

A Sense of Surrounding: A Participatory Soundscape

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Figure 1: Public screen QR code (left) and mobile screen with instructions.

Abstract— We describe the development and deployment of “A Sense of Surrounding”, a collaborative architectural soundscape experience.

Index Terms— Collaborative, Soundscape, WebAudio

I. INTRODUCTION

Scholars and musicians like José Maceda have criticized the division of roles in music activities—performers taking an active role, audiences being mostly passive—promoted by modern western societies. In one of his works, *Ug-nayan*, Maceda coordinated inhabitants of his native Manila to take their radios to the street, creating a massive urban landscape [1]. Like Maceda, we wanted to challenge the traditional western way of creating, performing, and experiencing music and sound, this time, focusing on an architectural space and using web and mobile technologies.

II. DESIGN AND IMPLEMENTATION

A Sense of Surrounding was developed during an event called “MTF Labs Aveiro 2022: Ecosystem Living” (<https://mtflabs.net/>). This was a whole week conference and hackathon, and included sound recording field trips to salt ponds and beaches around the city. We used the theme of the conference as inspiration and aimed at eliciting the feeling of being part of a living ecosystem that is experienced through its soundscape. As the project was meant to be presented in a conference hall to an invited audience, we also wanted to explore the possibility of “collaborative architectural sound design” using mobile phones to create a *distributed speaker array* [1]. The collection of sounds used in the soundscape included field recordings as well as spoken sentences contributed by event participants. We later edited these contributions into single words, deconstructing the original sentences to break the original semantics while maintaining human sound elements in the landscape.

We built upon previous experience building collaborative music experiences [2], using a similar architecture (Figure 2). A public display was mainly used for sharing initial instructions and a QR code for easy access, while a PA system is used to supplement the soundscape with low frequency sounds, impossible to produce with mobile phones. Behind the scenes, a Node.js/cloud application orchestrates the whole experience, with sound clips stored in cloud storage. A second web application, the *Orchestrator*, is used to guide the experience, and runs on a facilitator’s device (mobile or otherwise).

We think that simplicity in the interaction is key in collaborative applications like this. When a participant scans the QR code, a client web application loads on their phone with a simple instruction: “Please turn the volume up and tap me.”. After tapping on the screen, a final instruction is then displayed: “Now find a place in the room and place your phone there” (Figure 1, right). At that point, every participant’s phone has become one element in the speaker array. The Orchestrator then takes control the array, triggering sounds and creating a 3-dimensional soundscape made of tiny sound sources. Participants are then free to walk around the room and explore the soundscape they helped creating.

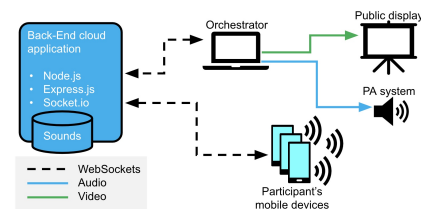


Figure 2: System architecture.

III. ACKNOWLEDGMENTS

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IV. REFERENCES

- [1] B. Taylor, “A history of the audience as a speaker array.” in *NIME 2017*, 2017, pp. 481–486.
- [2] J. P. Carrascal, “Count-me-in: A collaborative step sequencer for audience participation.” in *19th Sound and Music Computing Conference*, 2022.