

# Integra

Repertoire Migration

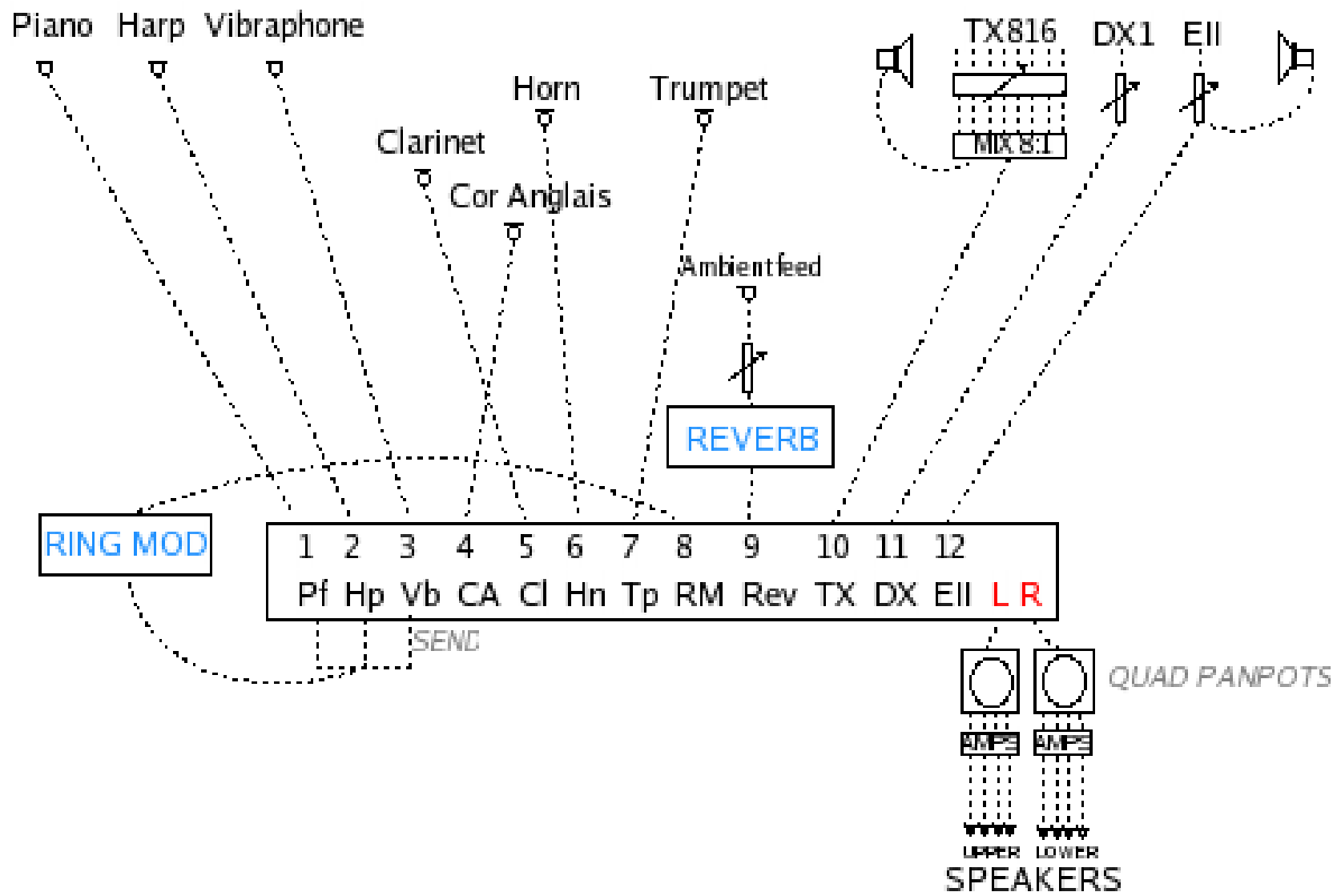
*Madonna of Winter and Spring*

by

Jonathan Harvey

# Integra

## Repertoire Migration



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## Repertoire Migration

### Sampling

- Quicker and easier in the short term
- Faithful reproduction of original sound
- Simplifies process of further updates

### Synthesis

- Quicker in the long term (for additional works using same technology)
- Sound is free to evolve over time
- Better sense of interaction during performance

### Solution

- Use synthesis for commonly found technology (e.g. DX series) otherwise use sampling

