**PROJECT 10 – ORANGE LABS SENSORS API**

**Group Members**
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**Overview**
This biweekly details work carried out for the project as of February 27th. It includes further plans for progress and highlights issues encountered along with the current status of each.

**Timeline/Summary of progress**

- 18th February – Received two hardware components:1 zone controller and 1 sensor unit. [Pending: 5 sensor units, 1 zone controller and 6 battery packs]
- 19th February – Began experimenting with hardware further developing Contiki skills
- 21st February - Cassandra server has been redesigned and is now public
  [Pending: Organisation of incoming data and improving security]
- 23rd February – Code written to download values from database for analytical usage using node.js.
  [Pending: API authentication and integration into applications]
- 25th February – Team meeting to check in on current progress, issues and next actions

**Summary of meetings** *[14/02/15 – 27/02/15]*

For the past two weeks, the team has kept in constant contact over skype in order to avoid any setbacks. The one meeting in person, has been documented below.

Wednesday 25th February – Progress & further actions **[Team meeting]**
*Location: MPEB 1st Floor Labs*
*Time: 12.30pm – 13.30pm*
*Attendees/ Absentees: Johan, Gulliver, Victoria / None*

In this meeting, we discussed what each of us had been doing over reading week and what to do next. Process had been made with developing code for the hardware, as well as developing code for downloading and displaying database values using node.js. We discussed any issues we were having and decided on tasks for the next two weeks.

It was decided that: JOHAN would continue experimenting with the newly acquired hardware and try to create a prototype once all hardware is acquired, GULLIVER will be looking at securing our database and organizing the data within it, VICTORIA will continue working on node.js and look at authentication and integration into applications.

**Next Actions:**

**GULLIVER**

After submitting a request to the UCL ISD, the Cassandra ports on our server were opened last week. With the source files transferred to a common work environment, I continued work on the software backend for the zone controller. This entailed expanding the Java API used to submit queries, and led me to redesign the keyspace in a more intuitive and intelligent way. Following on from the hardware being received, over the next two weeks I hope to resolve any compatibility issues and ensure that the software is optimised for the hardware, resulting in a fully functioning node. Alongside this I plan to look into methods of authentication for secure data transfer.

**JOHAN**

For the past two weeks, I have been focused on developing code for our newly acquired hardware. This meant developing new skills and acquiring knowledge on how to program on hardware and the required setup to connect the microchip to our sensors. The next two weeks will be spent further increasing those skills and hopefully creating a physical prototype. This will involve solving some problems with voltage levels due to the infrared sensors outputting a 5V signal, while the microchip can only handle 3.3V. This means drafting up circuit drawings so that we can request for Graeme McPhillips to build it. I hope to be able to facilitate communication between the sensor units and the zone controllers once they arrive and if possible start sending sensor data.

**VICTORIA**

As part of my research into using node.js in order to build the API layer that rests on top of the NoSQL Cassandra database, I have looked into some javascript tutorials, webcasts on node.js, express – a node.js web application framework and the cassandra-driver module for connecting to the database. From here, I have managed to build a preliminary api which works locally for now. In the coming weeks, I plan to expand my knowledge on RESTful apis built with node, analysing examples on Github. Following this, I hope to look into how to go about authentication and integrating the api into applications, completing the api in the process and begin helping on the application side.