Puces

Objectif Sciences International

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Objectif Sciences International

Organisation Internationale Non Gouvernementale

RENCONTRES DE L'EXCELLENCE MEETINGS OF

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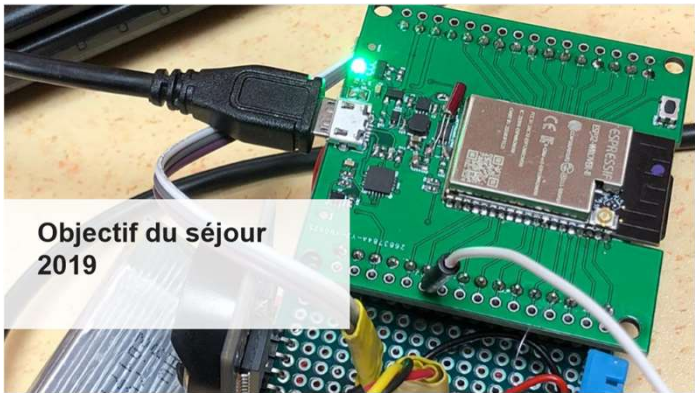
1. General objective

The overall objective was to create an autonomous low-tech field measurement system for external and internal OSI research.

During the first year :
First version of a map for air/water measurement.

During the second year :
Create a generic card called OSI-board as a basis for specific sensor modules.

In the third year (forecast) :
Optimize the OSI-board
Create various modules (Water quality, weather station...)
Create products that will be open source specific to science clubs (such as a high-performance sound recorder).



2. Scientific project

The name of the project is : **OSI-board**

The OSI-board is a simple and cheap electronic board that is easy to use for field measurements.

Depending on the environment in which it is placed, it can be easily changed.

2. The scientific project

The OSI-board allows information to be collected in environments where access is difficult for humans.

Example :
If you need to go to hard-to-reach places to retrieve information, all you have to do is take the OSI-board. Then add the right sensors and put it where the information needs to be taken and give yourself time to do so and come back on time.

2. The scientific project

The OSI-board can be placed anywhere (as long as you put the right sensors on it).

Examples :
if you want to put it near a volcano you can add a heat sensor then you can leave (and all this in 2 minutes !).

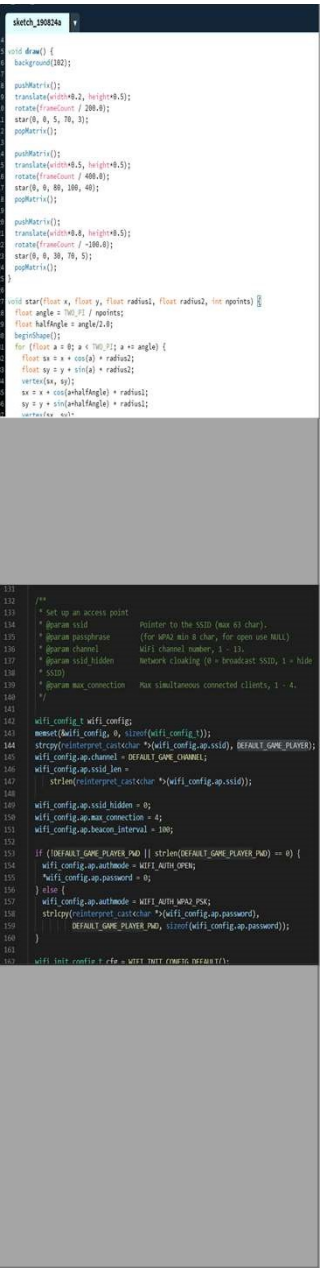
We added atmospheric pressure sensors and air and water temperature sensors to take information from caves in Mexico once a day for a year.

3. What I did for the OSI-board

I mainly worked on the first prototype of the OSI-board.

I soldered the sensors on the OSI-board to see if the code and sensors worked.

