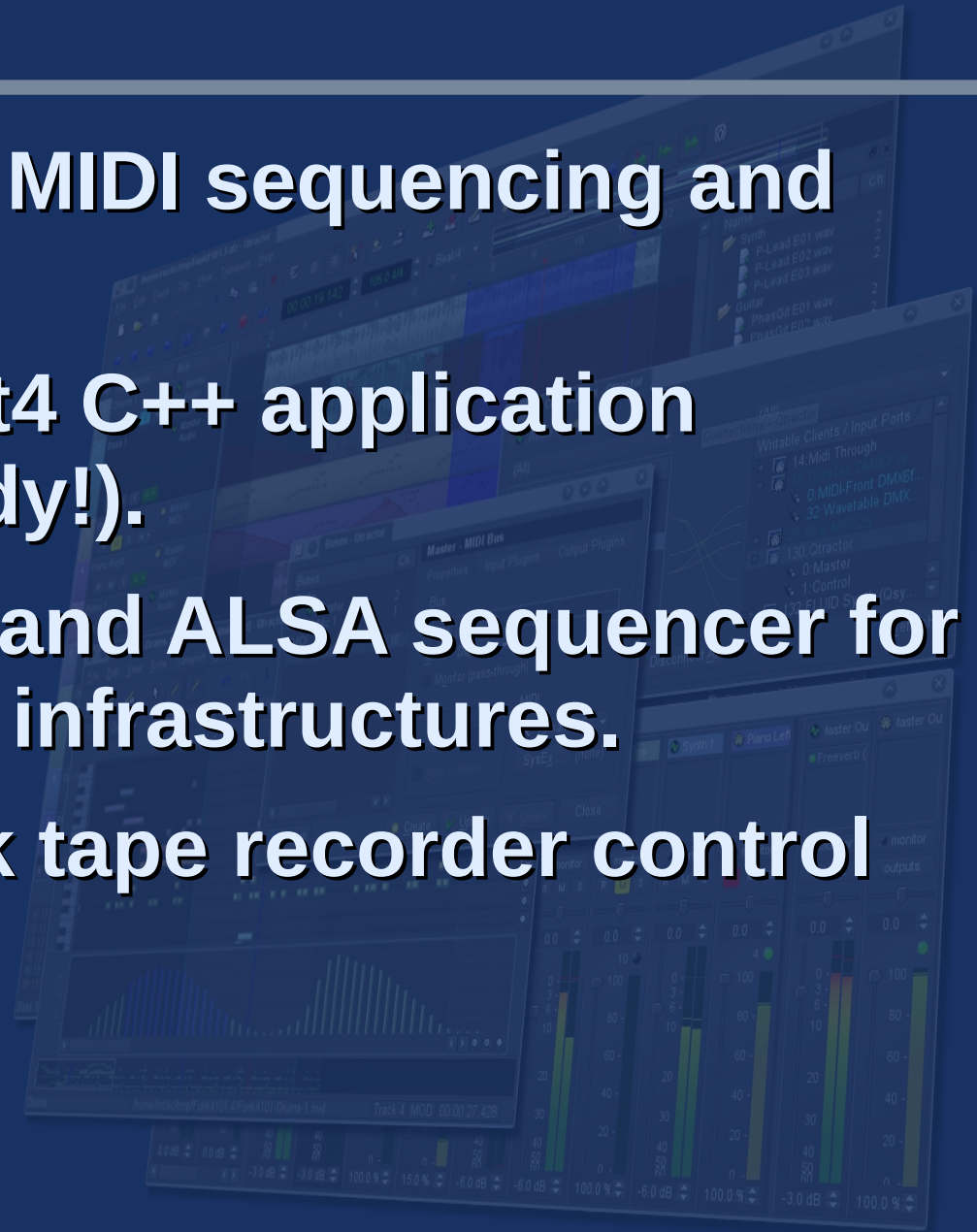Open for Business (no money involved)

users, developers, players, nurturers . . .

Featuritis (1)

Multi-track audio and MIDI sequencing and recording.

Developed on pure Qt4 C++ application framework (Qt5 ready!).

Uses JACK for audio and ALSA sequencer for MIDI, as multimedia infrastructures.

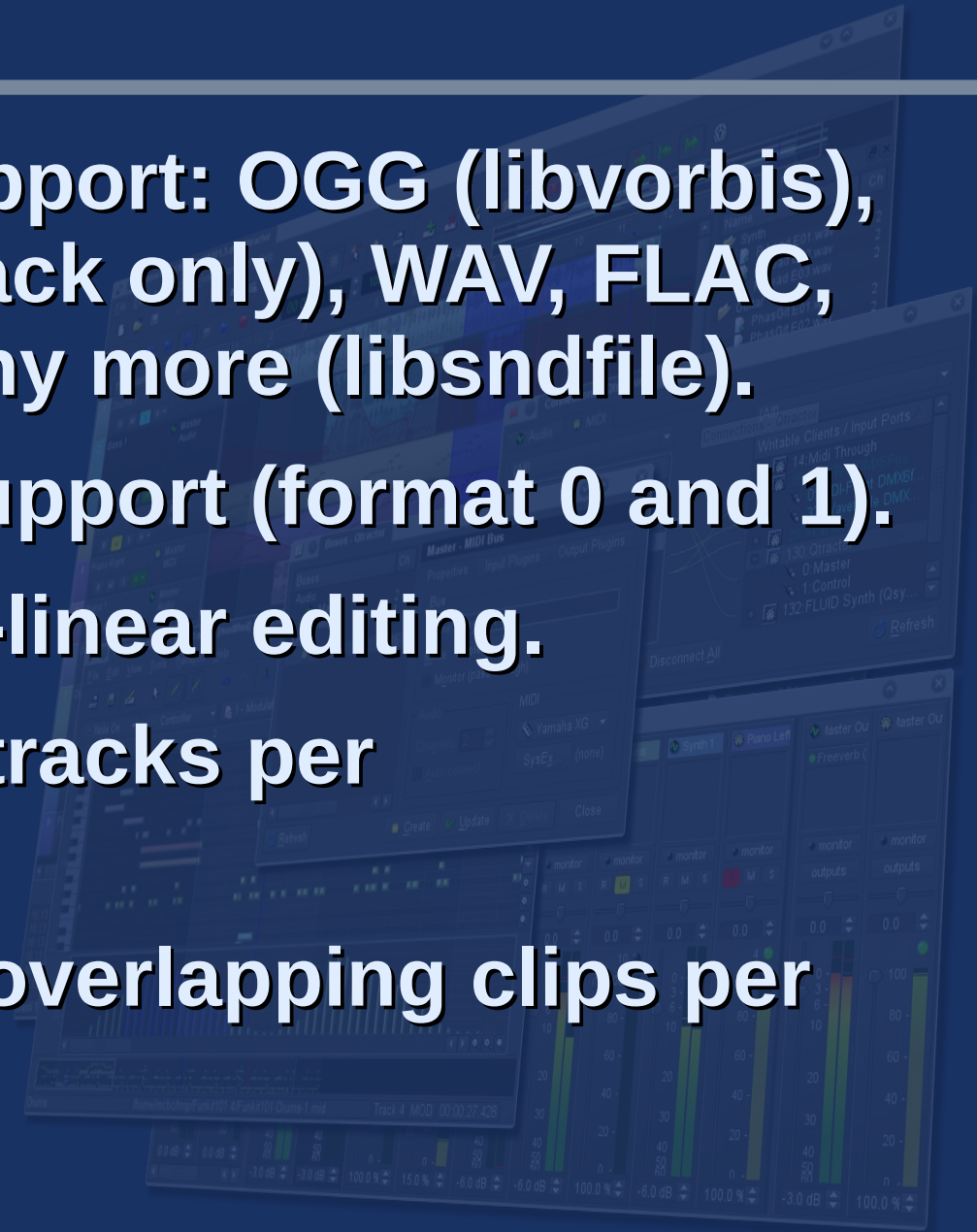Traditional multi-track tape recorder control paradigm.

