

Context

Sonotone

Reduce the cost a hearing aid device by skipping the professional monthly support

Provide a simple solution to partially deaf people to set up their hearing aid device themselves through an equalizer

Prototype should be available in the next few month based on this initial work

All the documentation about our project can be found on the page «Sonotone», in the Projects 2015-2016 page, on the following website :

air.imag.fr

Sonotone

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Our project

During this project, we have implemented our own signal processing filters that cover all the possible transformation of an audio signal

Live equalizer. In order to improve the experience of the patients, we have created a live audio equalizer that easily enables patients to apply the filters they want at the frequencies they want with the gain they want to enhance their hearing.

How it works

Once the patient has done his audiogram with a hearing specialist, he just has to adjust the frequencies based on his audiogram. The software then applies the correct filters in order to properly modify the signal.

It is furthermore possible to choose what filters to apply on which frequencies with an advanced mode that enables the user to get an even better experience.

To go further

- The user interface could be improved in the future. A live overview of the filters applied could be added to improve the user experience. With such a feature, the user would be able to visualize how the signal is actually modified by the filters he decided to apply.

- Every filters could be improved in the future. As for now, our filters are not as good as professional filters. They are efficient enough for our live equalizer but we still observe saturation and interference on some frequencies. That could be fixed by creating some new filters to apply after our current filters and hence, it is a possible evolution.

- A feature that apply the correct filters directly from an audiogram could be added as well. The raw audiogram would be given to the software and the correct filters would be applied automatically to create the "perfect" correction without having to touch yourself the frequencies and filters.