**Sound visualization on Fast Fourier transform**

**Objective and requirements**

The purpose of this project is to visualize the real time input of the sound on the IO-shield display, by using FFT.

Requirements is that we need to have;

* We have to display frequency amplitude graph.
* Also an time amplitude.
* The user should be able to switch between the graphs, with the help of the buttons on the chip-kit board.

Optional features;

* Record the sound and save it to a file when the user push’s the stop record button.
* Save the soundfile on the chipkit.

**Solution**

Most of the code will be written in C and if needed some in assembly code. We will most likely use Kiss FFT to sample the sound and the project will be develped on the chipKit uno32 board together with the Basic I/O shield. The visualization will be displayed on the small display, and with the help of the switches we will be able to swap between the graphs. And we might add the functions for the record sound.

**Verfication**

We will have to verify our algortihm, and check that the algorithm is correct.

We will test our implementation by comparing our graph on the chipkit with an already implemented solution(example audacity).

**Contributions**

We intend to divide the work in the following; Julia will check how to implement and use on the IO shield. Felix will check how the FFT works. Together we will decide how it will display on the IO-shield.

**Reflections**

We will have to start our project first, and then we can reflect and discuss on what we’ve done for the final abstract.