Le Nouveau Mirage

Software Architecture Evolution for Régisseur & Diffusion

Introduction

Objectives in designing a new Mirage architecture

- Focus on the needs of the Régisseur / Light Designer
  - allow régisseur to more quickly design & control shows
  - more intuitive by emulating traditional hardware
- New control possibilities
  - physical control of parameters through MIDI
  - support for interactive control from sensors, built in
- Increase modularity
  - Create more unique configurations / flexibility is design
  - Provide ‘building blocks’ rather a fixed design
  - ease the process of designing custom modifications
- Strategies to realize goals & increase diffusion
  - better documentation & SDK for Max developers
  - new source forge infrastructure
  - develop a long term strategy

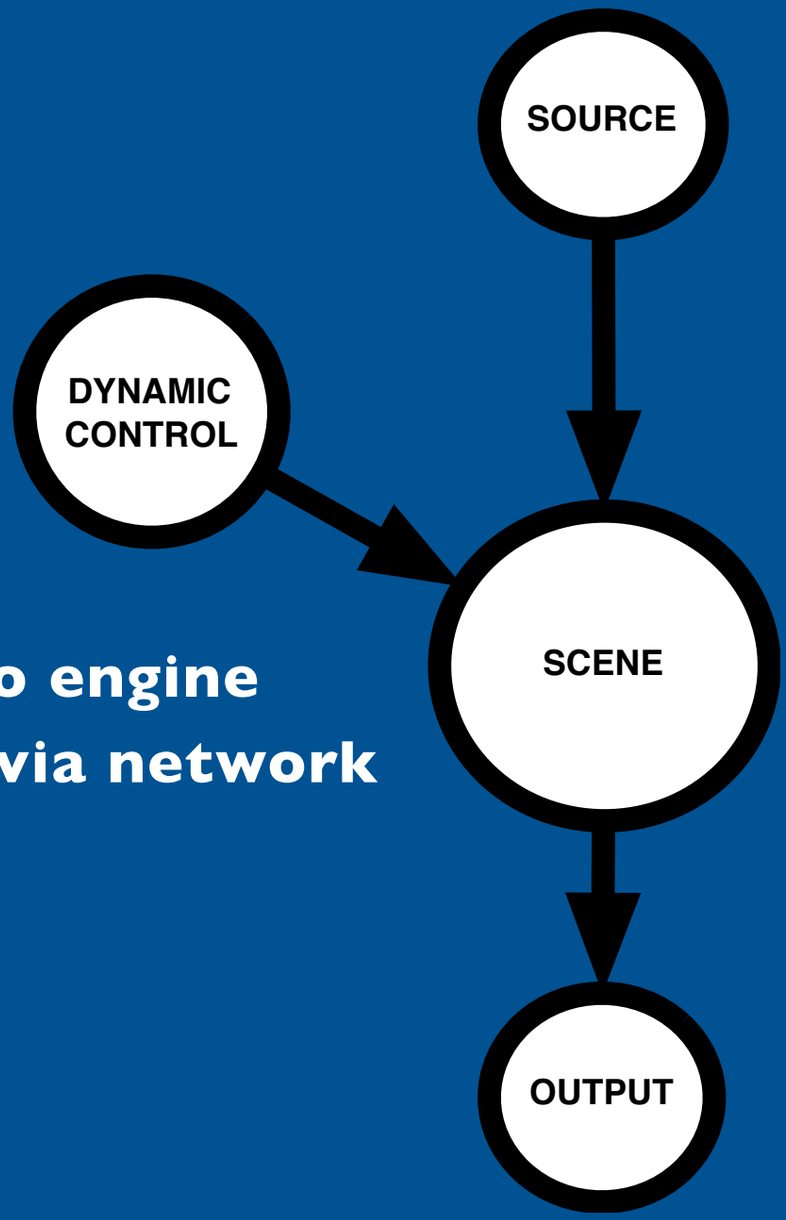
Overview

Proposed evolution of Mirage

- **Modular Source Inputs**
- **Scene windows comprised of vertical tracks**
- **Modular Outputs**
- **Controller Plugin Architecture**
- **Improve preset and automation facility**
- **Master clock**
- **Hardware control surface support**
- **Full port to MacOS X**