Featuritis (2)

Audio file formats support: OGG (libvorbis), MP3 (libmad, playback only), WAV, FLAC, AIFF and many, many more (libsndfile).

Standard MIDI files support (format 0 and 1).

Non-destructive, non-linear editing.

Unlimited number of tracks per session/project.

Unlimited number of overlapping clips per track.

Featuritis (3)

XML encoded session / project description files (SDI).

Point-and-click, multi-select, drag-and-drop interaction (drag, move, drop, cut, copy, paste, paste-repeat, delete, split, merge).

Unlimited undo / redo.

Built-in mixer and monitor controls.

Built-in connection patch-bay control and persistence (*a-la* QjackCtl ;)).
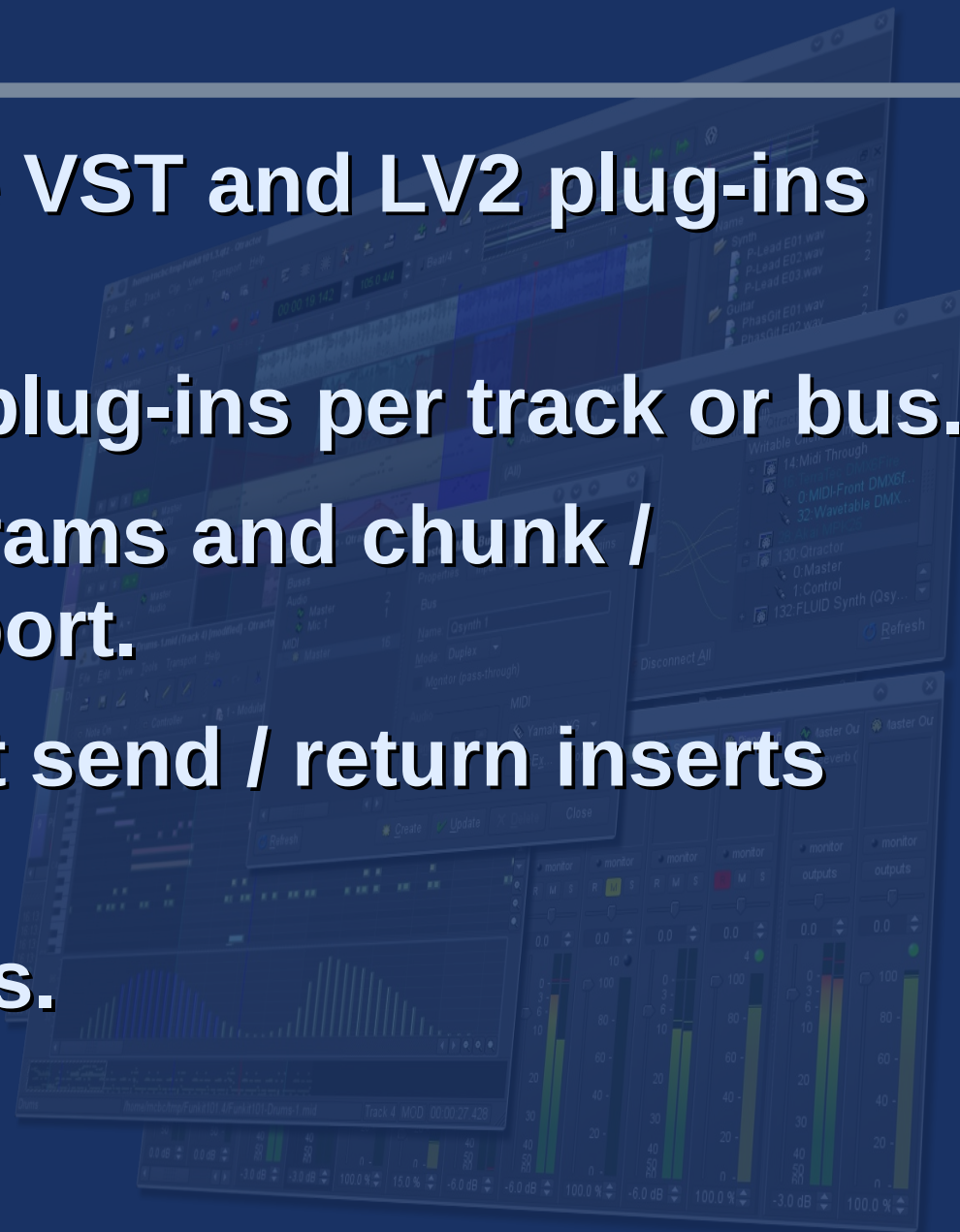
Featuritis (4)

LADSPA, DSSI, native VST and LV2 plug-ins support.

Unlimited number of plug-ins per track or bus.

Plug-in presets, programs and chunk / configurations support.

Unlimited audio effect send / return inserts per track or bus.

