



TEMPERATURE SENSOR



PM 2.5



HUMIDITY SENSOR

Tussentijdse Presentatie 2

Air Quality Control Sensor 2

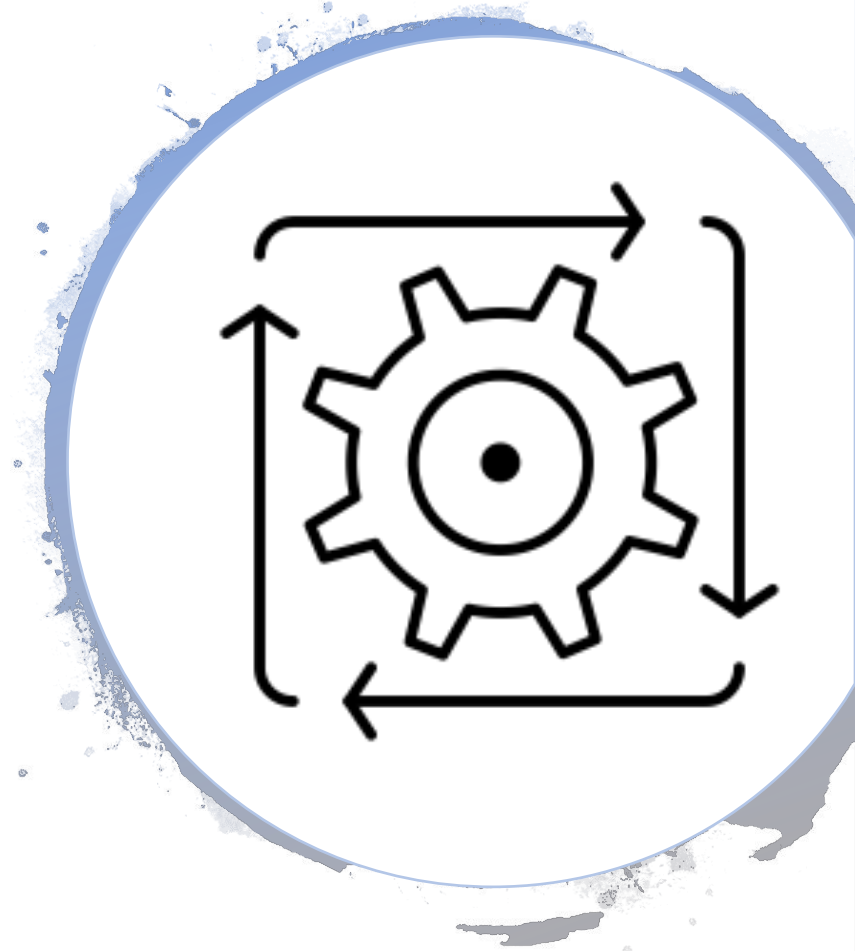


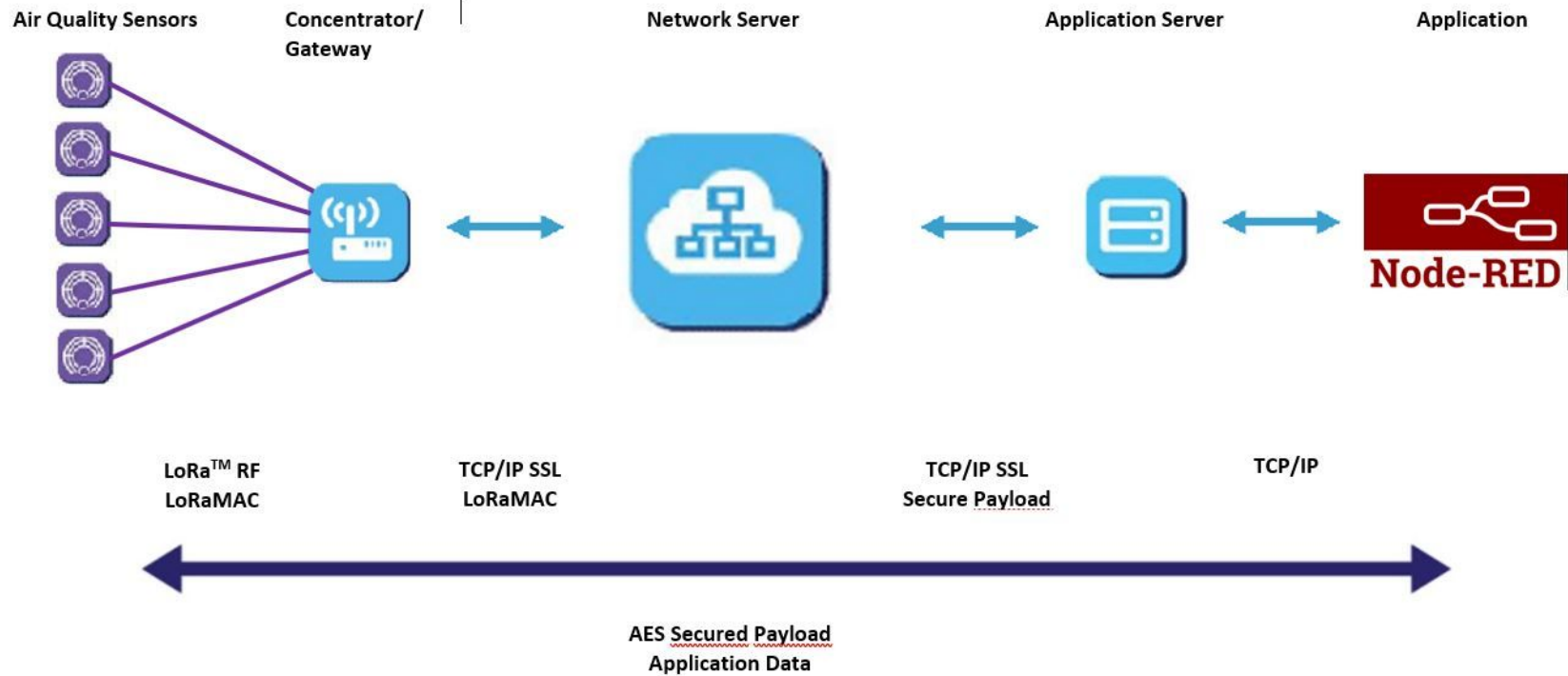
Wat is ons project?

- The Port of Antwerp wil milieuvriendelijker worden
- Hoeveelheid fijn stof over de haven in kaart brengen
- LoRaWAN al uitgerold over de haven
- Sensoren zijn nog niet aanwezig