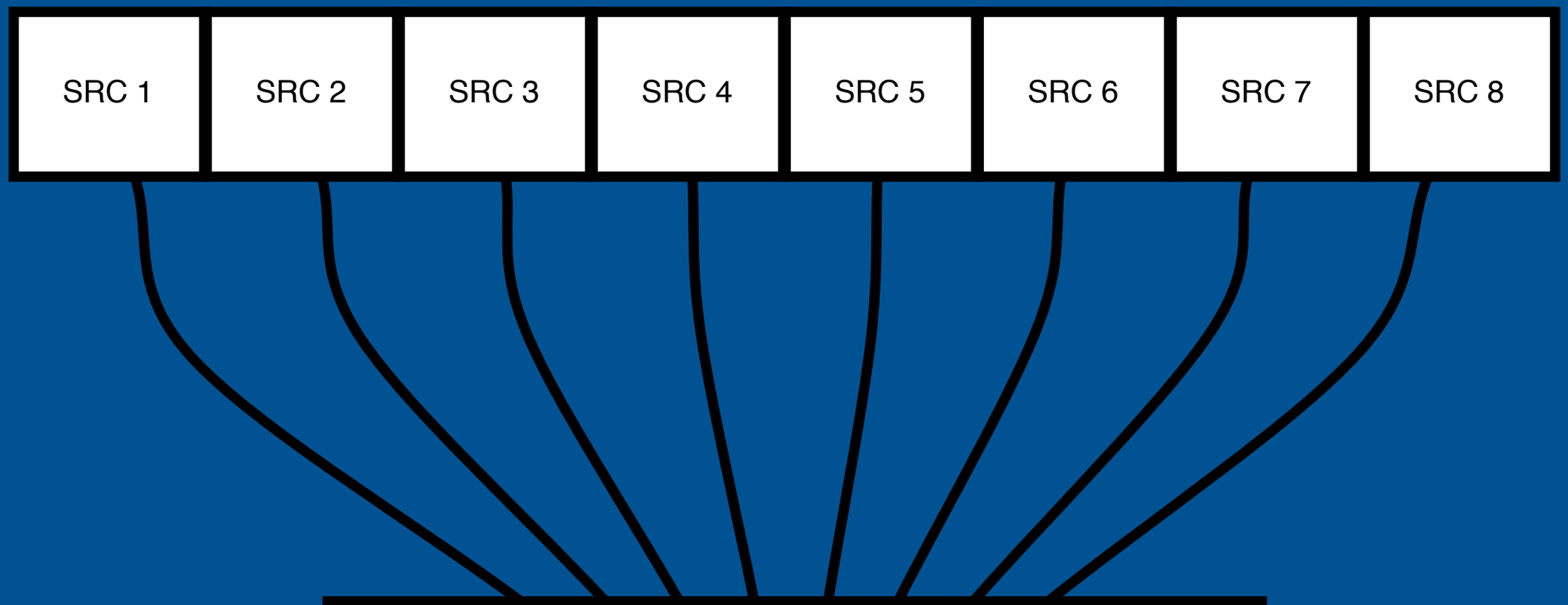
Important Legacy functions

- **control the software as an faceless video engine**
- **documented syntax for remote control via network**
- **‘total’ preset storage and retrieval**



Modular Sources

8 dynamic sources, any type in any combination.