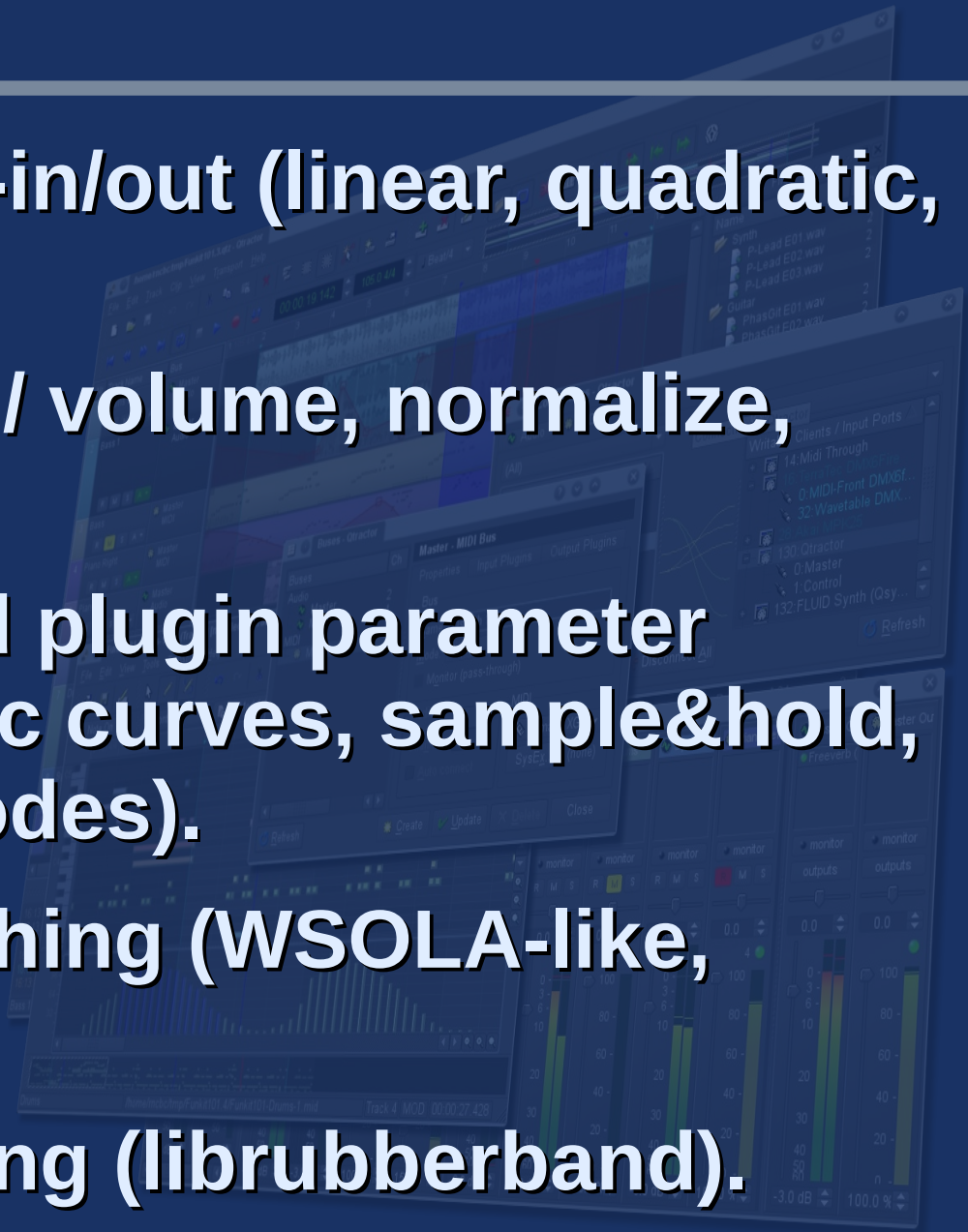Loop-recording / takes.

Featuritis (5)

Audio / MIDI clip fade-in/out (linear, quadratic, cubic).

Audio / MIDI clip gain / volume, normalize, export.

Audio / MIDI track and plugin parameter automation (dynamic curves, sample&hold, linear and spline modes).

Audio clip time-stretching (WSOLA-like, librubberband).

Audio clip pitch-shifting (librubberband).
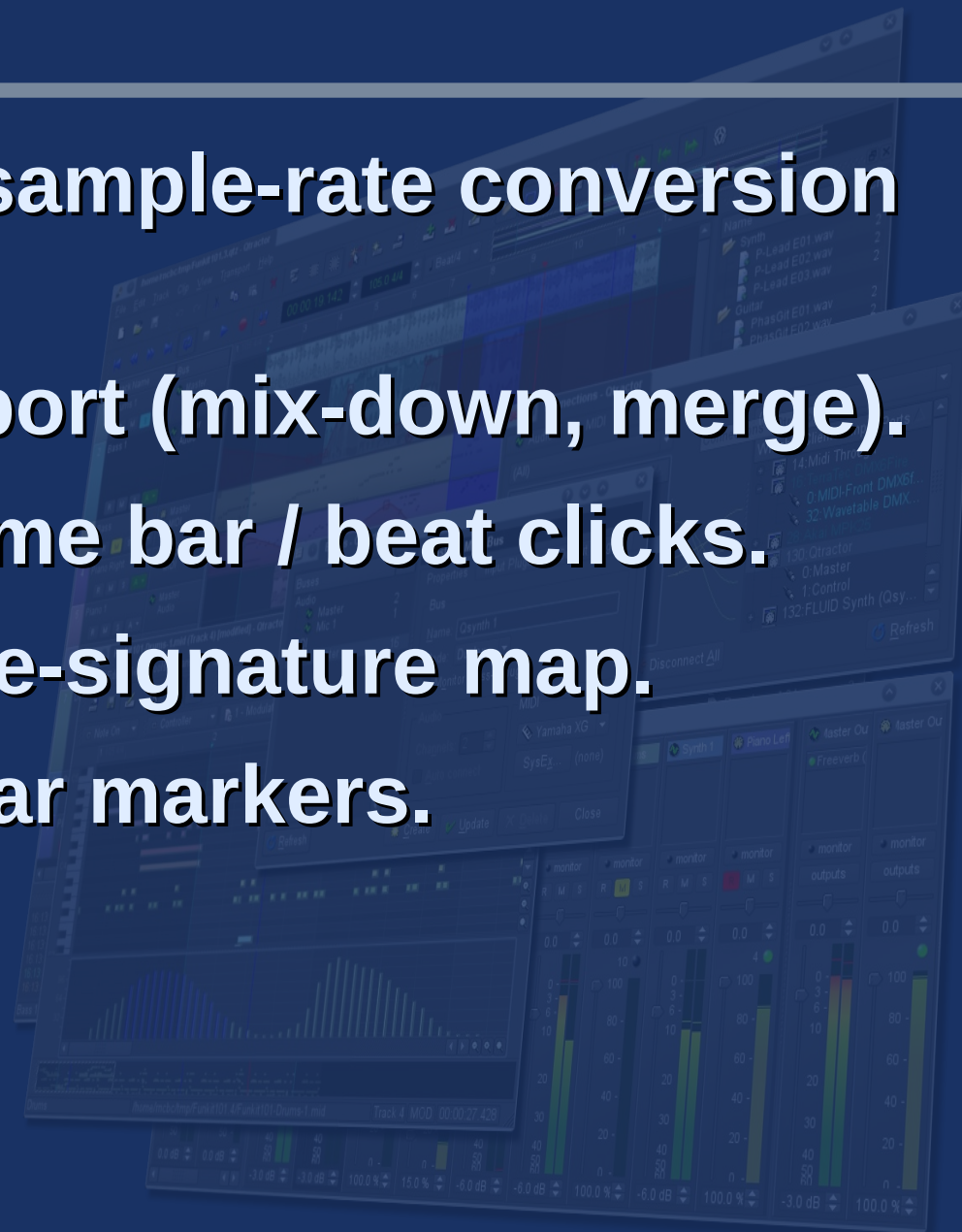
Featuritis (6)

Audio clip seamless sample-rate conversion (libsamplerate).

