Embodied Controls for Mixing and Composition

Dalia El-Shimy Jeremy R. Cooperstock

Centre for Interdisciplinary Research in Music, Media and Technology (CIRMMT)
McGill University

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CIRMMT Centre for Interdisciplinary Research in Music Media and Technology

SHARED REALITY LAB

Digital Audio Workstations

MusicRadar.com: "The 16 best DAW software apps in the world today"

#1 Image-Line FL Studio

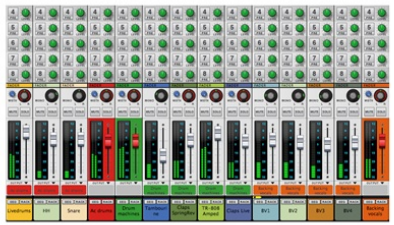
#2 Ableton Live

#3 Apple Logic Pro

#4 Cockos Reaper

#5 PreSonus Studio One

#6 Steinberg Cubase



#7 Propellerhead Software

#8 Cakewalk Sonar

#10 Renoise

#11 MOTU Digital Performer

#12 Magix Samplitude

#9 Avid Pro Tools

#13 Apple GarageBand

#14 Acoustica Mixcraft Studio

#15 Sony Creative Software Acid

#16 MuTools MuLab

The Problem

"I find all the clicking and computer-based activity... to **drain** *my creative energy and make the process* **frustrating**."

- Steve Cowan

The "Multi-track Recorder" Metaphor

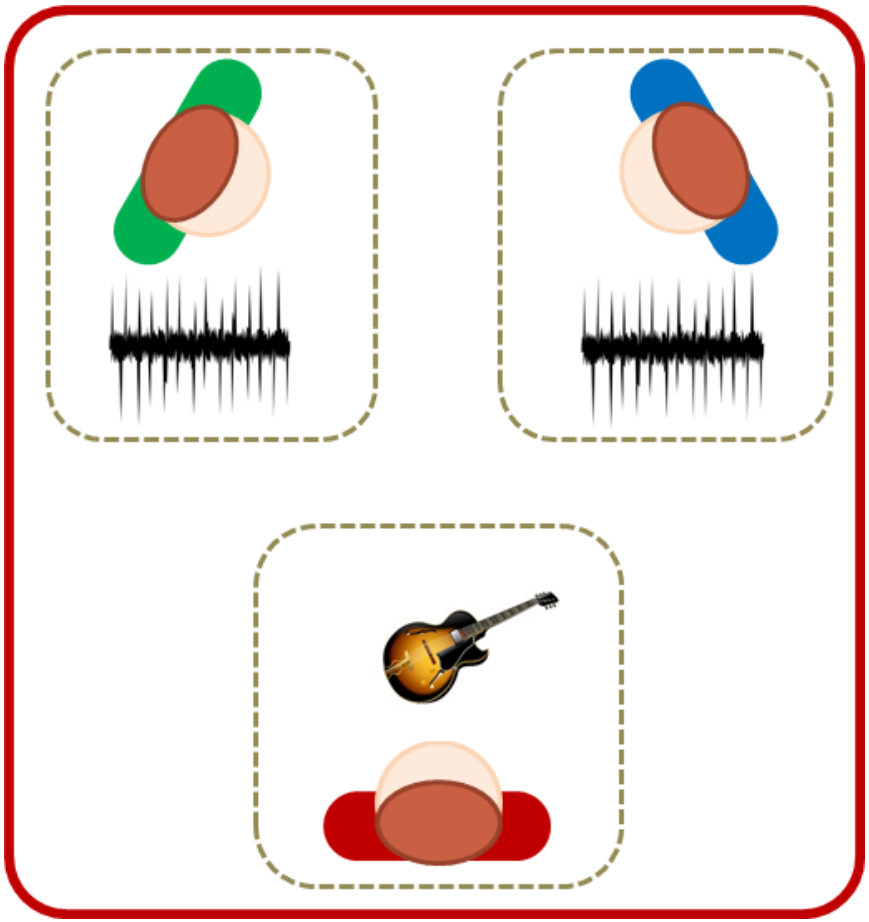
http://en.wikipedia.org/wiki/Mixing_console

The Motivation

What about a metaphor that allows a single musician to **compose by playing, mixing and recording** his instrument simultaneously?