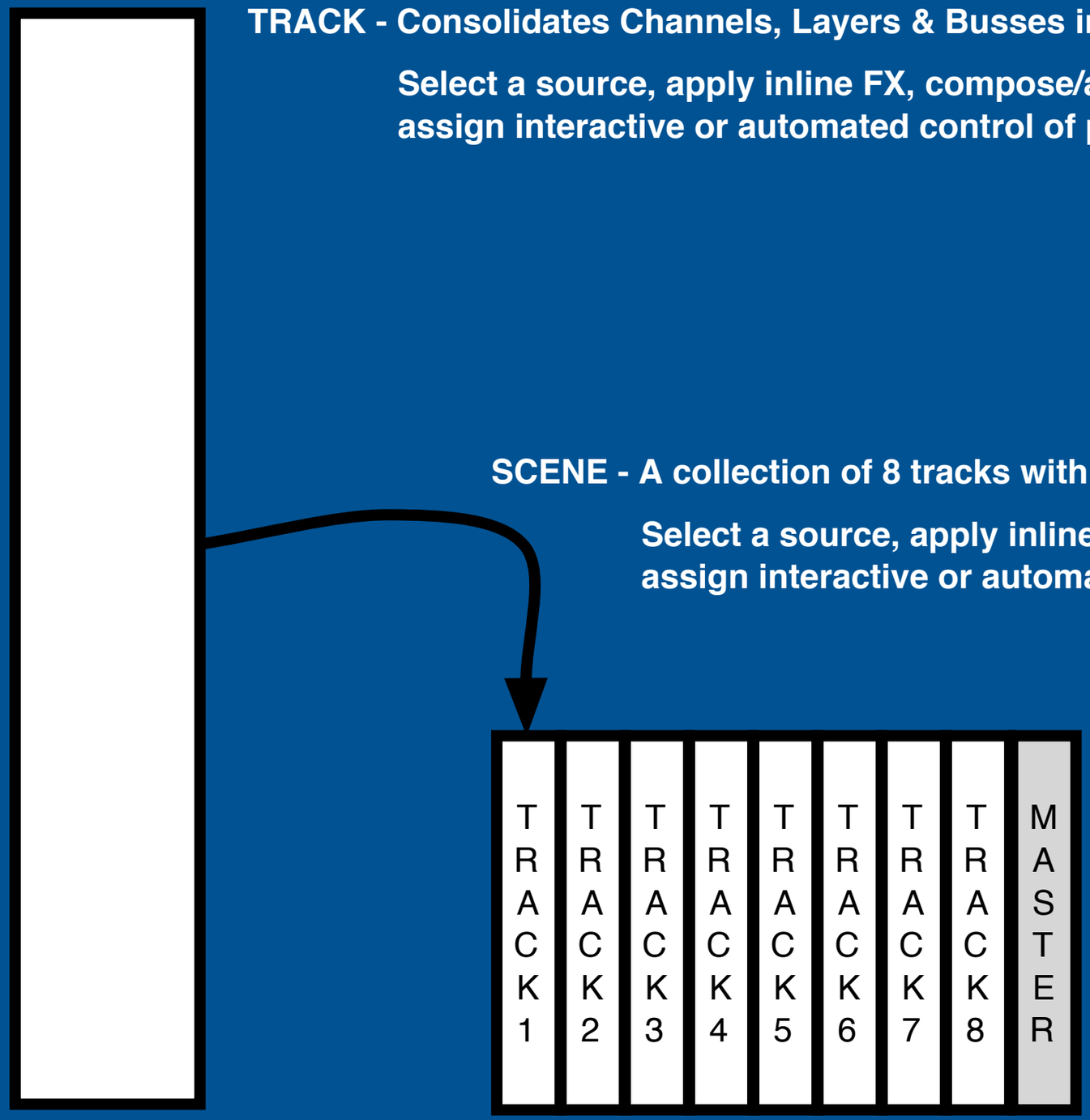


SOURCE TYPES

Quicktime Movie player (.mov any type, including swf)
Live Input (as many as is allowed by hardware constraints)
Still Image (jpeg,tiff,pict,png,gif etc)
Buffer - import, record, play, export
Mask Generator - draw arbitrary/geometric masks
Extensible - 3rd party Max patches added later

Tracks & Scenes

Primary user interface based on HUI for lighting & sound.