Audio / MIDI track export (mix-down, merge).

Audio / MIDI metronome bar / beat clicks.

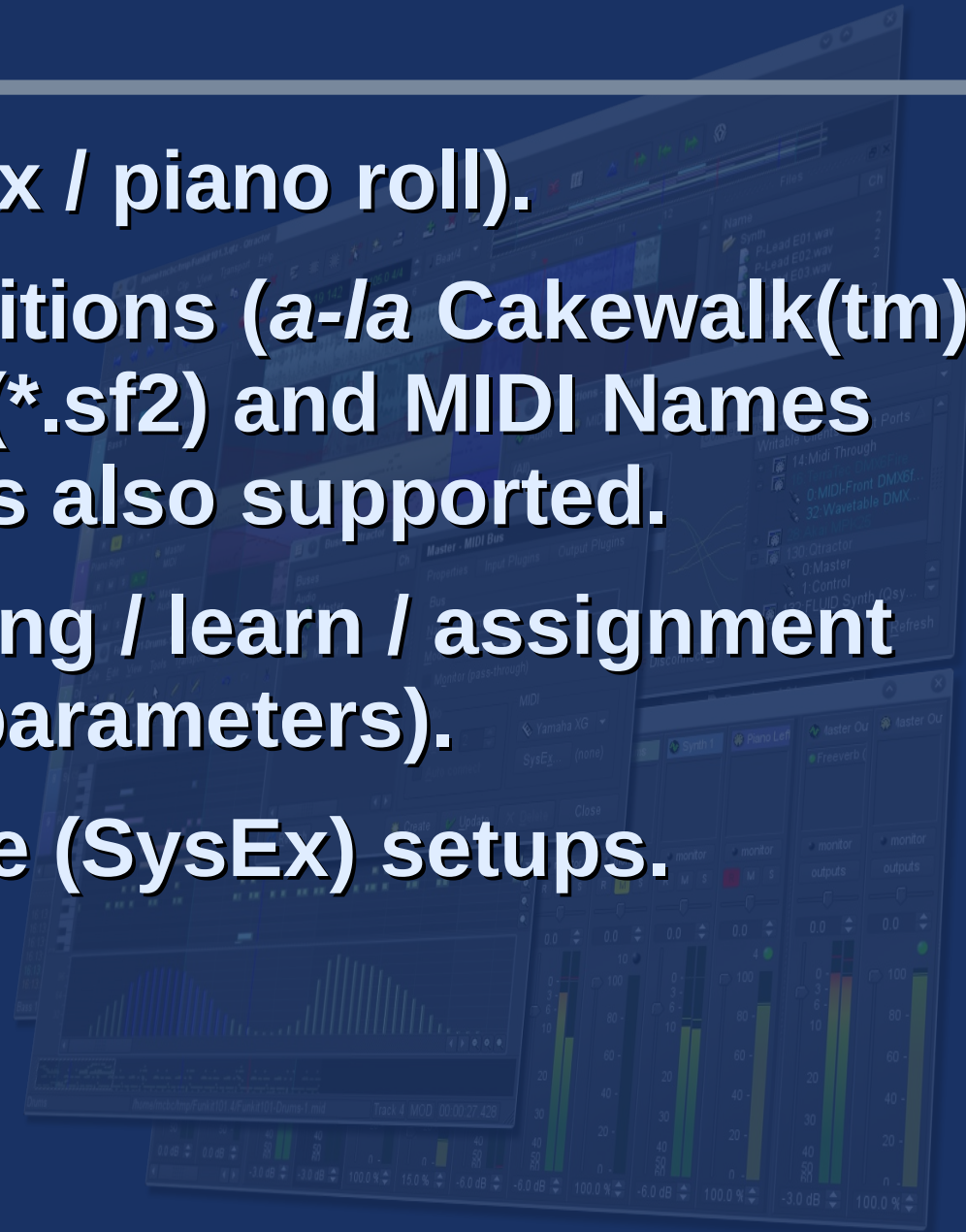Unlimited tempo / time-signature map.

Unlimited location / bar markers.

Featuritis (7)

MIDI clip editor (matrix / piano roll).

MIDI instrument definitions (*a-la* Cakewalk(tm) (*.ins)), SoundFont (*.sf2) and MIDI Names XML (*.midnam) files also supported.

MIDI controller mapping / learn / assignment (mixer and plug-in parameters).

MIDI system exclusive (SysEx) setups.
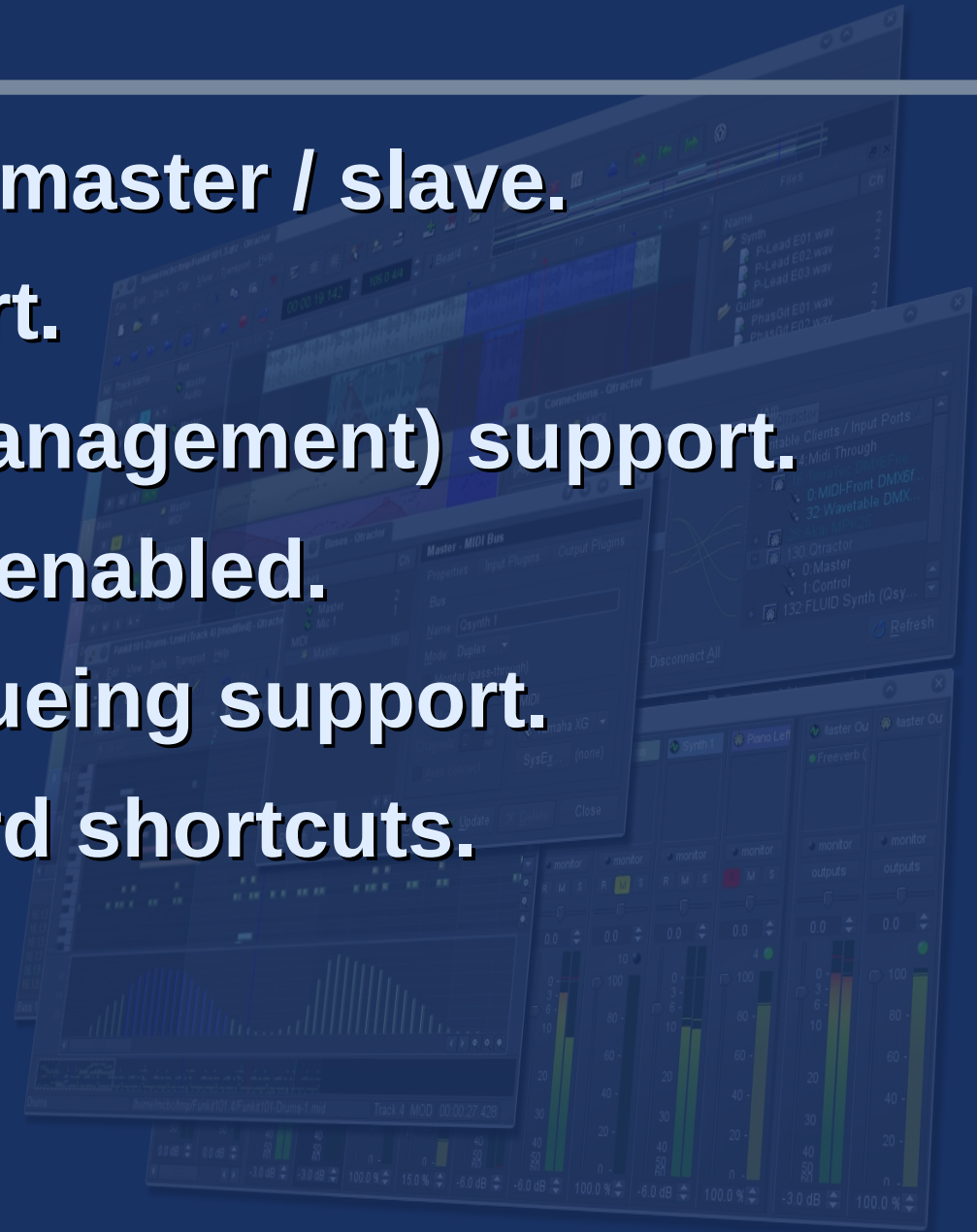
Featuritis (8)