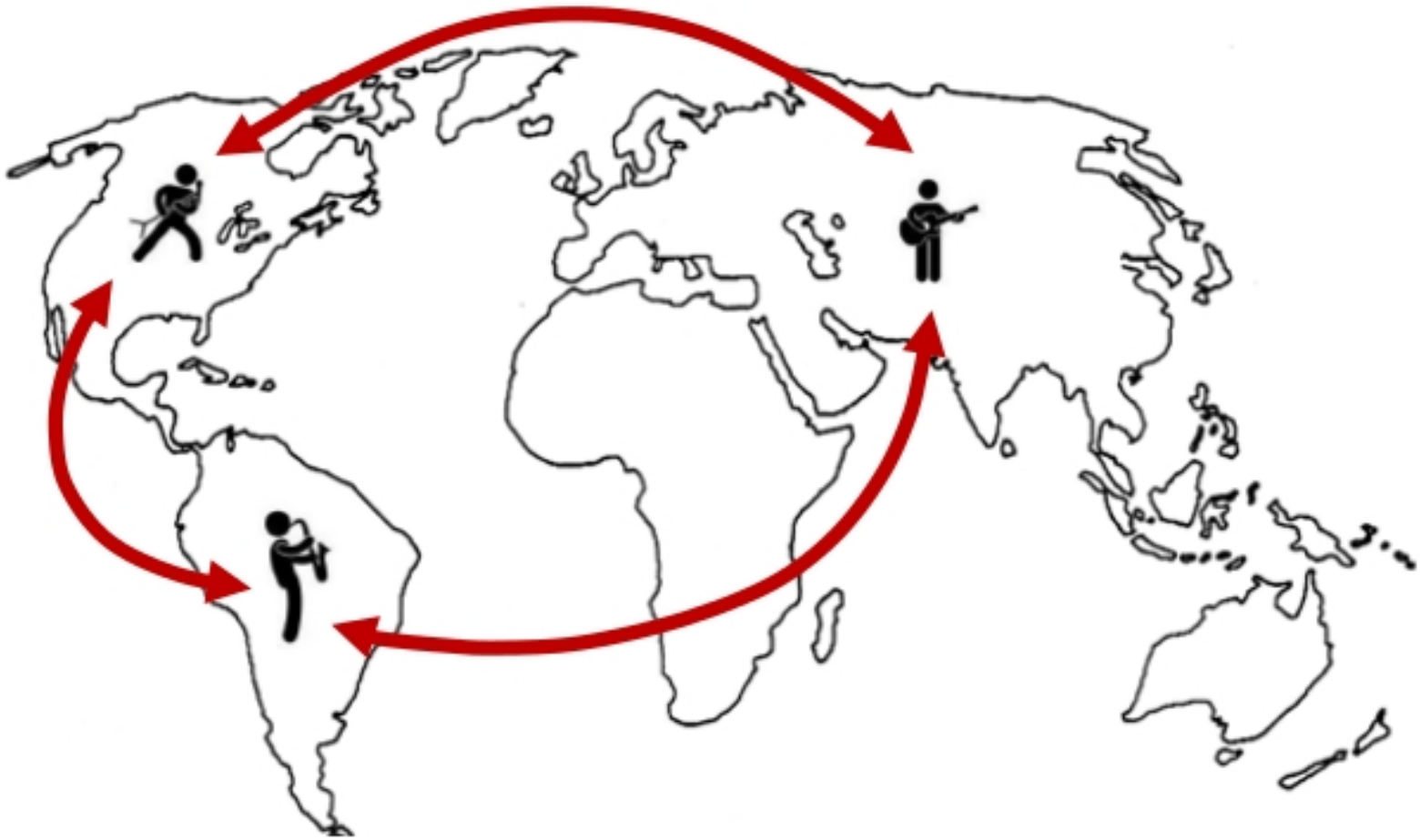
The Solution

The Band Performance Metaphor



Preliminary Work

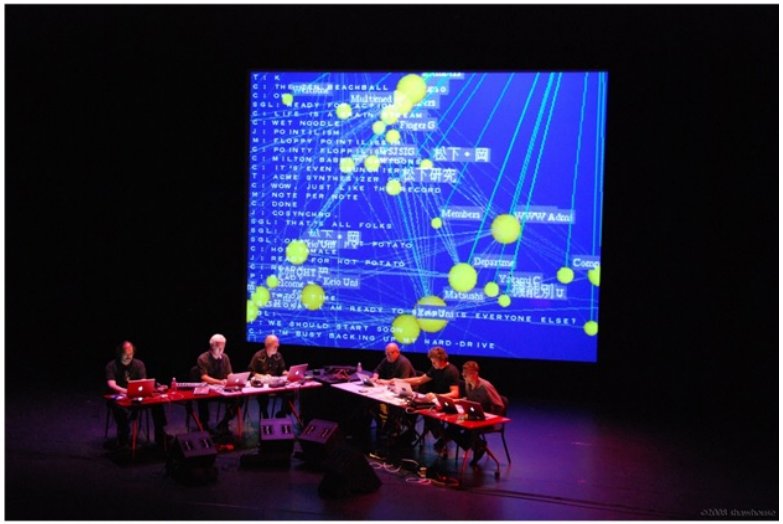
Network Musical Performance



Existing systems

Terena Networking Conference (https://tnc2014.terena.org/web/media/news/id/3420)

Braasch, Van Nort, Oliveros, Krueger (http://kyky.org/mag/tech/networked-music-performances)



The Hub (http://networkmusicfestival.org/programme-2/performances/the-hub/)

The Network Music Festival (http://networkmusicfestival.org/)

Motivations

How can we effectively augment Network Musical Performance?

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Design Objectives

- Increase the level of interaction between the distributed musicians
- Capitalize on behaviours already exhibited by musicians rather than introduce new paradigms
- Apply user-driven methodologies throughout the process

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User-Driven Design Process

Techniques included:

