Initial Development Plan

During the course of the project the requirements changed quite significantly. This is reflected in the evolution of our development plan. Initially we started of with the following plan:

* Before the end of January build a prototype of the hardware with the following capabilities:
    - connect to mobile devices using BlueTooth
    - act as a headset using a built in microphone and bone conduction speakers
* After the initial prototype integrate Arduino Pro in the device and start exploring binaural sound processing

Below is detailed table of our Development Plan:

Date	Plan
5th October 2013	Understand the project and Start Researching the technologies necessary to build the prototype.
5th November 2013	Start building the initial prototype. Our aim is to add a bluetooth module to the microcontroller and get this connected to a computer.
1st December 2013	Add microphone and sound output to the microcontroller. Test the sound output with the bone conduction headphones.
15th December 2013	Start doing the prototype evaluation and testing.
Mid January 2014	Come up with a final strategy in order to make smart scarf a commercial product.This includes methods of making bone conduction transducers.
Mid-End February 2014	Meet with the team for a project re-evaluation. We will see where we stand and if anything need to be changed.

Mid-End March	GIven that all the problems has been solved, start doing the product website and evaluation of our product

Iterations

Due to difficulties such as hardware not arriving on time or arriving incorrectly we struggled to build the prototype we wanted to build. However we have successfully built an initial prototype but afterwards in term 2; we run into complications with the electronics that required expertise beyond what our team could provide. At the start term 2 we finally got given an expert on electronic and electrical engineering discipline.(Dr.Graham Mcphillips).After talking to him about our product, he helped us to re-evaluate our initial prototype. Few week into term 2, we were tryinng to connect a microphone and speakers to our microcontroller. Dr.Mcphilips made us aware that we will need to build a custom made amplifier in order to get this working.He told us that this will be beyond of our team's scope.After discussing with him and Dr.Dean Mohamedally, we came to a final decision.

We decided to change our plan significantly and keep the existing prototype while moving the communication and sound processing layer to the device to which the scarf is connected. This resulted in the following list of packages:

* Build a Node.js server that supports at least 3 clients connected and exchanging sound packets over a TCP connection

* Experiment with interfaces and pick the most suitable cross platform technology to use for the client
    - this resulted in picking Unity since it also helps with the 3D sound processing

* Implement an interface that can play and move prerecorded sounds in a virtual 3D space
* Implement the sound capture and networking layer - capture sound from a built in microphone and send it over a TCP connection to another client
* Combine the networking layer and interface to produce a final version of the client app
* Combine the client app with the scarf prototype to produce a demo-able product

Those packages are represented by the following Gantt chart: