Communicate with the SmartSensors via AT-commands

Introduction

If you are familiar with the use of microcontroller devices such as XBee chips or so you migh know what the AT commands ar for : they enables you to configure your device via a textual mode. You are very lucky since the SmartSensors are shipped with a set of a dozen AT commands which enable you to configure it quite easily.

The main advantage of these AT commands is that they are accessible both in serial mode *as well as* in WiFi mode. That is to say that you can reconfigure your sensors remotely via the wifi, provided the sensor has already access to a network. Cool isn't it ?

To do so, the `util/` folder contains the **configurator.py** software wich can connect and update/download a sensor configuration. Just run it the fields/buttons are quite self explanatory.

Identification

To identify on the sensor, you have to know something called the **master key** of the sensor. This is a code that you must enter before trying to do anything on the sensor. The command for that is `AT+IDENT=masterkey`.

The commands

The generic syntax for an AT command is the following : `AT+COMMAND=ARG`. If you are coding something about it, don't forget to add an `\n` or an `\r` after the command.

Sensor configuration

These commands are used to configure the sensor itself and it's identification onto your database server.

- `AT+ID` : Changes the ID of the sensor to access the website
- `AT+PW` : Changes it's password
- `AT+IPDB` : Changes the IP of the data server
- `AT+HOSTDB` : Changes the hostname of the data server

Network configuration

- `AT+DHCP` : 1 if DHCP is used, 0 if not. If DHCP is used you don't need further config.
- `AT+NIP` : IP address of the sensor
- `AT+NGW` : Gateway IP
- `AT+NMSK` : Netmask

Wireless configuration

- `AT+ESSID` : Obviously sets the ESSID of the network. Does not matter if visible or not
- `AT+WKEY` : Sets the passphrase for the sensor
- `AT+NETTYPE` : Sets the type of network according to the following values :
    - 0 : Auto
    - 1 : Open authentication
    - 2 : WEP authentication
    - 4 : WPA PSK
    - 8 : WPA2 PSK

Security

- `AT+MASTER` : Changes the Master key.
- `AT+IDENT` : Identify on the sensor. The parameter is the master key.

End of sequence

- `AT+EXIT` : This command shall be issued at the end of every command sequence end.