JACK transport sync master / slave.

JACK session support.

NSM (Non Session Management) support.

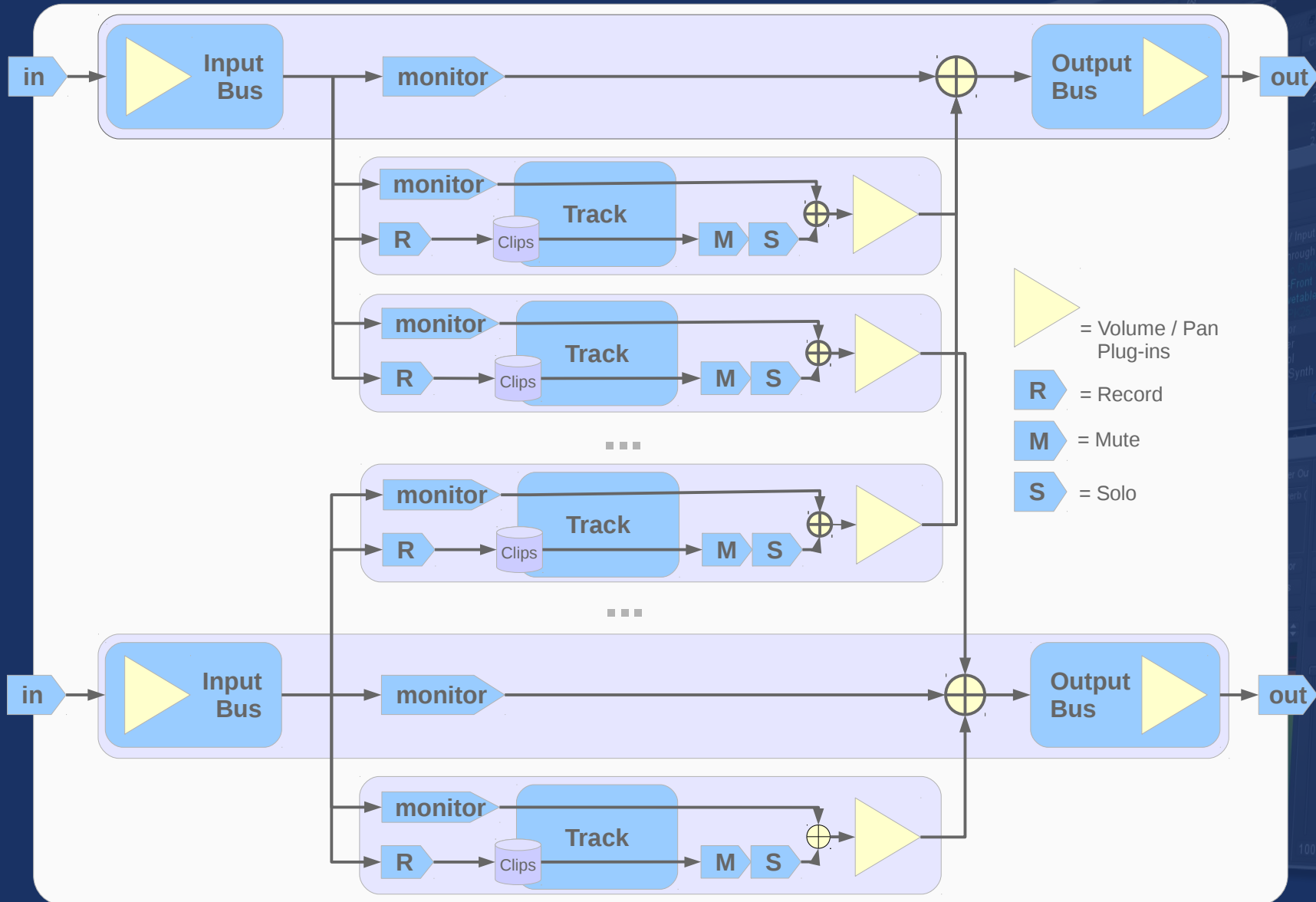MMC control surface enabled.

