



European Project Semester

PROJECT OUTLINE

Project dates: September – December 2019

Title: Prototyping of SmartCube (a sensor node) - Home Air Quality project

Project activity areas:
Electronic, computer science, IoT, sensors

Keywords: IoT, sensor, ESP32, market study and industrialization (design and conception)

Tutor's name and coordinates

Client – End-user: **ENIT**
ENIT Technical Supervisor + contact:
cedrik.beler@enit.fr
daniel.dixneuf@enit.fr

Project origin

Research, innovation

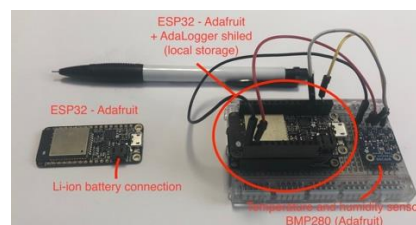
Project technical background:

Internet of Things (IoT) is part of the industry 4.0 revolution. One strong constraint of IoT is related to its energy consumption and therefore their alimentation.

This project consists in doing a smart cube, ie. An enclosed computational system able to connect to other cubes and to central servers to publish information. Following an EPS project of last semester, you will consider a powering based on battery and 220V grid.

Moreover, we want the cube to work even if there are no central server node, ie. the system is distributed first. We'd like also to make several cube behave together in a smart manner

A prototype of the cube that has to display information as the software and the hardware of the proposed solutions must be prototyped.



Studied topics:

- Operational Technology (OT) and Information Technology (IT)
- Arduino / **ESP32** + central hub (Client/Server technologies)
- Industrialization (feasibility, patent research, cost study, ...)