- Observations
- Personas
- Interviews
- Iterative Prototyping
- User Tests

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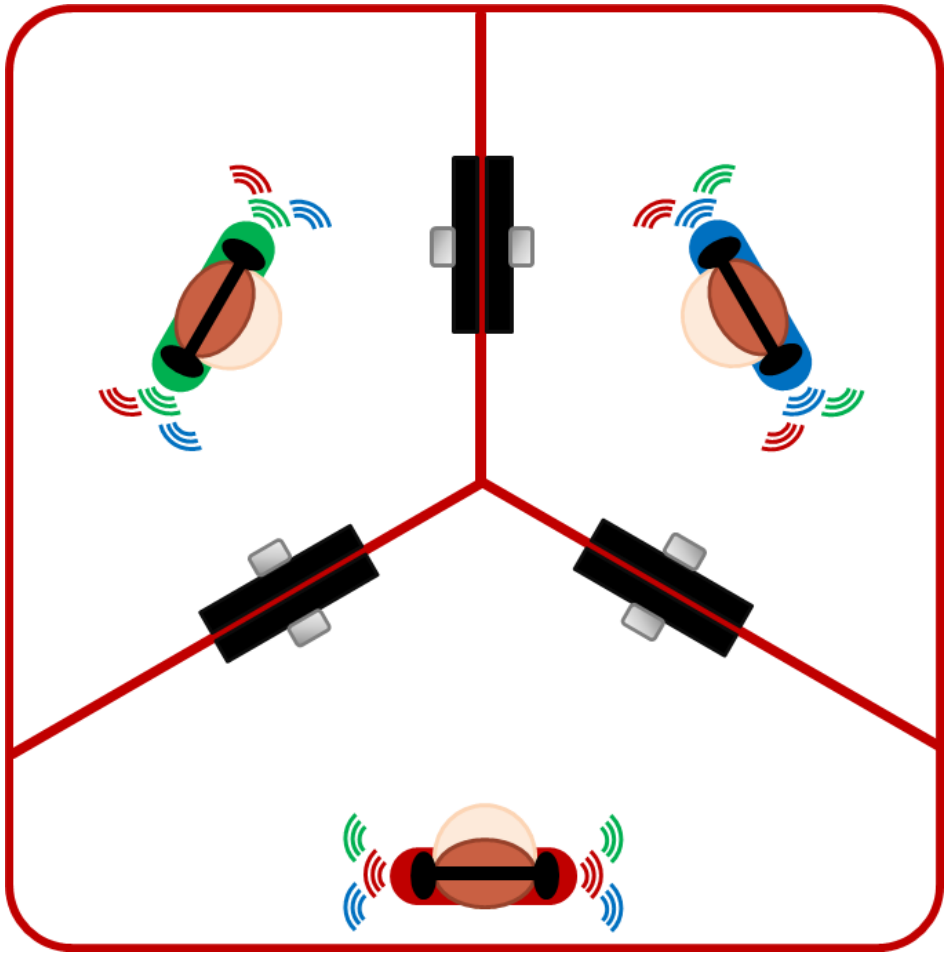
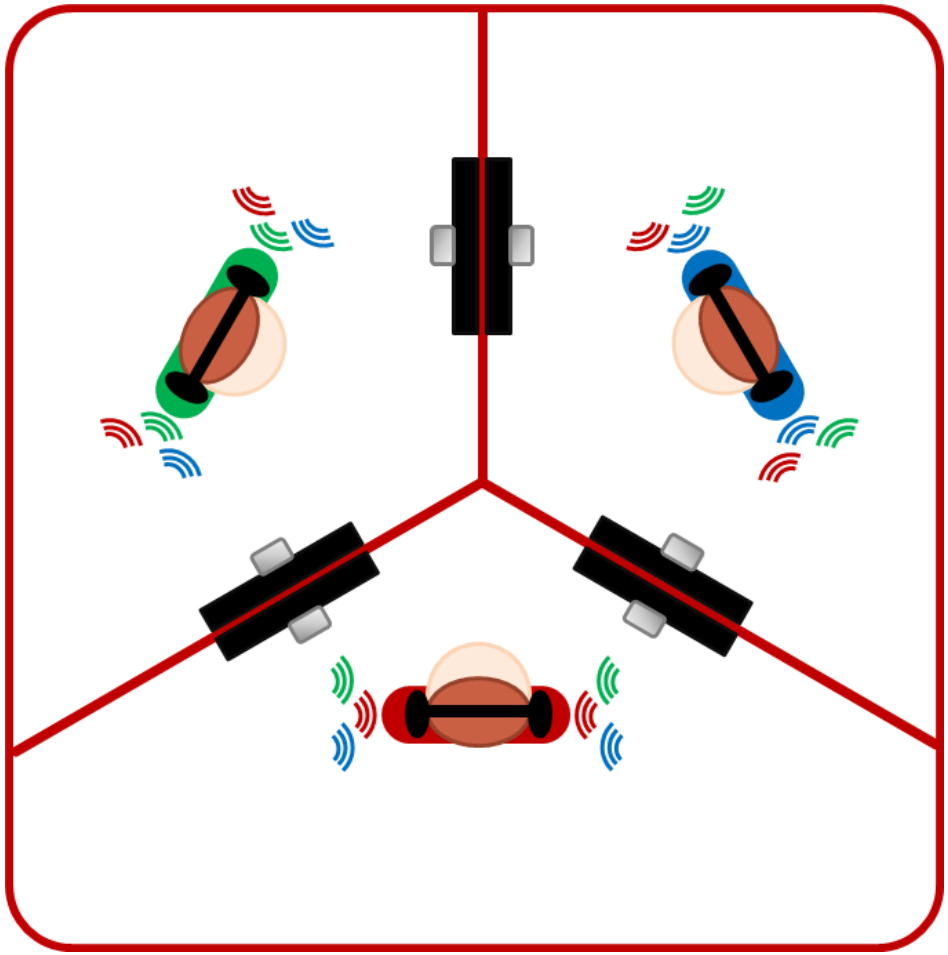
Result

A reactive environment for Network Musical Performance that encompasses 5 unique features

