Platinum Analytics

# Calibration Phase

To verify that I could collect the required data for calculating player positions I wrote a test piece of software which would collect Signal Strength Data from the SensorTag in the form of an RSSI reading and send it to the database. The pieces of code below are written in Python. The program collects makes use of python library ‘Bluez’ [ref] which uses the laptops Bluetooth receiver to search for nearby Bluetooth devices.

We begin reading the results of the scan by creating a subprocess running the command ‘sudo btmon’. This command begins outputs data of the search for nearby devices and usually the output to the screen. In this case however, as the command has been run as a subprocess the output is not printed to the screen and needs to be read in using the command ‘proc.stdout.out.readline().lstrip()’. The lstrip() function removes any white space from the beginning of the line.

If the line begins with ‘HCI Event’, we know that this is the beginning of a new reading. Next we find the line beginning with ‘Address:’ andread in the Mac Address of the device with a regex search. The regex search matches any piece of text which has the format ‘XX:XX:XX:XX:XX’ where X is a hexadecimal character, 0-9 or A-F. This is the format of a Mac Address, which is the unique identifier for the Bluetooth receiver. Finally we read in the line beginning with ‘RSSI:’. This is our Signal Strength indicator which has the format ‘- XX dBm’ where XX is a whole number. Once again we use a regex search to find this piece of text.

With the Mac Address and Signal Strength indicator both known we can make a distance measurement and know which device we are trying to locate. We add a Timestamp to record the time of the reading, a Receiver ID to record which receiver made the reading and send this information to the database. We send this reading to the database by making a HTTP Post request to the Rest API PNM-DB using the python library ‘Requests’. Once PNM-DB picks up this request it will create a new reading and persist it in the database, ready to be used later on.

