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## AV Zones – Tablet App for Audiovisual Performance

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**Abstract.** We have identified potential for tablets to be used as stand-alone tools for audiovisual performance, and not simply as controllers, due to their portability, expressive capabilities of multi-touch, and processing power. To explore this potential, we have developed AV Zones (AudioVisual Zones), an iPad app for audiovisual performance. In a preliminary phase, we conducted interviews with audiovisual performers and a workshop, to understand user needs and desires. We then developed AV Zones, an iPad app for audiovisual performance, composed of an audio sequencer/looper with a visualizer. It explores the interactive potential of a touch screen tablet for integrated musical and visual expression. By default, 3 audiovisual columns or “zones” allow for the manipulation of 3 audio loops. These zones are metaphorical adaptations of channels in a standard audio mixer.

**Keywords:** audiovisual, multi-touch, tablet, multisensorial, touchscreen.

### Introduction

The popularity of multi-touch tablets, particularly since the introduction of the Apple iPad in 2010, have led to the development of numerous applications for music performance. Tablets are sufficiently powerful to run audio applications, and relatively affordable. Coupled with the immediacy of multi-touch, they can offer simultaneous interaction capabilities to musicians that go beyond what a laptop with a trackpad can offer. Although touch screen controllers for music such as the JazzMutant Lemur predate the iPad, the affordability of the iPad, and its processing power for audio made it a popular choice for musicians since its launch. Lemur itself has been ported to iPad (<https://liine.net/en/products/lemur/>), where it competes with other popular touch screen controller apps such as Touch OSC (<http://hexler.net/software/touchosc>). Reactable, a self-contained instrument, is another notable tangible music tool to have been ported to iPad, among other devices (<http://reactable.com/mobile/>). The field of tools for audiovisual performance targeting tablets is less varied than the field of tools for music performance. Few apps (tools or art pieces) for tablets aim to be used in a performance context for both audio and video output. Notable exceptions are Variant and its predecessor Thicket (<http://intervalstudios.com>), and Takete (<http://refinedstochastic.com/takete.php>). Due to the portability, expressive capabilities of multi-touch, and processing power, we have identified potential for tablets to be used as stand-alone tools for audiovisual performance, and not simply as controllers for other devices. To explore this potential, we have developed AV Zones.

### Previous Work

In a preliminary, ethnomethodological phase, reported in Correia and Tanaka (2014), we conducted interviews with 12 audiovisual performers, asking them about their practice, the creative tools they use, their needs and desires as performers. This brought forth a series of key issues we retained as important for live audiovisual performance: modularity, flexibility and reconfigurability; ease of hardware/software integration; instrument-like expressivity and fluidity; integration of environmental elements; generative capabilities and diversity; communication of process to the audience; reliability and speed. The ideas from the interviews then informed a brainstorming workshop, with 19 participants. The five breakout groups produced five sketches of procedural audiovisual performance tools. Two were particularly successful in addressing the challenges set out in the workshop. Both rely on the expressive potential of multi-touch interaction, employing different solutions for reconfigurability: the former allows for loading and manipulating vector graphics, and the latter adopts a simplified data-flow mechanism for customization. The key issues identified from the interviews and sketches from the workshop influenced the design and development of AV Zones.

## AV Zones

AV Zones (AudioVisual Zones) is an iPad app for audiovisual performance, composed of an audio sequencer/looper with a visualizer. It explores the interactive potential of a touch screen tablet for integrated musical and visual expression. By default, 3 audiovisual columns or “zones” allow for the manipulation of 3 audio loops. These zones are metaphorical adaptations of channels in a standard audio mixer. Each zone had 3 XY pads for audio manipulation: pitch shift, delay and filter. Each zone has its own sequencer as well. A visualization of each sound is overlaid on to the respective zone. There are 9 sounds available per zone, which can be replaced. Performing different gestures on each XY pad creates different results. The application is scalable: the number of zones, XY pads and sounds can be modified in the code. In a performance, only the iPad is used for audiovisuals: the visuals from the iPad are projected behind the performer, and the sound comes from the iPad as well. What the performer sees is also what is projected on the screen. The interface is shown in the screen, allowing the audience to better understand the performer’s actions (figure 1; video: <https://vimeo.com/144976072>). AV Zones has been performed at: MonoShop opening, Berlin (May 2015); EAVI XIII, Amersham Arms, London (October 2015); VJ London, Juno, London (December 2015); and Seeing Sound, Bath (April 2016). AV Zones is open source and work in progress, built with openFrameworks and Maximilian add-on. The app is still being finalized, and will be submitted to the App Store within a few months. Meanwhile, the code is available on GitHub, and the app can be side-loaded manually on an iPad using Xcode 7 (<https://github.com/AVUIs/AVZones>).

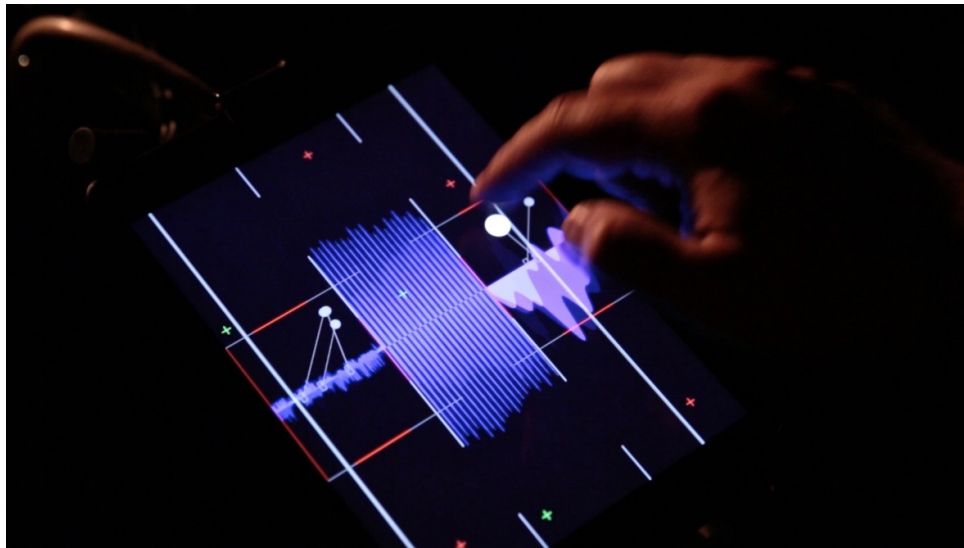


Figure 1. AV Zones

## Biography

Nuno Correia is a researcher, media artist and musician. He is interested in enabling interactive multi-sensorial experiences. Since 2000, he has been teaching and conducting research in media art and design, in universities in Portugal, Finland, Estonia and the UK. Nuno holds a Doctor of Arts degree in new media from Aalto University (Media Lab Helsinki), with the thesis “Interactive Audiovisual Objects”, and an MSc in innovation management from the University of Lisbon. Currently, he is a researcher at Goldsmiths, University of London (EAVI group), working on the project “Enabling Audiovisual User Interfaces”. Nuno’s work has been presented in more than 20 countries.

## References

Correia, Nuno N. and Tanaka, Atau. 2014. User-Centered Design of a Tool for Interactive Computer-Generated Audiovisuals. *Proc. 2nd ICLI*. Lisbon.