MIDI Song Position cueing support.
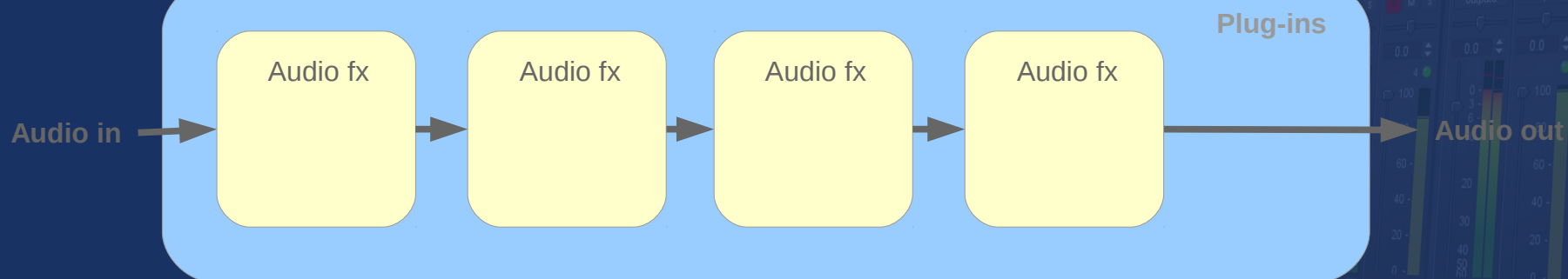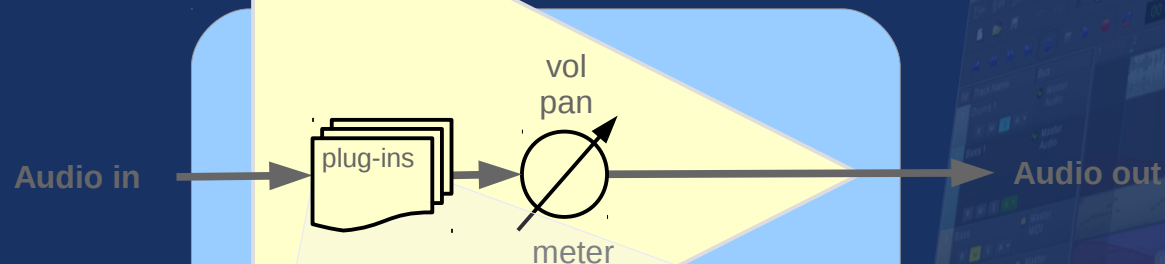
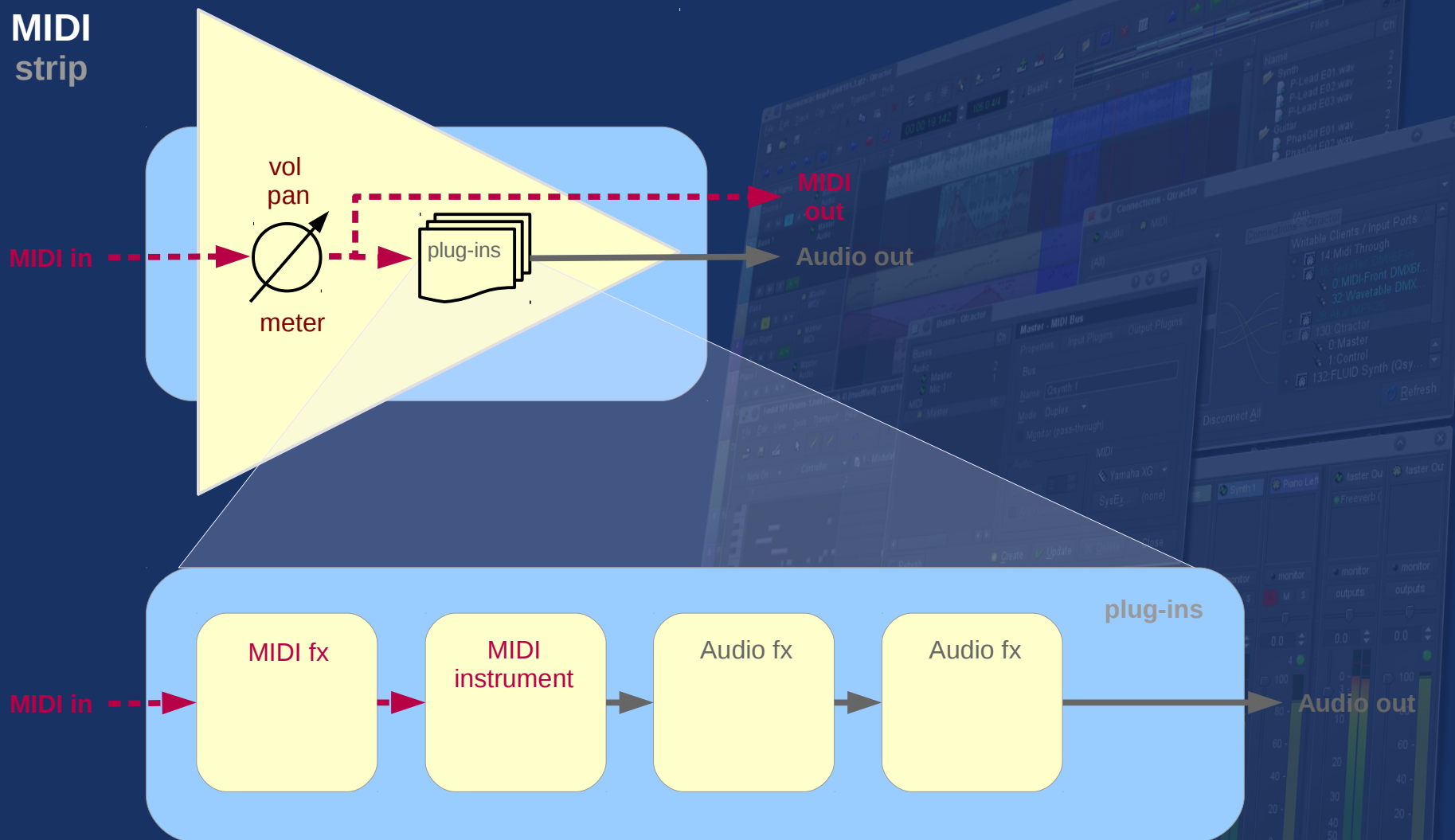Configurable keyboard shortcuts.

Screenshot !

Evil Flow Diagram (1)

= Volume / Pan Plug-ins

R = Record

M = Mute

S = Solo

Evil Flow Diagram (2)

Audio
strip

Audio in → plug-ins →

vol
pan

meter

→ **Audio out**

Plug-ins

Audio in → Audio fx → Audio fx → Audio fx → Audio fx → **Audio out**

Evil Flow Diagram (3)