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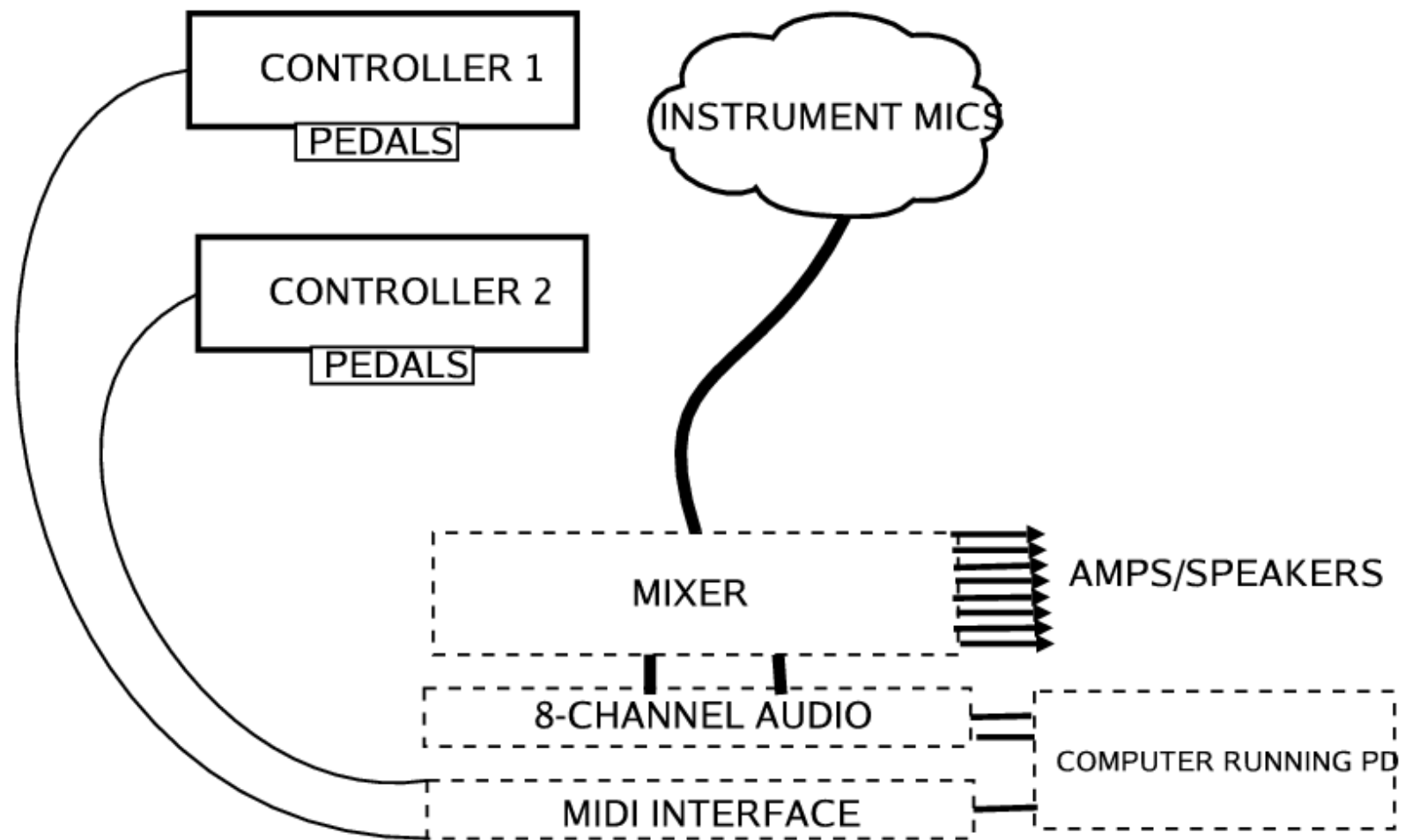
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### Implementation

- Use DSSI to host 'virtual instruments' for DX emulation and sampling
- Use PD for hosting plugins and processing of control data
- PD patch created to receive MIDI inputs from two keyboard controllers, one with two foot control pedals and a 'sustain' pedal, one with one foot control pedal.
- PD Patch for specialisation – 8-channel in, 8-channel out.
- Use automation as much as possible to control level and pan position changes
- Good packaging and documentation for ease of installation and usage.

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### PD implementation

- [dssi~] DSSI plugin host – now complete
  - TX816 – one [dssi~] instance supporting 8 Hexter instances
  - DX1 – one [dssi~] instance supporting 2 Hexter instances
  - EMII – one [dssi~] instance supporting fluidsynth - soundfont
- [freeverb~] for reverb (it has 'freeze' mode)
- Ring modulation as abstraction
- 'Performance Patch' system for MIDI control mapping and pan/volume control

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*"DSSI (pronounced "dizzy") is an API for audio processing plugins, particularly useful for software synthesis plugins with user interfaces.*

*DSSI is an open and well-documented specification developed for use in Linux audio applications, although portable to other platforms. It may be thought of as LADSPA-for-instruments, or something comparable to VSTi.*

*DSSI consists of a C language API for use by plugins and hosts, based on the LADSPA API, and an OSC (Open Sound Control) API for use in user interface to host communications. The DSSI specification consists of an RFC which describes the background for the proposal and defines the OSC part of the specification, and a documented header file which defines the C API.*

*DSSI is Free Software. The DSSI header file is provided under the GNU Lesser General Public License."*

Taken from [dssi.sourceforge.net](http://dssi.sourceforge.net)

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### [dssi~] PD external

- Full featured DSSI host based on the jack-dssi-host sample
- Multiple instances of the [dssi~] object can be used in one patch, and each [dssi~] object can host multiple plugin instances
- Has additional features such as 'configure' support (including patch loading), and GUI show/hide for each instance
- Cross platform – binaries available for Linux and Mac OS X
- Significant modifications have been made to the Hexter plugin to support the needs of the work. Many thanks to Sean Bolton.

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### Project Status

- Selection of MIDI files with excerpts from the score produced by Jonathan Green
- Some audio examples using these are available
- All DX1 and TX816 patch data converted to sysex format
- All Emulator II samples converted to WAV format, with soundfont bank creation in progress
- Mac OS X 'easy installer' available for download (contains all necessary materials for performing the piece).
- Final performance patch in progress
- Finished system will be available mid next-week.

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Audio Examples

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### Future Plans

- Add spacialistaion and ring modulation features.
- Port [dssi~] to Max/MSP for use in other Integra projects
- Make osc-enabled Integra 'modules' for Yamaha DX series

Recreate the patch using Integra modules.

See [www.conservatoire.uce.ac.uk/harvey](http://www.conservatoire.uce.ac.uk/harvey) for future developments