

# Designing Pitch Control



A multimedia instrument by Marcus Lyall.  
Programming and interaction design by Evan Raskob.

Design document created by Evan Raskob.  
Jan. 31, 2010

<http://mlstudio.co.uk>

# Contents

- 1. About Pitch Control**
- 2. Goals and Audience**
- 3. User Interaction Diagrams**
  - 3a. Overview**
  - 3b. Note Playing**
- 4. Setup:**
  - 4a. Projection Mapping System**
  - 4b. Image Masking**

# About Pitch Control



Pitch Control is a multimedia instrument created by Marcus Lyall, with the assistance of Evan Raskob.

Pitch Control debuted at the Dana Centre (part of the Science Museum in London) as part of the 2009 Takeaway Festival of Art and was partially funded by the Arts Council England.

Exploring the relationship between installation art and performance, Pitch Control placed the control of a choir of amateur singers in the hands of willing participants in a gallery setting. Playing notes on a piano keyboard triggered recorded clips of people singing the notes. Additionally, participants could save their performances, which were played back automatically when no one was playing the instrument.

# Goals

The central concept of Pitch Control is control over image, and the perception of control experienced by the participants - both those whose images appear in the video clips and those who participate by playing the instrument in the gallery setting.

From a design standpoint, it is important that people are engaged by the experience of playing the instrument, and also watching others play the instrument.

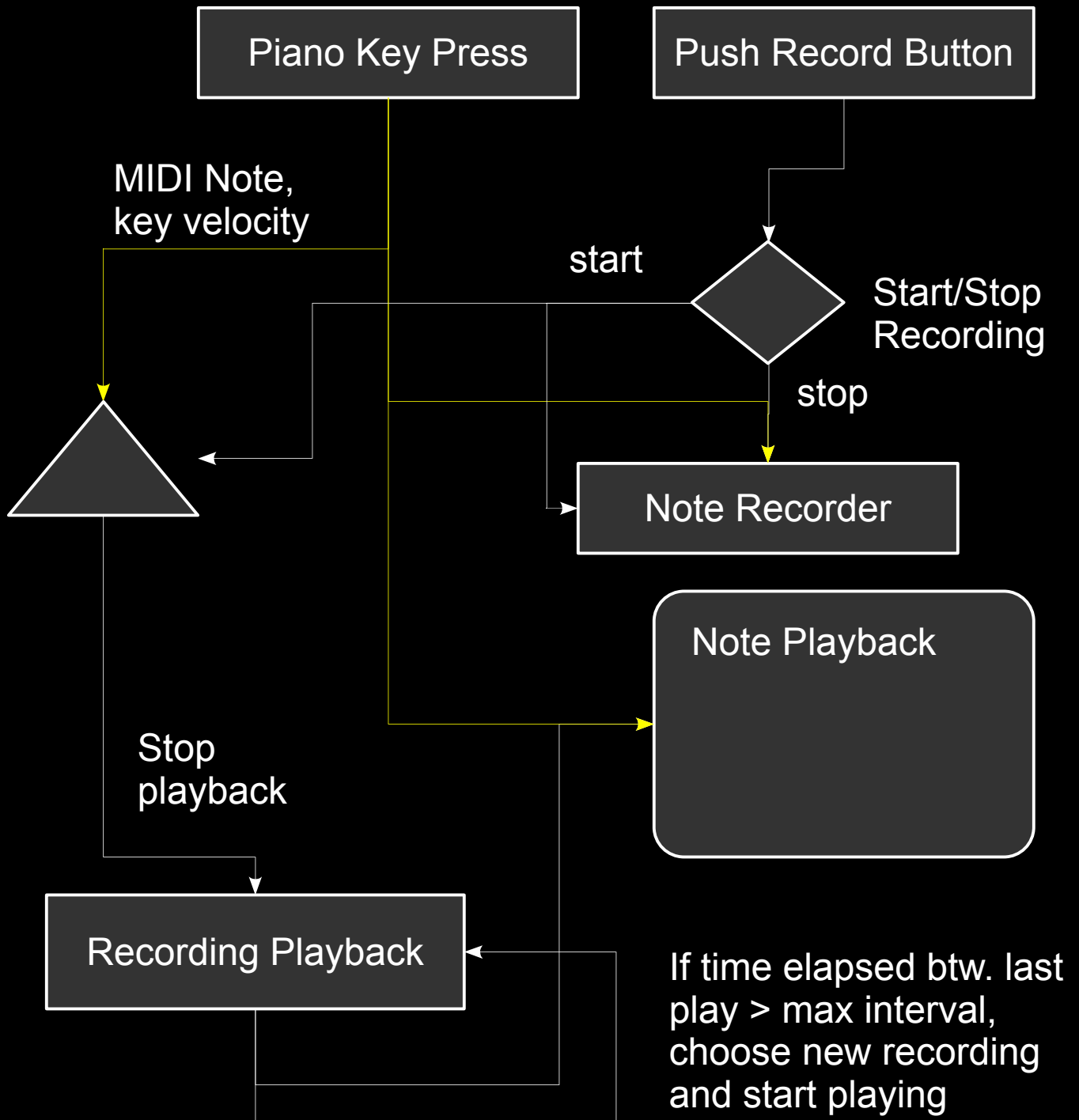
The instrument should accommodate many people simultaneously, including those who are not familiar with keyboard-based instruments.