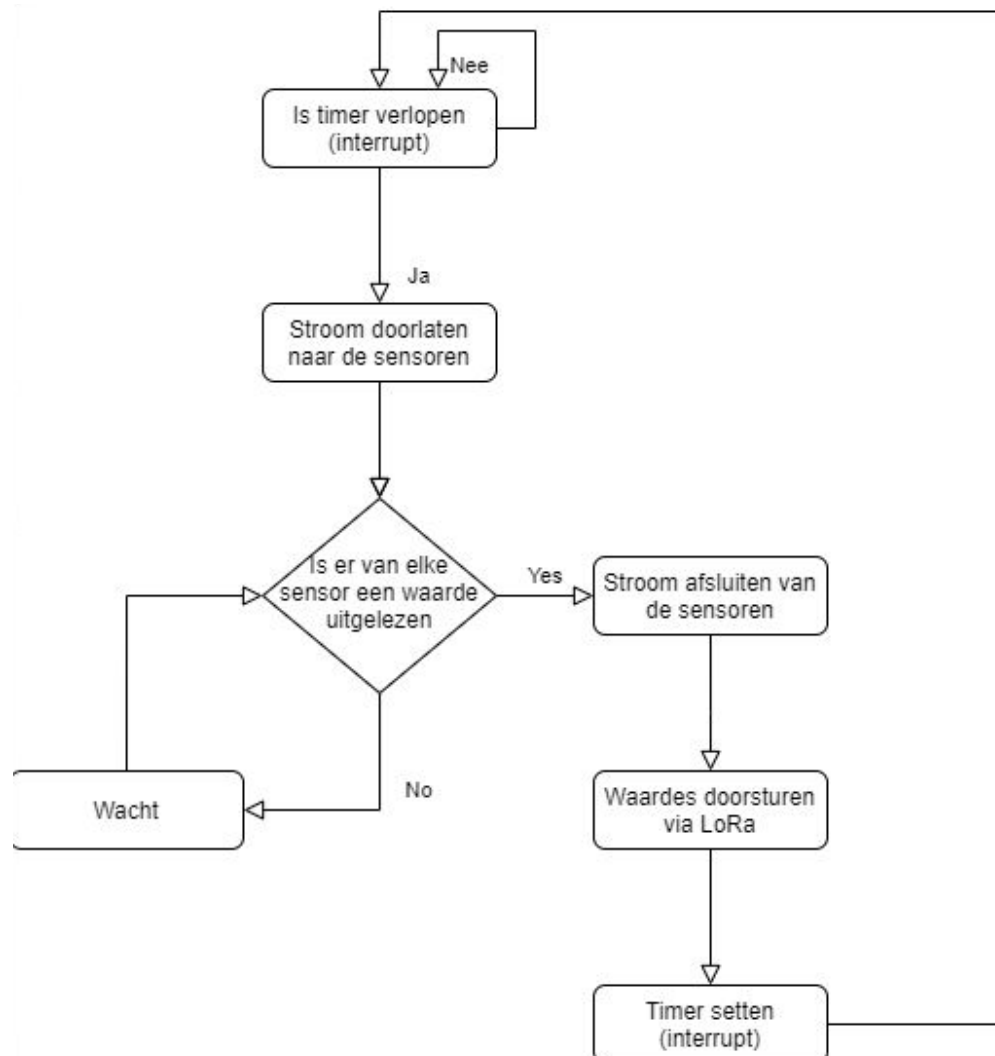
Algemene Workflow

- Uitlezen van sensoren
- opsturen naar de back-end
- weergeven in web applicatie

