**Concept Interface Design**

As discussed earlier in the Project Plan, we will provide whole range of different interfaces. These are the voice commands, the GUI configuration window and the world itself.

**The World**

The world around the user or to be more precise, the field of vision of the Kinect-sensor that is mounted on the head of the user is the interface for sound manipulation. The colours seen by the sensor are translated into sounds. The user has control over the sound produced by ‘looking’ at or walking towards colourful planes. The user has control over how many parts of the image are generating colours, in the range between 3 and 7 in steps of two. Thus 3, 5 and 7 are available choices.

Furthermore, the user is able to decrease the size of such a part from which colour information is generated by using the “zoom” parameter.

A few simple pictures illustrating how the sensor will see the world are presented later on in this document.

**The Voice commands**

Once the user has started using the device it is important not to break the flow of the interaction by requiring any change to be made on the computer with a mouse and keyboard. Which would require the user either to walk to the computer or to take the laptop out of the backpack that is connected to the device, this seems counterproductive and thus voice commands should be made available to the user.

The commands should be short, logical and be prefixed with a special keyword. The rationale for this is simple, short commands are easier to detect, remember and pronounce. If the commands make sense, are logical or otherwise natural, the learning curve is decreased dramatically since the user is able to make well educated guesses into which words are available to him or her. The prefixed keyword is also important in order to prevent issuing unintended commands.

The possible commands are outlined at the end of this document.

**The Graphic User Interface configuration window**

Whilst the voice commands should provide a nice way of changing the runtime parameters of the device without physical interaction of the user with a machine, we recognize that this is not always ideal. Especially when a user wants to quickly tweak the default parameters before putting on the device or even to experiment with the parameters, fast.

Therefore, the configuration window should not be limited to being a quick configuration option before turning on the device, but should remain functional even during the use of the device. This isn’t hard to implement.

A screenshot of a partially implemented configuration window is included at the end of this document.

**User analysis**

Our users are creative people who are most likely not very technical but are able to navigate modern day technology such as modern operating systems running on computers and smartphones with relative ease. The voice and GUI interfaces should adhere to the usability expectations and mental model of such users and thus must provide easily understandable parameters and controls.

Because our user group is creative people, mainly those who are either musicians or graphical artists, we will not push the implementation of our device into a niche state so that many different levels of interaction should be available to the user. Such as the computer mouse, it can be used for many different ways of interaction with an interface, be it a web browser, a First-Person shooter or a 3D CAD program and is only limited by the way the programmer decided to use it.

**Personas**

*Bert.*

Bert is an art student. He has been tasked with making a modern art piece or exposition that would wow his fellow students and professors. Thankfully, his friend is working on a crazy device that can generate sounds depending on the colours of the environment at which it is pointing.

After thinking about it he decides to arrange a large room so that visitors are able to traverse it in a non-linear order by using movable wall segements. Paintings and posters are applied to the walls and segments, some extra, mood-giving, colourful lighting is also added to the room.

The visitors are given the device and are asked to walk through the room in any way they would like whilst looking at the paintings and/or posters.

Due to the sounds generated by the device, the feel of the room is different for every person due to the way they associate sounds and have traversed the room. The project is a success and Bert is happy.

*Sjaak.* (Something with sound, be it performance or getting inspiration from seeing and hearing things with the device)

Usability testing specification

Interface sketches

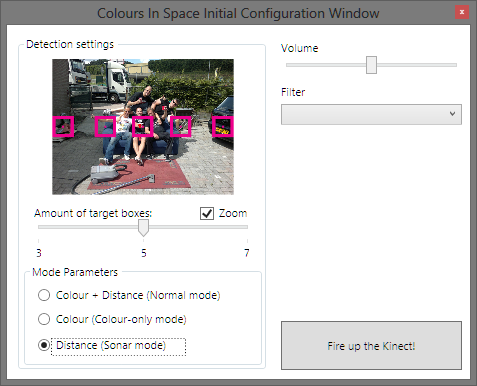


Figure 1: Configuration GUI window

<List of voice commands here>



Figure 2: Illustration of the view of the sensor and the parts from which the color information is processed