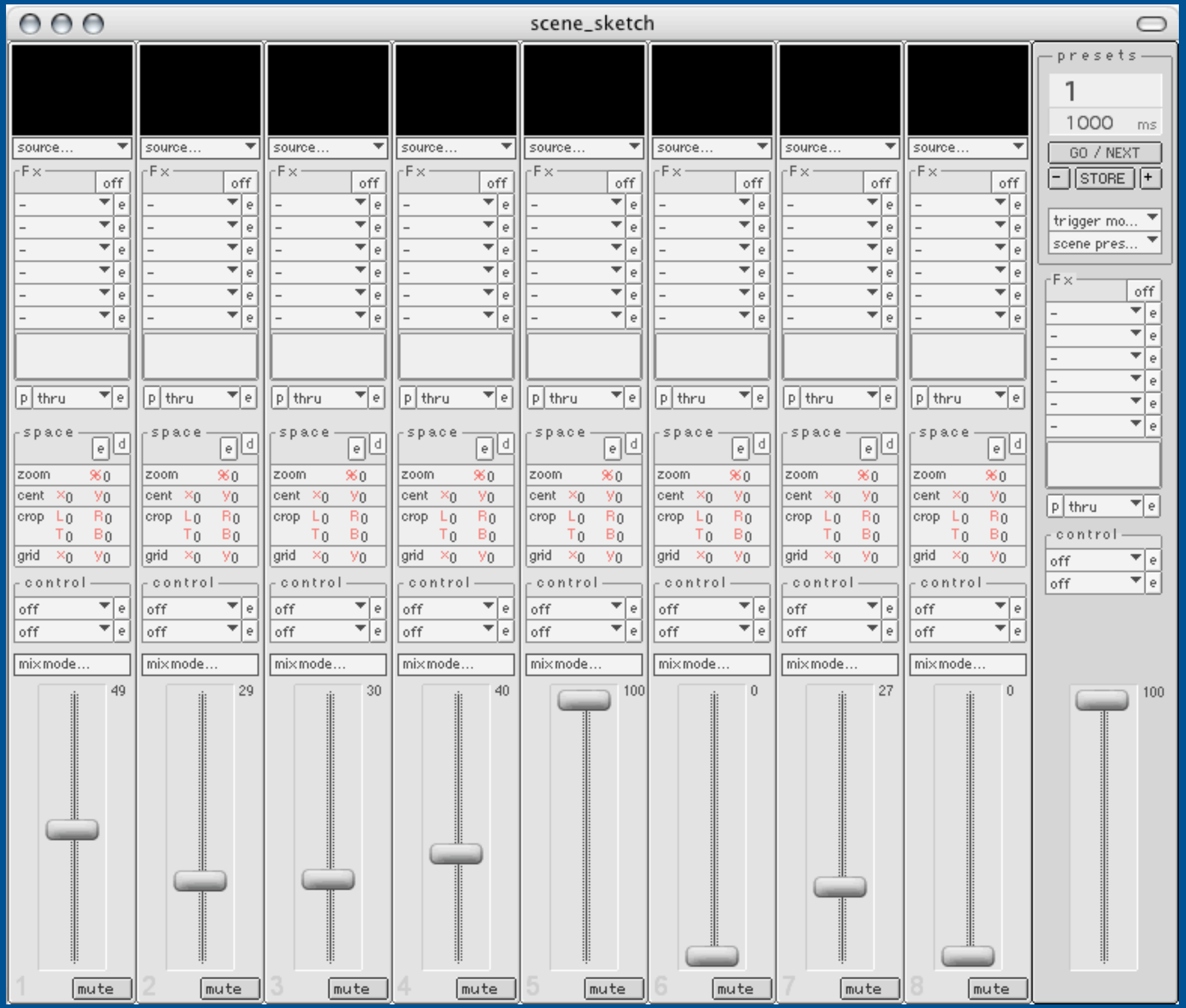
TRACK - Consolidates Channels, Layers & Busses into a unified window.

Select a source, apply inline FX, compose/animate spatial properties, assign interactive or automated control of parameters, fade transparency

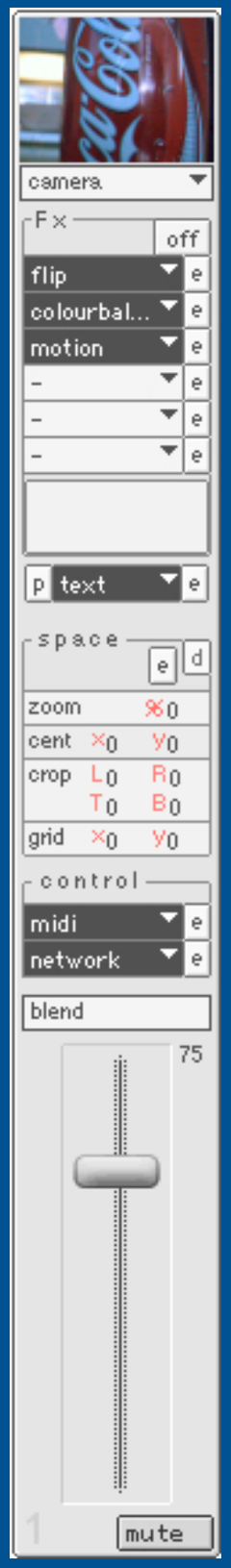
SCENE - A collection of 8 tracks with master control

Select a source, apply inline FX, compose/animate spatial properties, assign interactive or automated control of parameters, fade transparency

Tracks & Scenes



Anatomy of a Track



Preview Window (p button)

Select Source (channels)

FX Chain (channels) - new types

Dynamic FX (channels) - new types/sdk

Spatial Positioning (layers) - new gui

Dynamic Control Modules (new) - new types/sdk

Mix Mode (layers)

Track Fader (transparency)

Mute (new)