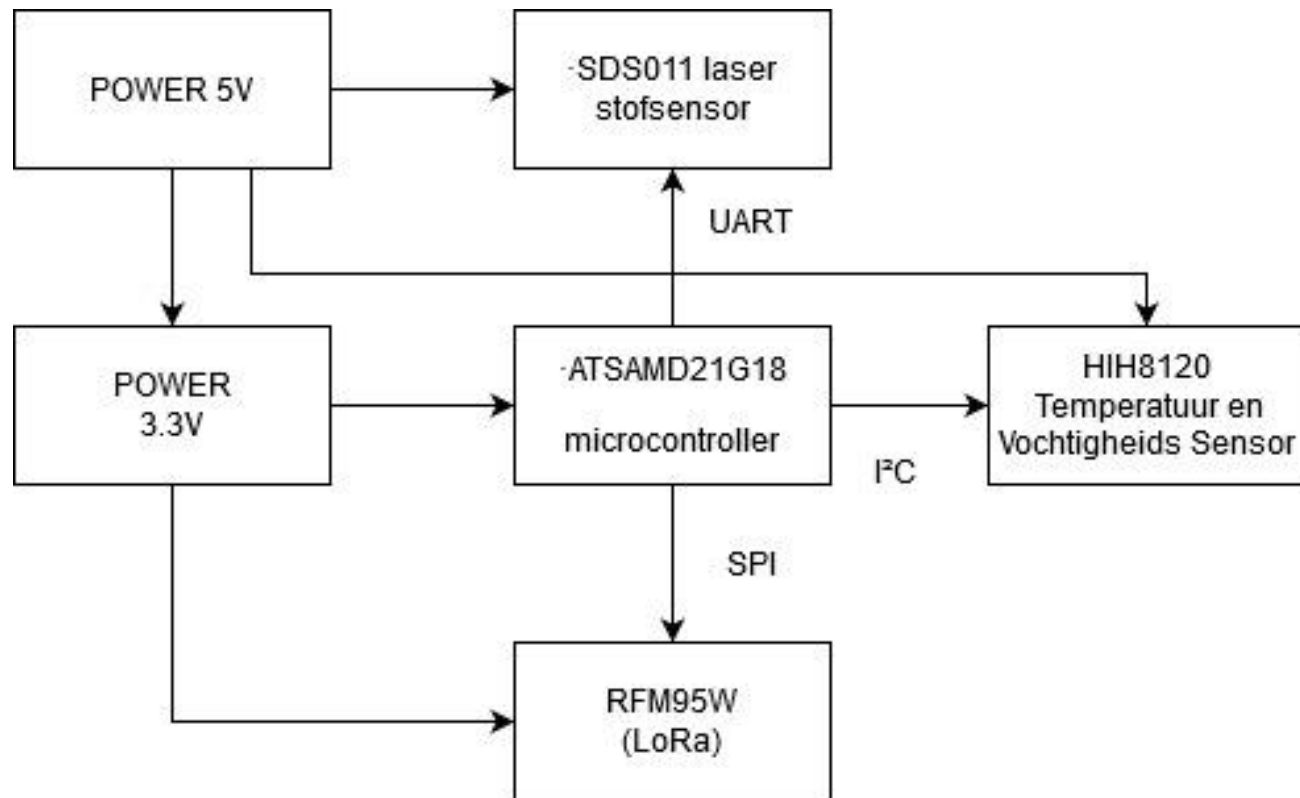


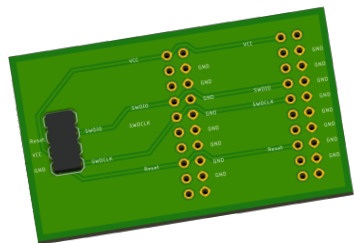


Flowchart

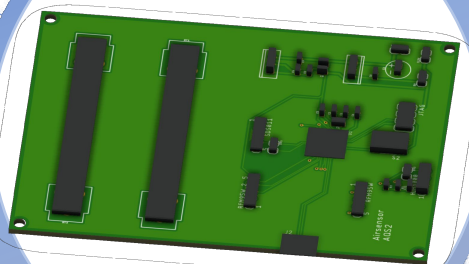


