# How to use the csv based Things Simulator

In order to facilitate developers in testing the key concepts and functionality of BETaaS we have developed a simple Things Simulator (TS) based on a (csv) text file(s) that corresponds to the “physical” devices otherwise installed and discoverable by the system in a real situation. In this way, developers can easily and quickly test a number of devices ranging in number and characteristics respectively, with the number of files. For example, a number of 3 different csv files provide BETaaS platform with 3 different virtual devices.

# CSV file Structure

The file structure of the CSV file indicates all the values required by the TS in order to smoothly simulate not only the values but also the contextual information needed by the platform. In particular the following fields are available as comma separated values headers in the csv file:

1. deviceID. The device’s unique ID.
2. Output. 1 for true 0 for false.
3. Digital. 1 for true 0 for false.
4. maximumResponseTime.
5. memoryStatus. Between 0 and 100 the memory status of the device
6. batteryLevel. Between 0 and 100 the battery level of the device
7. measurement. The actual value/reading of the device.
8. protocol.
9. type. Type of sensor/actuator e.g. “temperature”, “presence”
10. unit. The type of measurement’s unit e.g. “int”.
11. environment.
12. latitude. The longitude of the device’s position
13. longitude. The longitude of the device’s position
14. altitude. The altitude of the device’s position
15. floor. The floor of the device’s position
16. locationKeyword.
17. LocationIdentifier
18. ComputationalCost
19. BatteryCost

(NOTE: Names should be provided as in the above list)

Below the header the respective values of them should be placed in rows varying according to the needs of the developer. When the system finishes reading the last line it will start over again. The variation in values such as the batter level for example, provides a sense of time lapse and could be placed in descending mode.

# CSV File Location

The location of the file is configured in the betaas.gateway.cfg configuration file:

# Simulator settings

sensors = C:/data/sensors/

# Required Bundles

For the csv simulator to operate correctly the required bundles are the following:

1. betaas-adaptation-plugin
2. betaas-adaptation-simulator

These bundles must be started before the (Things Adaptor) TA is initiated.