Tracks - Dynamic FX

Custom Video FX written with Max for Mirage

Similar to previous version, with new plugin SDK

The possibility writing effects patches for specific productions

Drag and drop plugin functionality

May use SoftVNS or Jitter (with bridge objects)

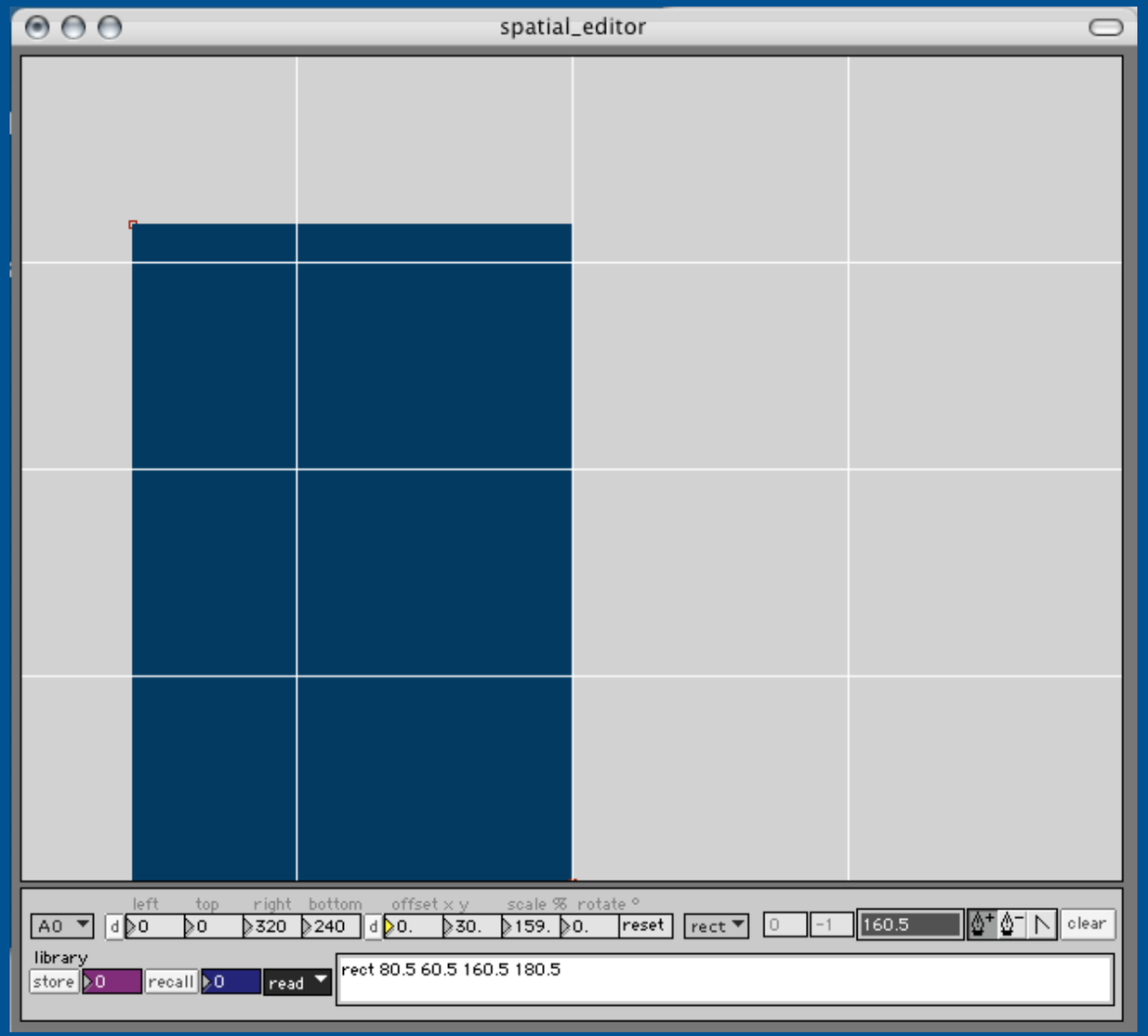
Patch contains one video input and one video output