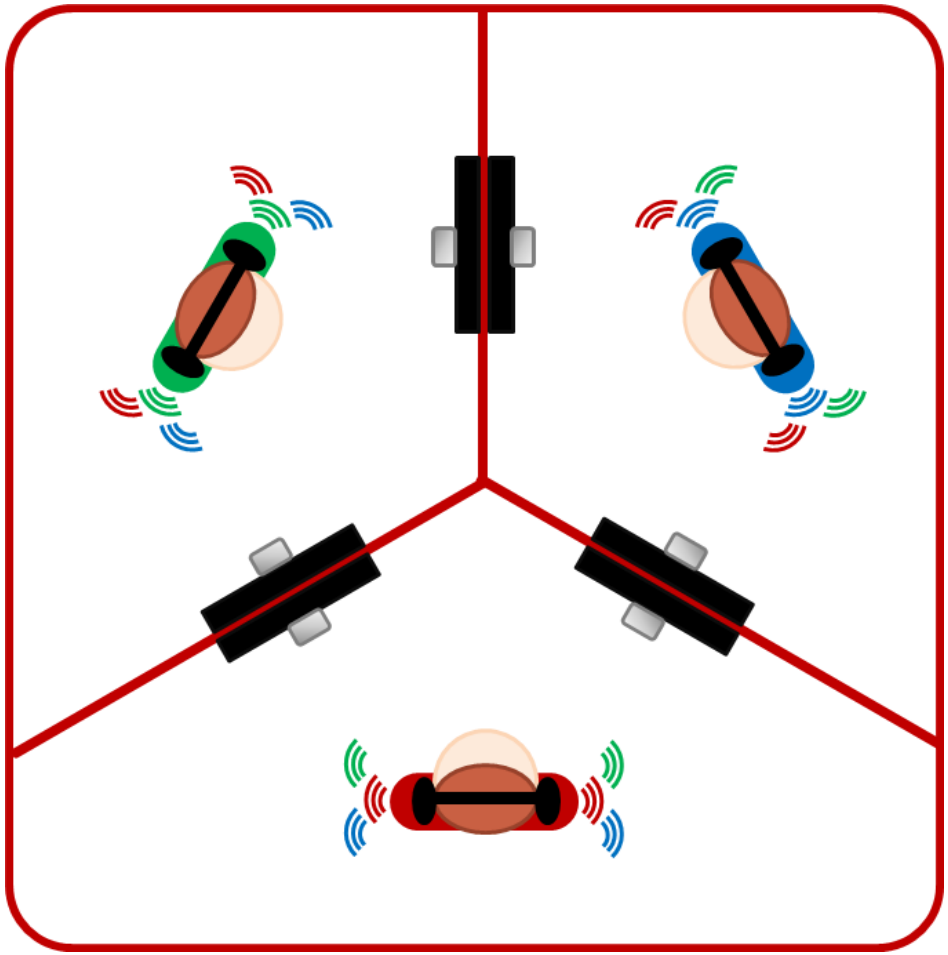
#1: Dynamic Volume



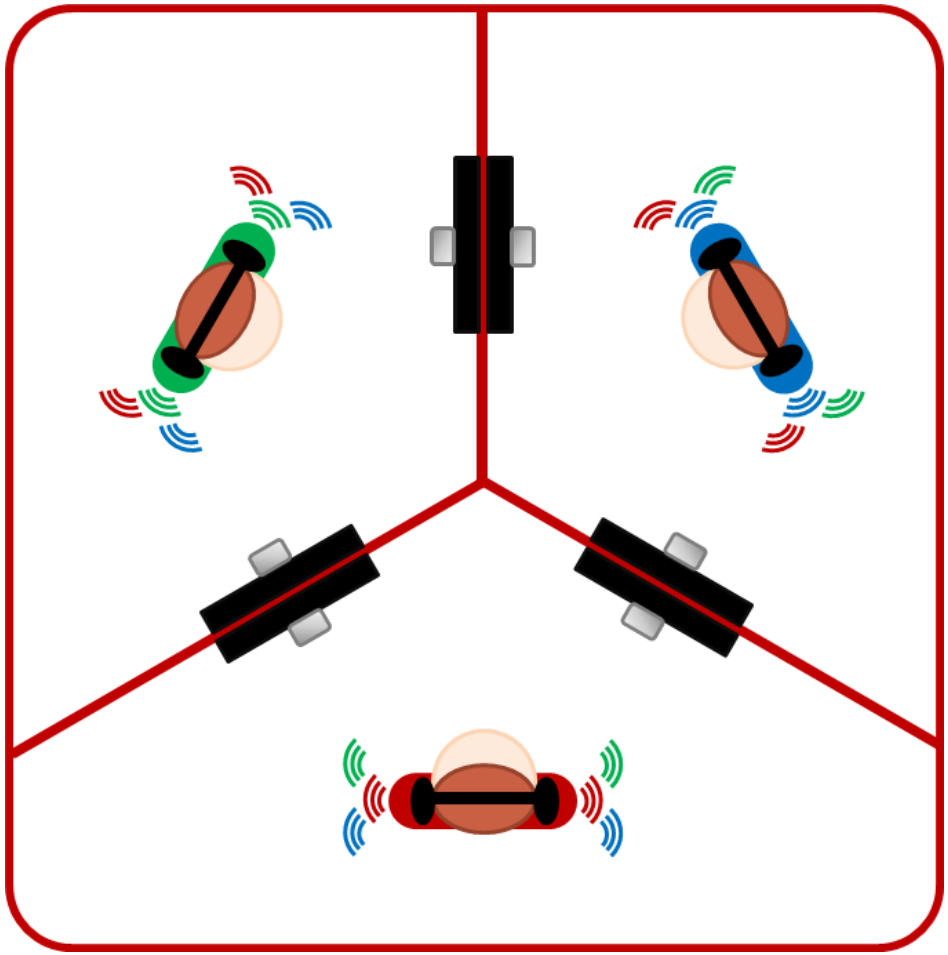
#2: Dynamic Reverb



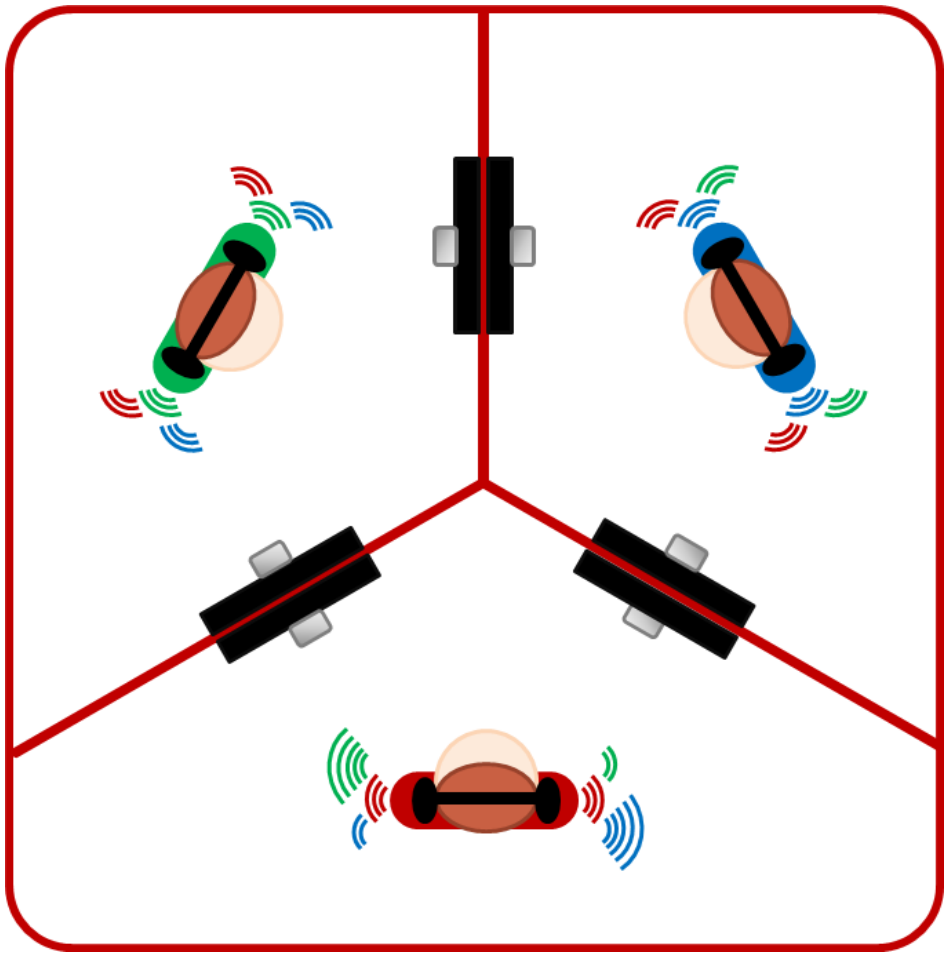
#3: Mix Control



#4: Track Panning



#5: Musician Spatialization



Limitations of User Tests

- Narrow Feedback
- Difficult to evaluate:
  - Novelty factor
  - Long-term benefits
  - Creative potential

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- "Cooperative Prototyping" technique
- Collaboration with Steve Cowan (Musician/Composer/Teacher)
- Weekly sessions lasted 14 weeks:
  - Discussion of latest system iteration
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  - Discussion of suggested system changes
- Post-Session written report

