**App Charter — Listen to the Earth**

*July 5, 2018*

**App Description**

Platform to display visual and auditory seismic data from a specified location and time.

**Need statement**

\* Education and Outreach: Generate interest in the physics of the solid Earth, educate the public and school groups about physics of the solid Earth.

\* Potential tool for researchers, rather than visually representing the seismic data, represent it audially; Can this help researchers distinguish particular types of signals from others; Does it help them to recognized the presence or absence of certain types of signals; Does it help to detect correlations/connections between signals?

**Database**

Seismic data (time series of ground motion in 3 dimensions) will be retrieved from the IRIS Data Management System ([iris.edu](https://urldefense.proofpoint.com/v2/url?u=http-3A__iris.edu&d=DwMGaQ&c=yHlS04HhBraes5BQ9ueu5zKhE7rtNXt_d012z2PA6ws&r=ZyUBF1FHSjunKZCClBuXUCcJEvqLHj4mhg2CiPeQ0rGMy8lHdbOu49ncIIrIkEgC&m=YecBJSUblz1U9LpEOLlTa5qUkD1xI2-RQmqmrAp3iY8&s=SzOTmflmuiM_VV9mrEm5US8InT3qNOQF_PkgoXAmz8k&e=)). The app, written in XCode, will use a Python framework to convert the data into a sound file, which can then be played within the app. The data can also be displayed in graphical form.

**App Product**

\* What will the App look like and what can it do and how does it do it?

**App Usage**

A user can open the app and filter where and when they want to see the data. The visualization will appear once selected, along with a play button, which can be selected to play the audio. Pause, rewind, and fast-forward buttons will also be implemented.

**Project Outline**

• Design of input and output

o Determination of Functionality

o Creation of data work flow

o Determination of output formats (e.g. will the sound be accompanied by visual content?)

• Development

o Conversion of seismic data to audio data

o Editing of input options

o Dependencies?

• Implementation

o Adjustment of layout

o Testing functionality on IRIS’ website

**Schedule**

The estimated time for major data product milestones is summarized in the table below:

by Aug 2: Finish App, make milestone schedule for design, development, and implementation

Aug 3—Aug 13: Testing of App by others (Carlyn, Arden)

Aug 14 - Aug 24: Bug fixes, Adjustments, Improvements, plan for future maintenance

**Development**

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