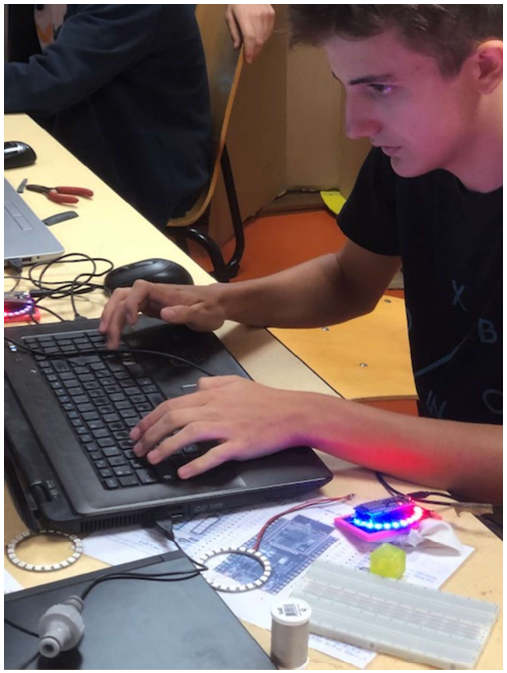
I did the tests before soldering the connections and sensors.



3. What I did for the OSI-board

I coded in C++ (which is one of hundreds of computer languages) when I had no basis.

So I gave the instruction list of the OSI-board sensors.



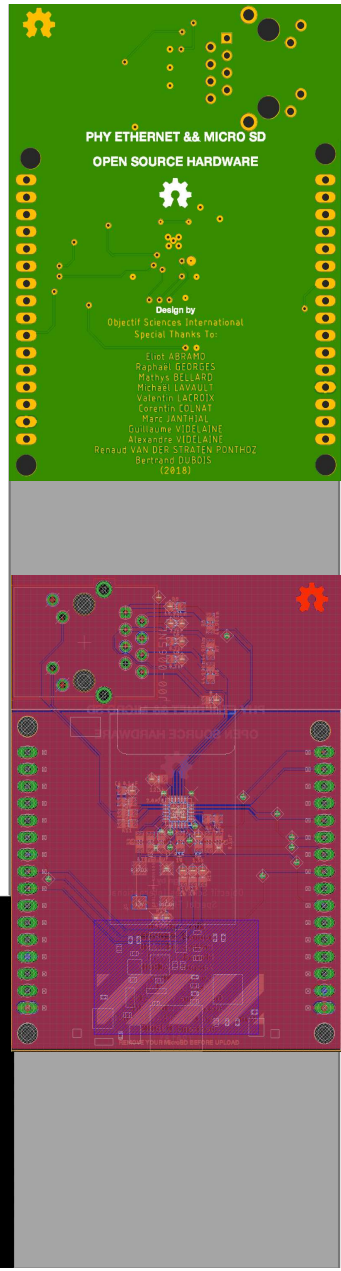
a developer in his natural habitat

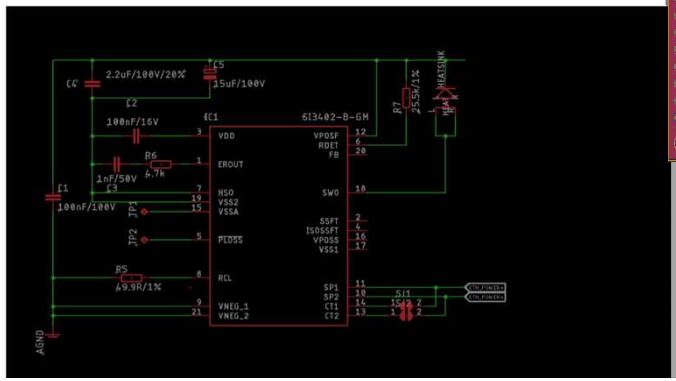
3. What I did for the OSI-board

Modelling is the process of making the schematic (plans) of an object (the electronic map) before building it.

I worked on a graphic software called "Eagle“

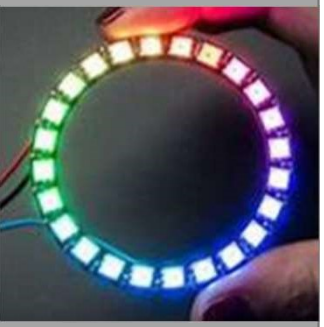
I did the beginning of the modelling but it’s the group after me who finished the plans.





4. Methodology & pedagogy

When I arrived, I had no knowledge of coding or modeling but thanks to my instructors, I learned to code in Arduino and to do modelling.



To get used to the code I did many exercises like making an RGB lamp (multicolored lamp) with many functions or making a box with sensors of photo resistance, water temperature and air temperature and humidity.

5. The Acknowledgements

I would like to thank my facilitators : Khalil and Sandrine

But also the people in charge of the stay : Antoine and Sébastien

And all the other OSI animators to give us their time to do very good activities.

« l'OSI-board doit être accessible à tout le monde »

Me, during the stay