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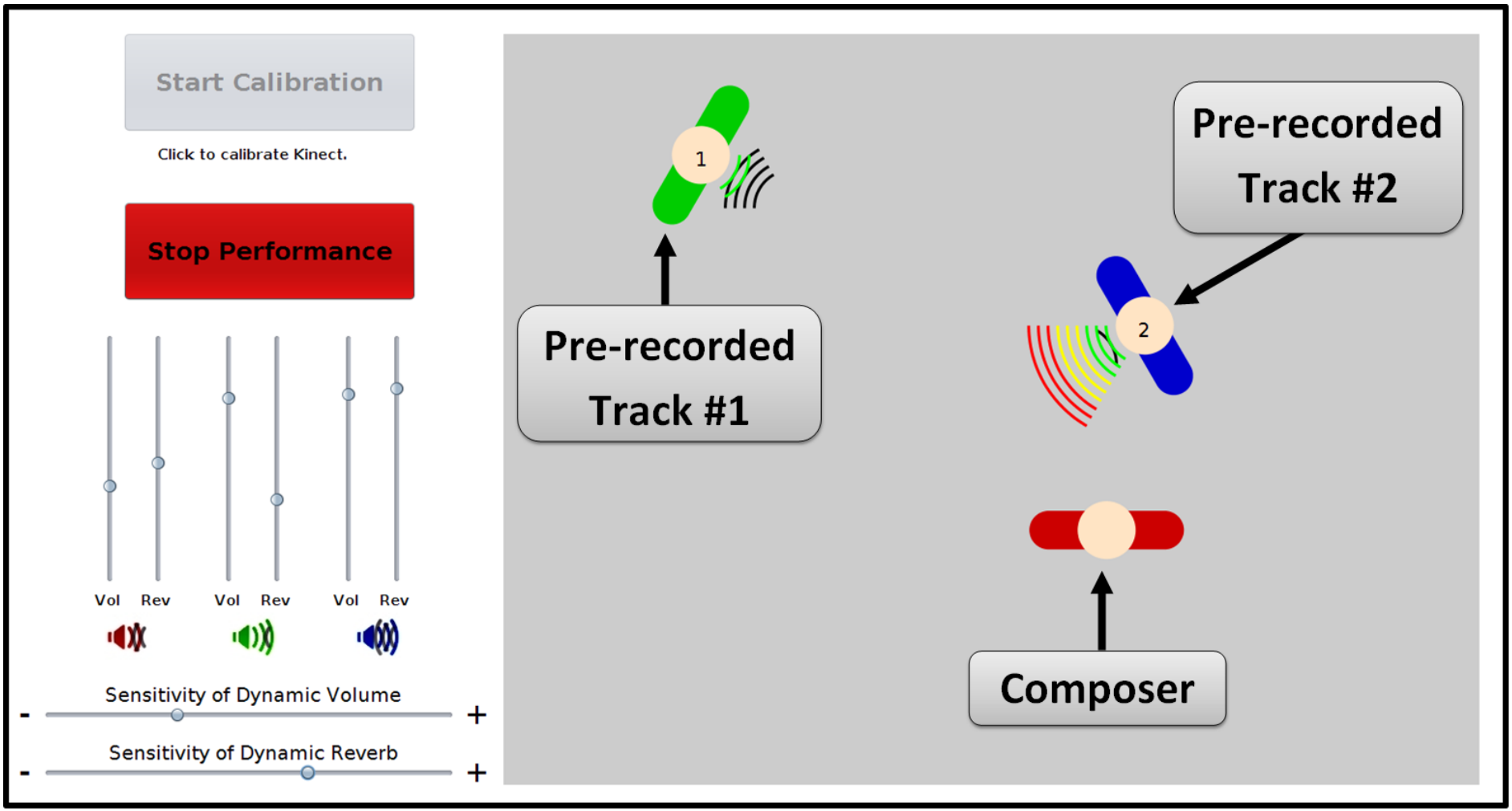