They should feel motivated to contribute to it by recording their performance. The recording system should be simple and visible enough that it can be used with few movements, and in the dark.

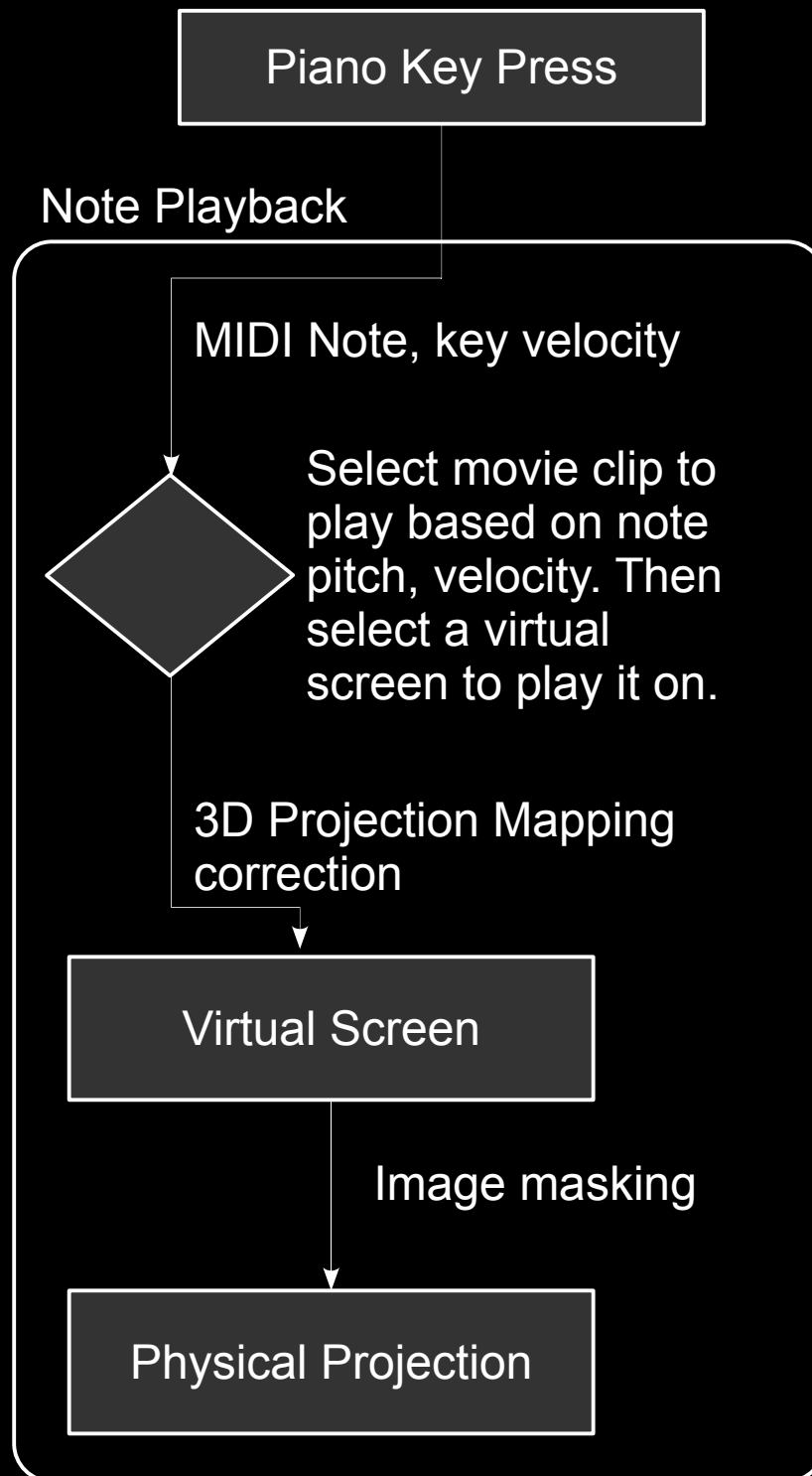
# Audience

Pitch Control should be engaging for all audiences, from children to adults. Our aim is to reach a gallery audience that appreciates art, but is not limited to such an audience.

# Interaction Diagram: Overview



# Interaction Diagram: Playing a Note

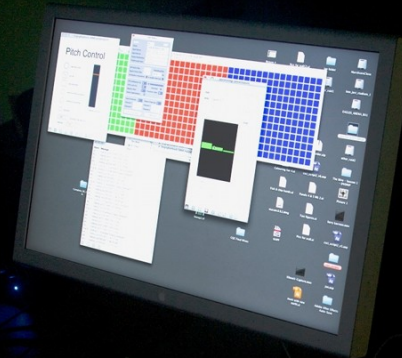


# Setup

## Projection Mapping

Pitch Control uses a sophisticated 3D projection mapping software system, where each video clip is internally projected onto a 3D video screen that corrects for image distortions caused by projecting onto a collection of physical, tilted screen surfaces.

Each internal virtual screen is adjusted manually (3D tilt, scale, 3D position) using a reference grid image (seen here on the right) and the settings are saved.



# Setup

## Image Masking



In addition to the projection mapping, using the software to mask the projected image allows us to project onto irregular shapes and surfaces without any lighting spillover.

Masks are created in the final exhibition space using an image editing program such as Photoshop.