Tracks - Spatial Composition

Allows one to scale, position, crop a track in space

Similar to ‘layer’ functionality in previous version

Auxilliary graphic interface for ease of use, similar to mask interface



Tracks - Dynamic Controller Plugins

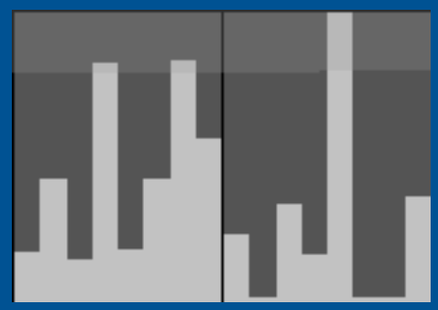
Special kind of plugin for mapping control data to track parameters

Physical control via MIDI controller messages

Client/server control via OT/UDP

Motion or color tracking of video

User definable envelopes



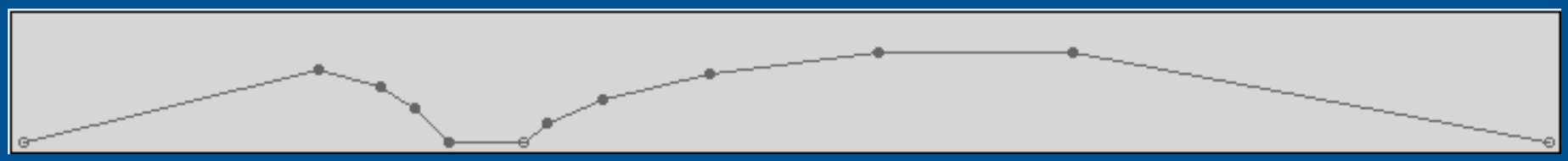
Mathematical oscillators (sine, cosine, noise etc)

Hardware specific plugins (sensors, RS-232 etc)

Lateral ‘track linking’ to synchronize/slave to other tracks

Synchronize control events from presets, or manual override

Easily add new controller types



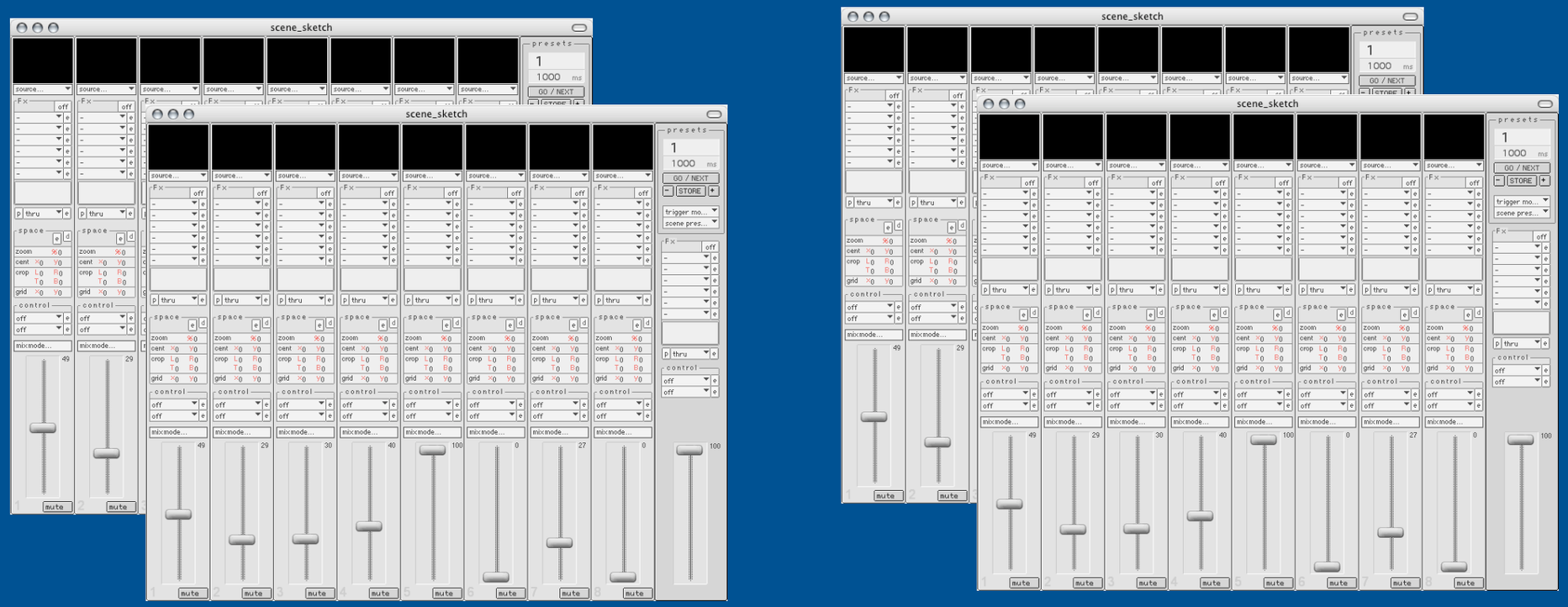
Anatomy of a Scene

Scene is a collection of 8 tracks with a master control strip

Conceptualize a scene as a composition of one piece, or many pieces executed over time.