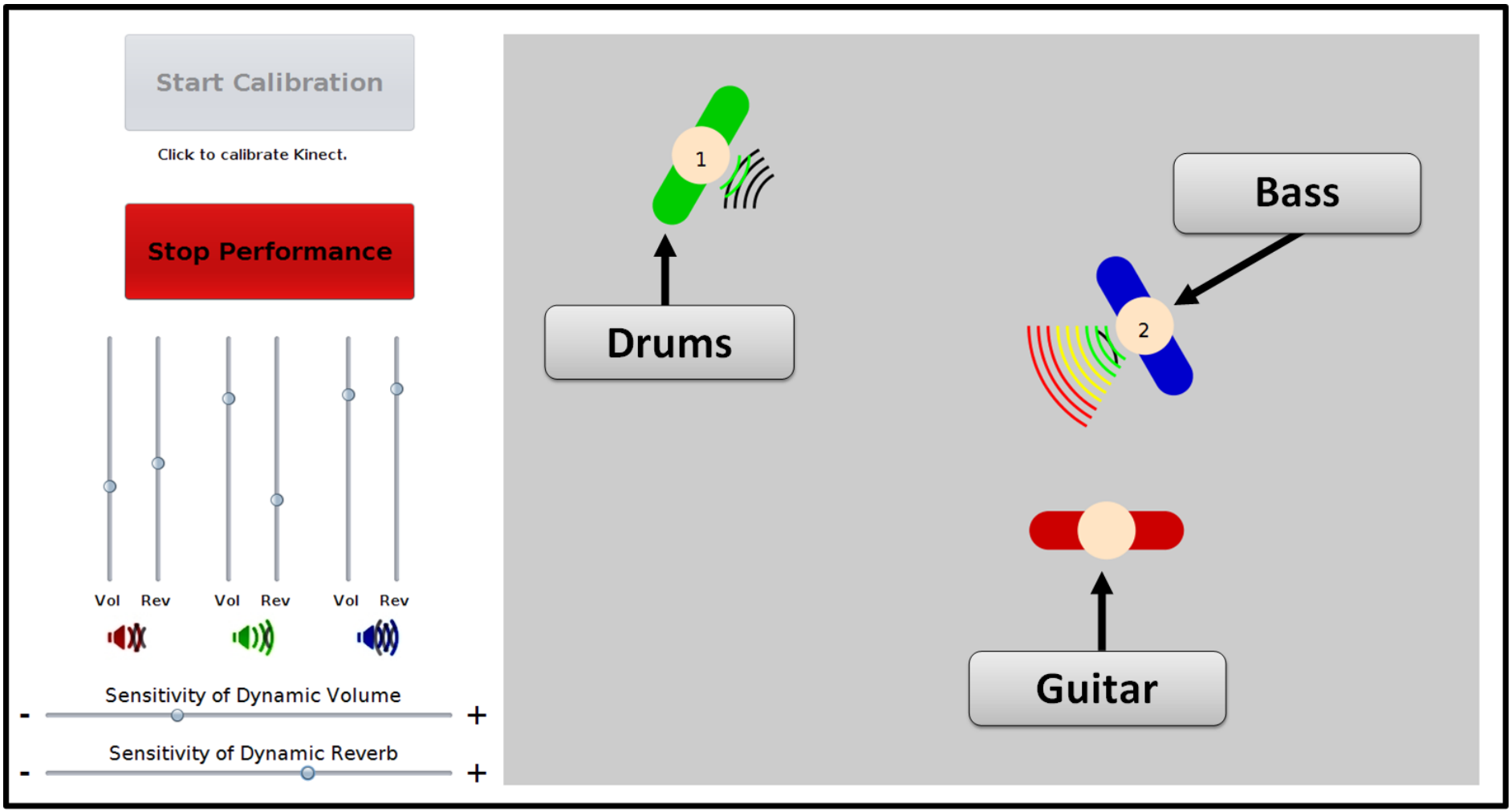
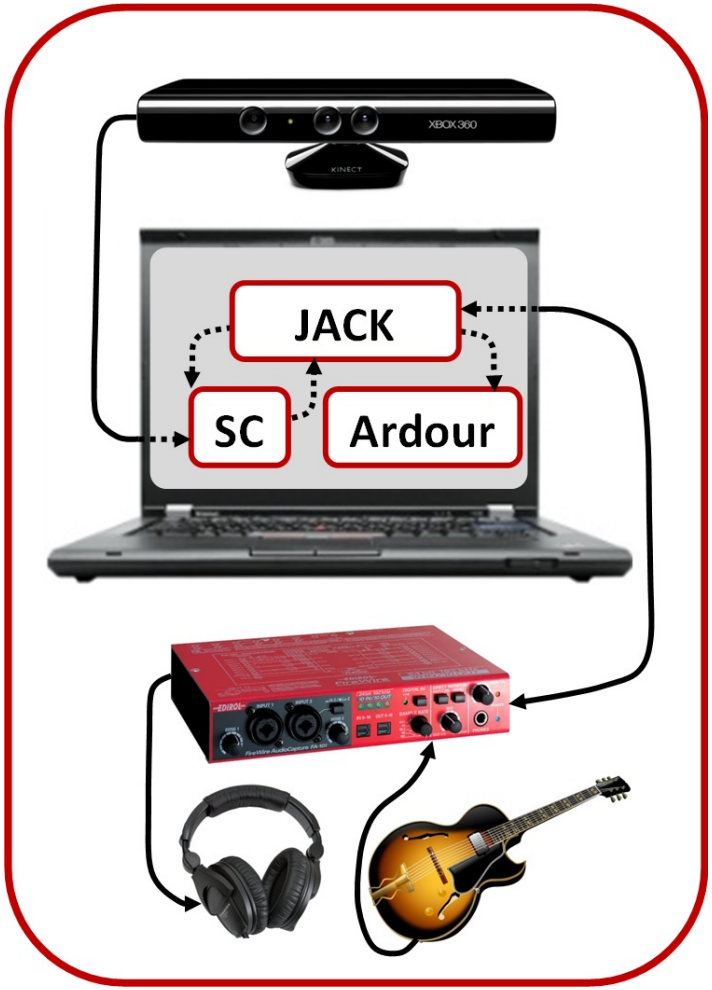


