Games in Concert

Introduction

This project aims to explore the possible influence of game mechanics on collaborative music making in a virtual reality environment by blending the setting of a concert with elements known from game design. The musicians play on virtual instruments in a VR environment. They create and perform music that is represented through objects which visualize their musical content in real time. The position of these objects in the VR environment is displayed through surround sound for the public and binaural mix downs for each musician. A game jockey leads the way through this VR environment as a virtual player, while the public can listen and observe his movements on a screen. During the performance the public can play mini games to interact with the musicians through the game jockey.

Output

The research project Games in Concert explores the possibilities of a new concert format where collaborative music making and game design get intertwined. This might lead to a fresh view on the current relationship to new media and foster social interaction among musicians and designers. The final results will be put into a catalogue of guidelines, providing Collaborative Virtual Environment (CVE) developers, musicians and game designers with new insights regarding collaborative virtual environments.

Audience Experience

During a normal concert situation the audiences experience is usually limited to listening. However, special moments can emerge when for example the musicians ask the audience to sing along or invite them to the stage. During such occurrences the audience ceases to be mere spectator and becomes an active part of the performance. With Games in Concert the audience is not only "on stage" but can participate in the creative process by playing the proposed mini games. This setting is designed to encourage this intimacy and strengthen the connection between audience and musicians.

• There is an area reserved to the musicians. Each of the musicians has a VR-Headset and controls a virtual musical instrument.

Concert Situation

- Behind the musicians a projection shows the point of view the Game Jockey has in the virtual world.
- Eight loudspeakers, which are positioned in a circle around the audience, will provide accurately spatialized sound matching the point of view of the Game Jockey in the virtual world.
- The Game Jockey is located between the musicians and the audience and has a station with a screen, from where he can control his position within the VR world.
- There are different markings on the floor, that are used for various mini games that the Game Jockey conducts.



The audiences prime motivation is to share a unique moment with other fellow spectators in the same room while being able to directly influence the performance. The audience will be able to influence the musicians performance through playing a selection of Mini-Games taking for example following decicions:

 vote for a word the musicians should interpret

Mini- Games

- vote for a musician to do a solo
- vote for the musicians or the GJ to play in the "God-mode"
- vote whether the performance should last an additional minute

For each voting there will be corresponding way of voting. As a side effect of this Gaming Environnement the members of the audience might start to compete or cooperate with each other further heightening the sense of sharing the experience. In any case they start to interact with each other. Furthermore there will be a steady VR-Headset that can be used by one audience member at the time to have an even more immersive experience. To be able to use that VR-station, the audience member has to spin a `wheel of fortune`.

Game Jockey (GJ)

The Game Jockey is the link between the two spaces. He has to have the overview as well over the events in the VR environment as over the events in the real space. Due to this role he will be placed on a pedestal in the middle of the room. He is on the one hand deciding what the audience is able to perceive on the "main stage". He thereby acts as interpreter for the musi-

cians and has to be able to understand and convey the essence of the creative process and taking place to the audience.

On the other hand he has the role of "game master". He has to initiate and lead several Mini-Games which the audience plays, while interpreting its reactions and relaying them to the musicians so they can react adequately.

Soundobjects Interfaces In our VR environment, the musician The musicians have at their disposal starts by choosing a location where to three different interfaces to create play and then chooses a sound. After sound in the virtual environment. As these initial steps a visual object appewith traditional instruments, each inars which represents the sound. terface has its own properties which The musician now can fill this object influence the musical output. They with musical content. That content is are conceived as instruments for VR displayed by and around the object viand not trying to emulate any traditisually while the object also represents onal instrument. the position from where its sound is heard by the musicians and the public. Touch (ROLI Seaboard): The ROLI Therefore, it can also be described as Seaboard is a new MIDI-Keboard a sound source. interface which has unconventional characteristics and possibli-When the musician has shaped and ties through its 3D touch surfce.

- Paint (VIVE Controller): The VIVE Controller can be used to literally "paint" sound.
- Sculpt (LEAP): The LEAP is an interface which can locate and interpret hand movement, mking it possible to "sculpt" sound and music directly with your hands.



he can leave it and create another one at a different location. Furthermore, these objects can be moved, muted or parameters they contain can be copied and reused when creating new objects.

filled an object with musical content

That way the VR environment is constantly filled and shaped by objects created by the musicians, creating a dynamic audio-visual experience.

Musician Experience

6

In the real world our actions are influenced by what we perceive, this is equally true for a virtual environment. In our case, what the musicians decide to create is partially influenced by their own perception of the space around them. What distinguishes the real space from the virtual is that within the latter every aspect defining it can be changed in real-time. The musicians create and shape the VR environment, its contents and mood through their actions. This gives rise to a self-reinforcing feedback loop: The creative output results in change of the space and thus the perceived stimulus which in turn modifies the creative process. The additional stimulus created by the actions of the audience and the GJ further

diversifies the musicians actions.