MIDI strip

vol
pan

MIDI in

meter

plug-ins

MIDI out

Audio out

plug-ins

MIDI in → MIDI fx → MIDI instrument → Audio fx → Audio fx → Audio out
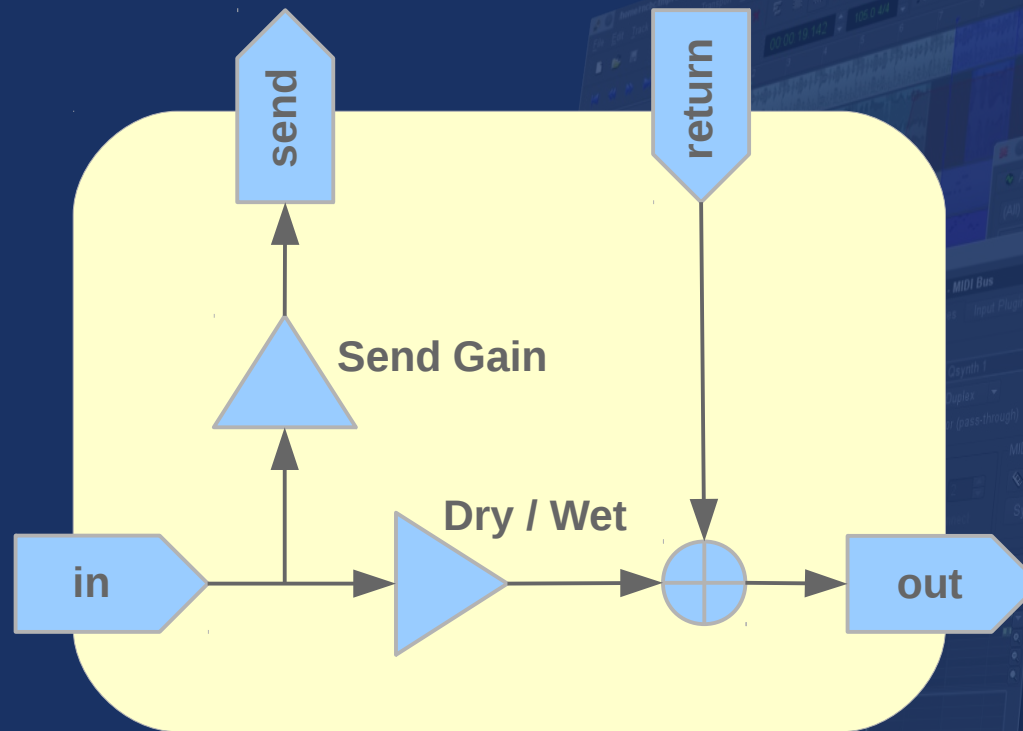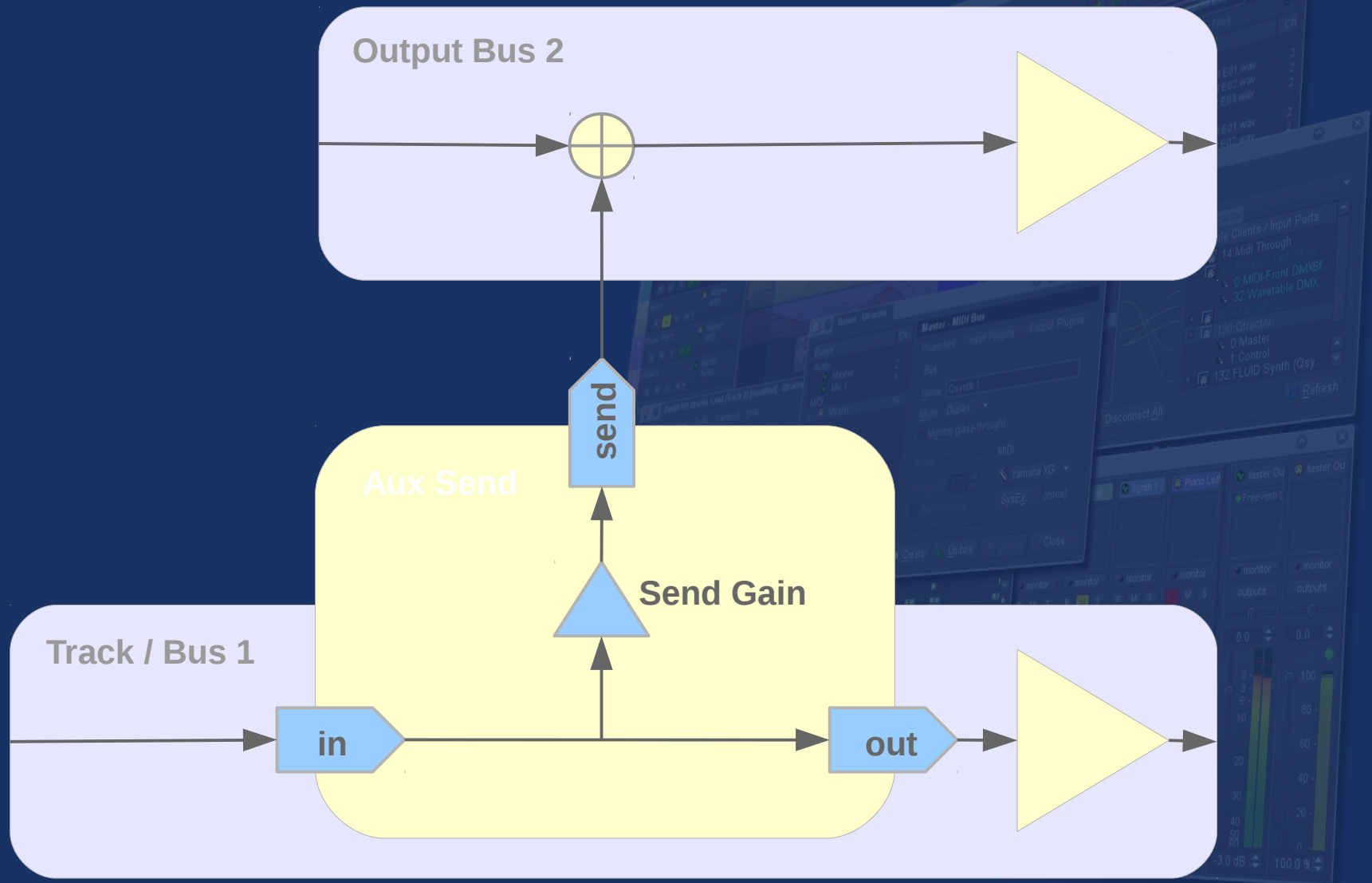
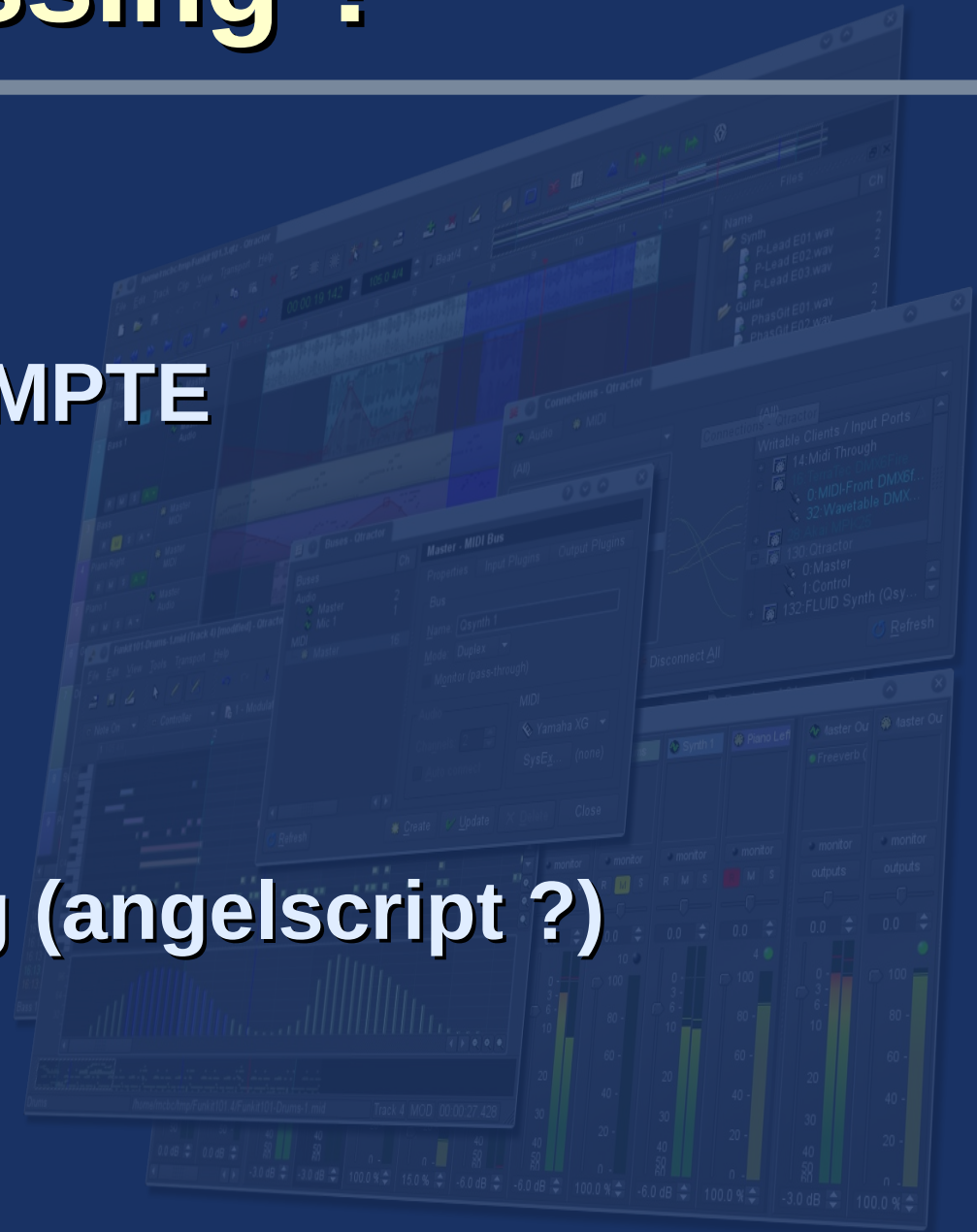# Send / Return Inserts