System Features

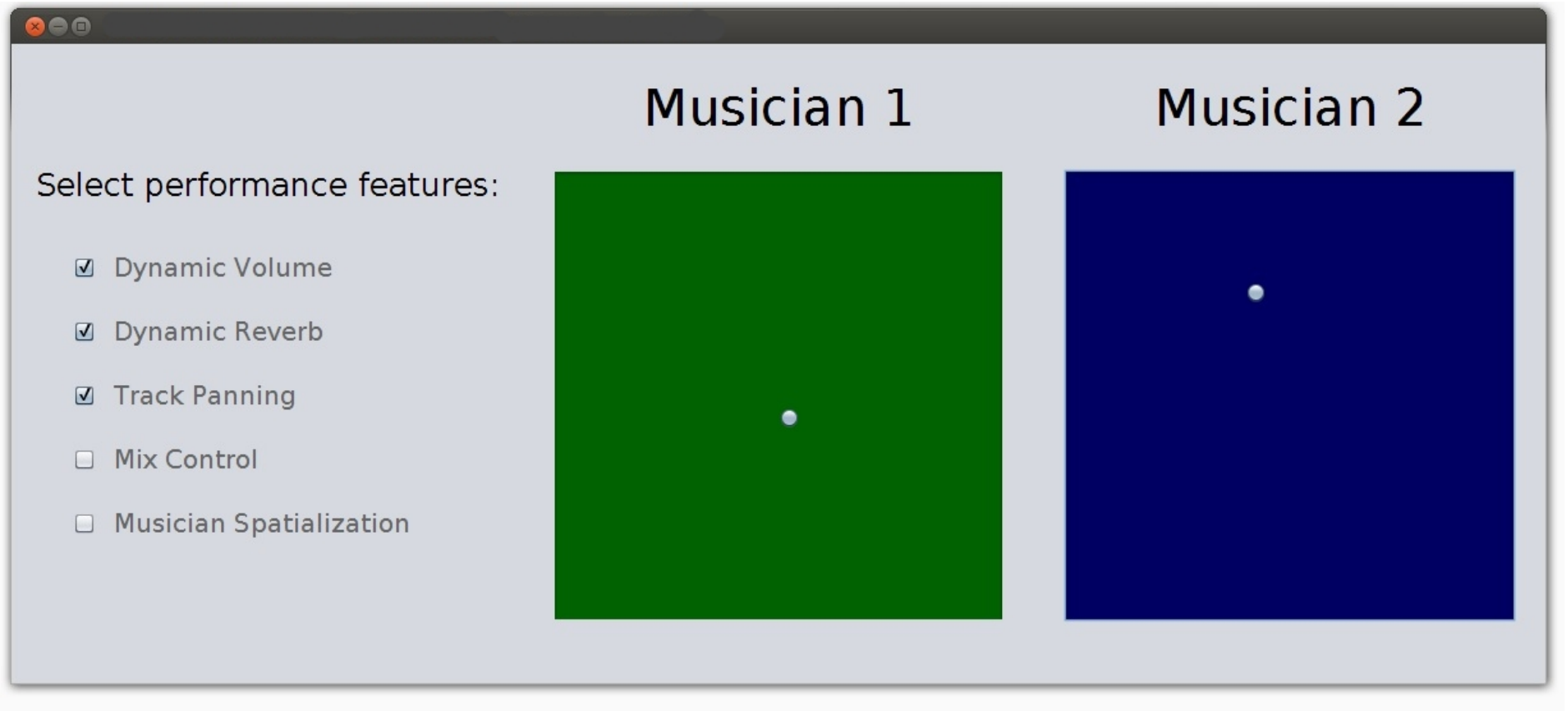


System Features

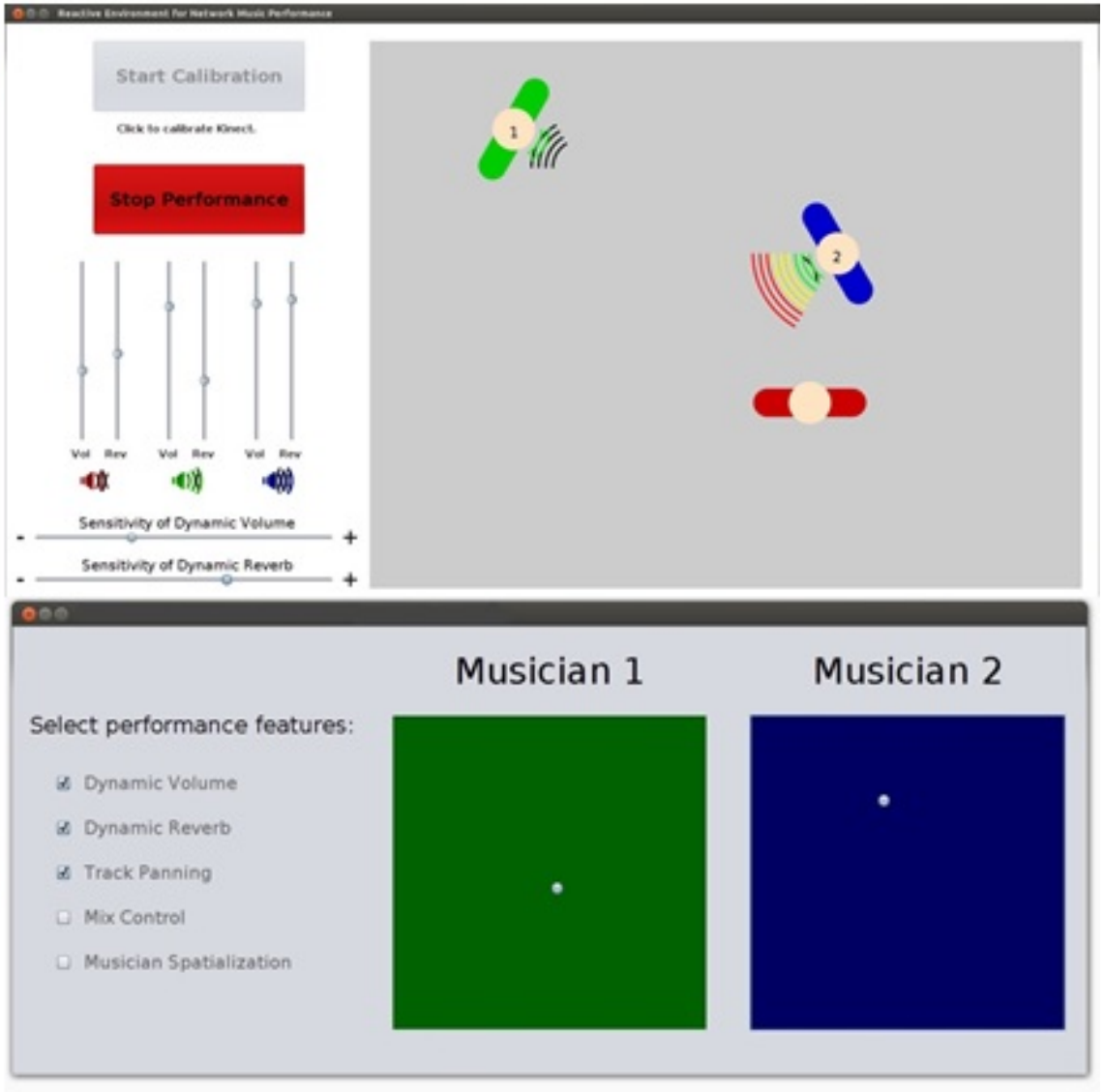
System Configuration



Graphical User Interface - Secondary



A New Tool for Composition...?



Compser's Feedback

"I find all the clicking and computer-based activity... to **drain** *my creative energy and make the process* **frustrating**.*"*

- Steve Cowan

Compser's Feedback

"I was able to get some great solutions for these issues without having to do anything other than play my music in real time, and move my body a bit."

- Steve Cowan

Compser's Feedback

"I was able to hear which textures were better off in the foreground, and which sounded better off more "distant", perhaps with a hint of reverb"

- Steve Cowan

Compser's Feedback

"In conclusion, the features that this system offered were fun, useful, and helped me come up with new musical and production ideas."

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Criticisms

- Lack of precise, numerical representation
- System currently supports 3 tracks only
- Some features not suitable for seated musicians

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Future Work

- Investigate alternative gestures for seated musicians
- Broader formal user studies
- Support additional tracks
- Investigate additional features

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Try it out for yourself!

Download package and instructions at:

www.github.com/delshimy/REMC

Send questions or comments to:

delshimy@gmail.com

Thank you!

Questions?