Master control has its own FX bus, control plugin, which can act on the scene as a whole.

One can fade between any 4 scenes at once on a given output.

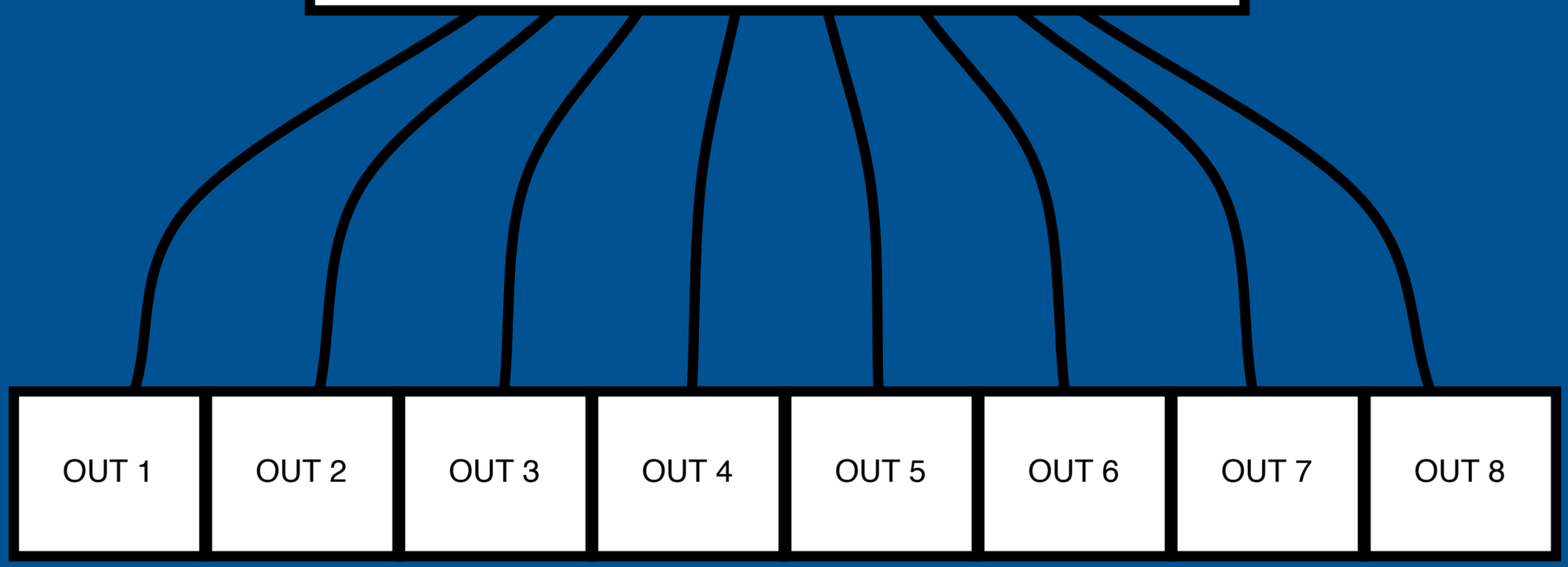


Modular Outputs

Multiple screens allow multiple projectors attached to one CPU, or composite multiple screens on a single hi-resolution projector. New output types added for flexibility & utility.