Aux-Send Inserts

What's still missing ?

Not in any particular order:

- **MIDI Time Code / SMPTE**

- **Auto-cross fading**

- **JACK-MIDI**

- **OSC Interface**

- **Integrated scripting (angelscript ?)**
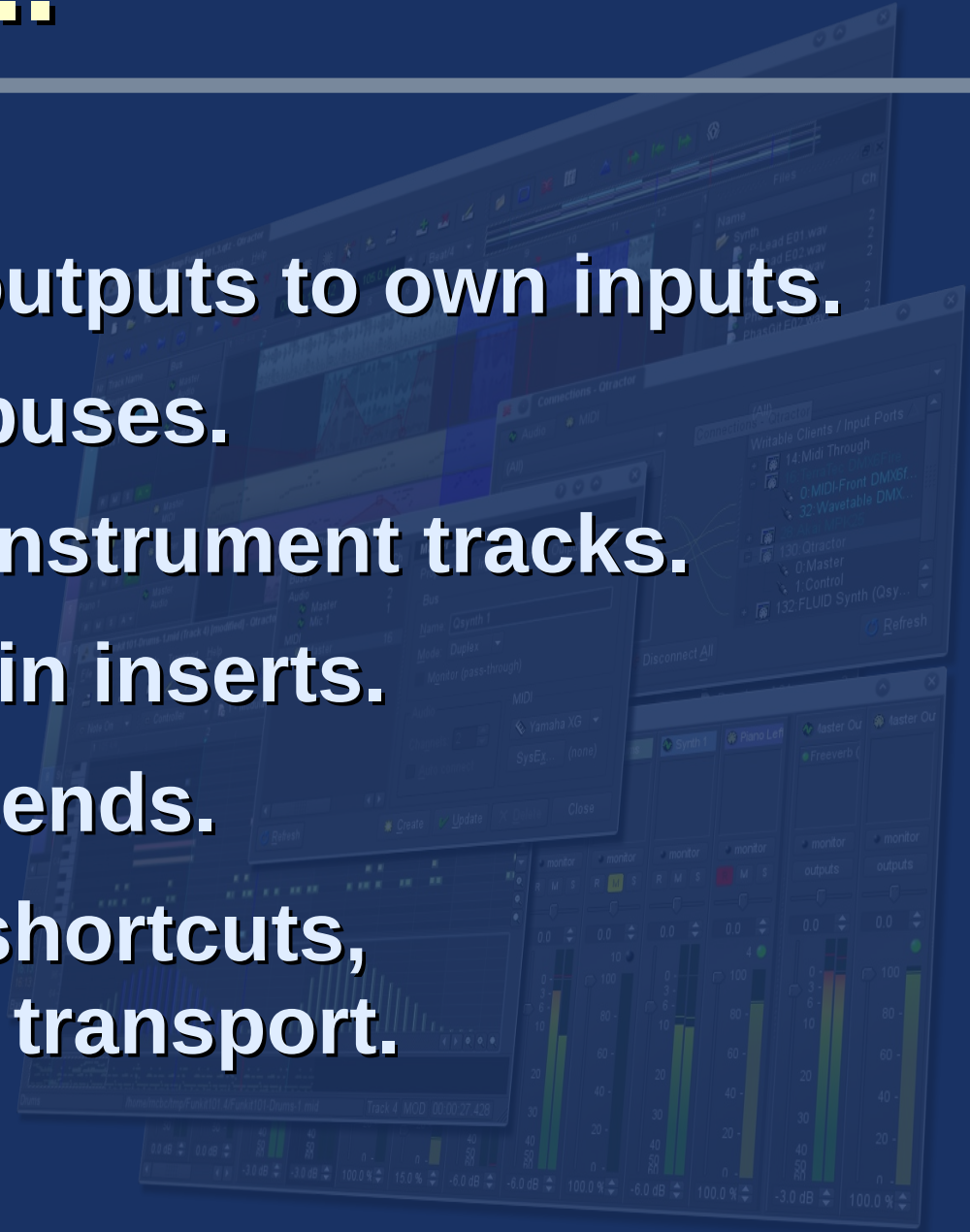
Your suggestion(s) here !

Shortcomings...

In some particular order:

- **Connecting audio outputs to own inputs.**

- **No automation for buses.**

- **No freeze of MIDI / Instrument tracks.**

- **No post-fader plug-in inserts.**

- **No MIDI track aux-sends.**

- **No MIDI controller shortcuts,
  but MMC, SPP for transport.**

Your complaint(s) here !

Q & A

Ten Years of Qstuff*

Is it good enough already ?

All of Qstuff* are free / open-source software; you can redistribute it and / or modify it under the terms of the GNU General Public License version 2 or later.

It is being possible through the knowledgeable, direct and / or indirect collaborative efforts of the Linux Audio Developers and Users communities.

Thank you all.