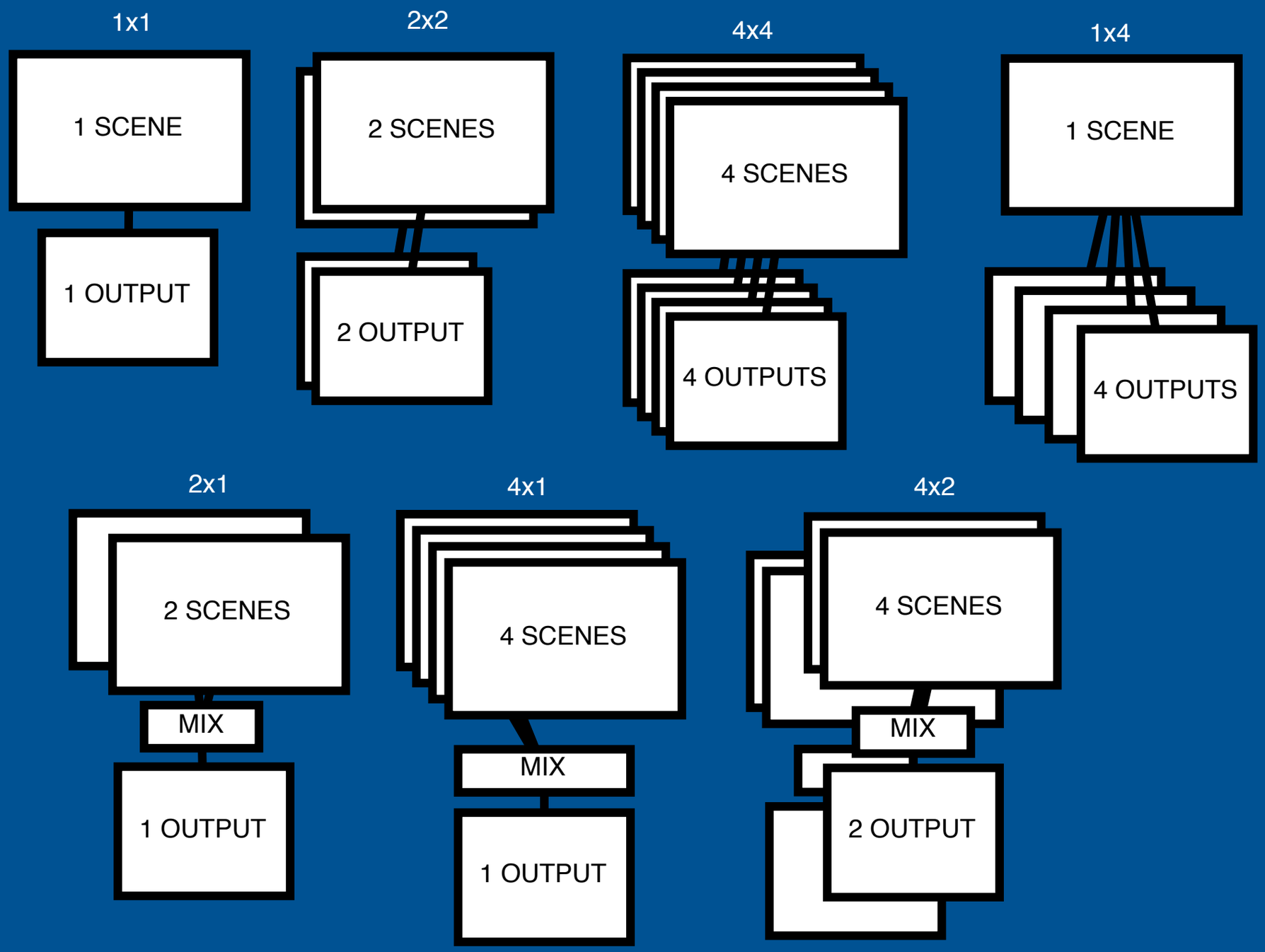
OUTPUT TYPES

Preview - resizable, low priority
Screen - 640x480, 800x600, 1024x768, 1280x1024 etc
Info - stream size, frames per second
Disk Record - stream movie to disk
Buffer - routes to source for recording
Extensible - 3rd party Max patches added later



Scene Output Scenarios

Scenes may be output in various ways, up to 4 scenes per output. One CPU may have multiple projectors attached.



Preset Management & Automation

Primary Program Control

- triggers synchronized scene presets
- go ‘now’ (next) or ‘select # & go’
- interpolates all values according in (ms)
- elapsed time of preset
- ‘time shift’ interpolation (slower/faster)
- store snapshot, save, recall preset files
- log presets with notes, print cue sheet
- master fader, fades all scenes to black
- access to other windows, preferences

Nouveau Mirage Conclusions

We carry over the strengths of the old Mirage, & redesign its weak points...

- **track/scene interface paradigm**
- **presets, interpolation, tools to deal with dynamic time**
- **increased modularity with published SDK**
- **physical & virtual controllers, without meta-conduit**
- **conduit capability built into Mirage**
- **continue collaborative development between developers, stage designers, & regisseur**
- **source forge, wiki, development workshops, translation**
- **diffusion!**