Blok-diagram

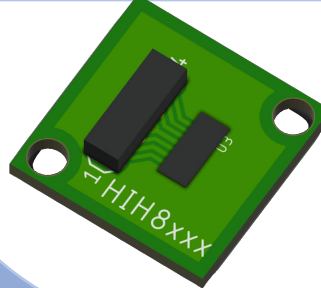




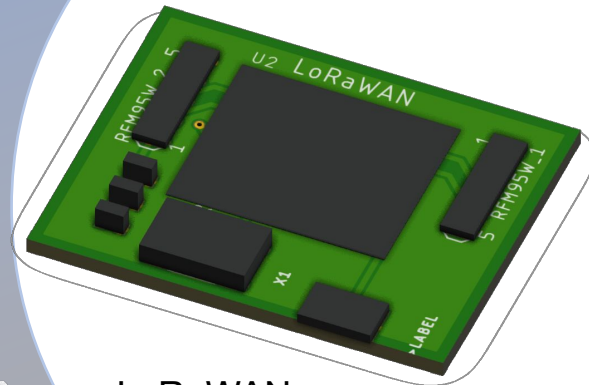
JTAG



ATSAMR21



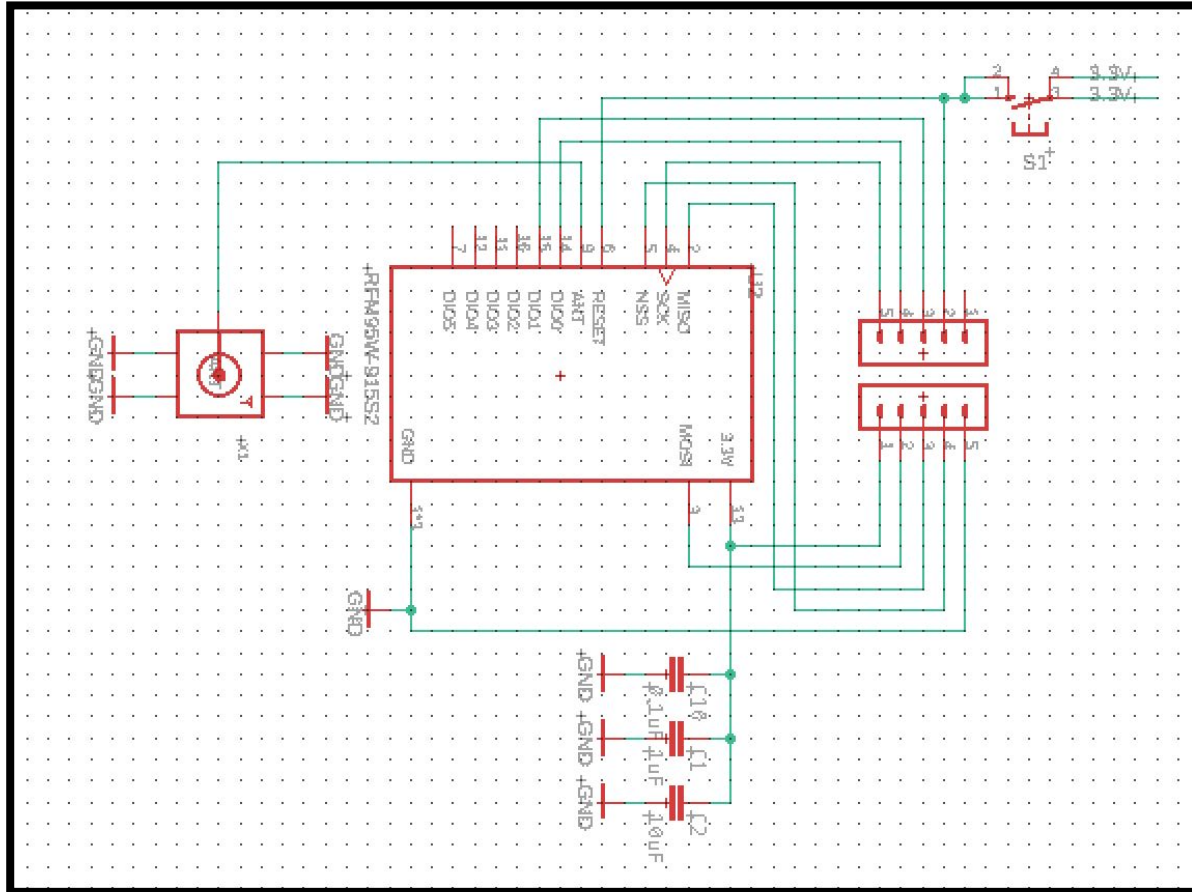
HIH8xxx



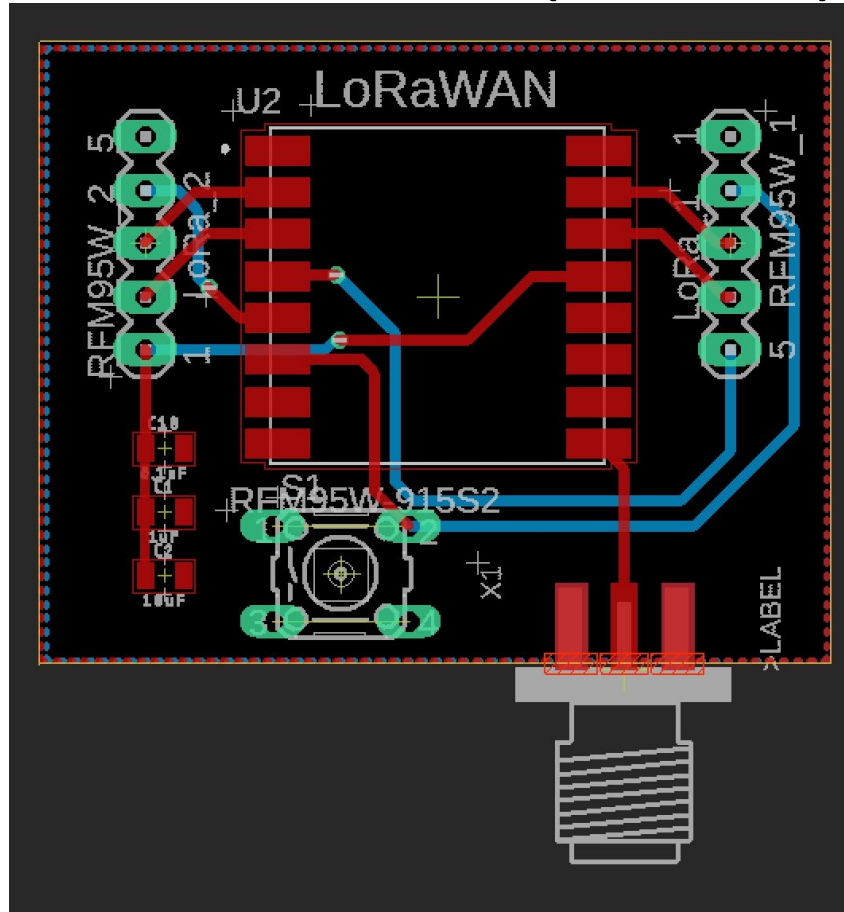
LoRaWAN

Hardware Versie 1

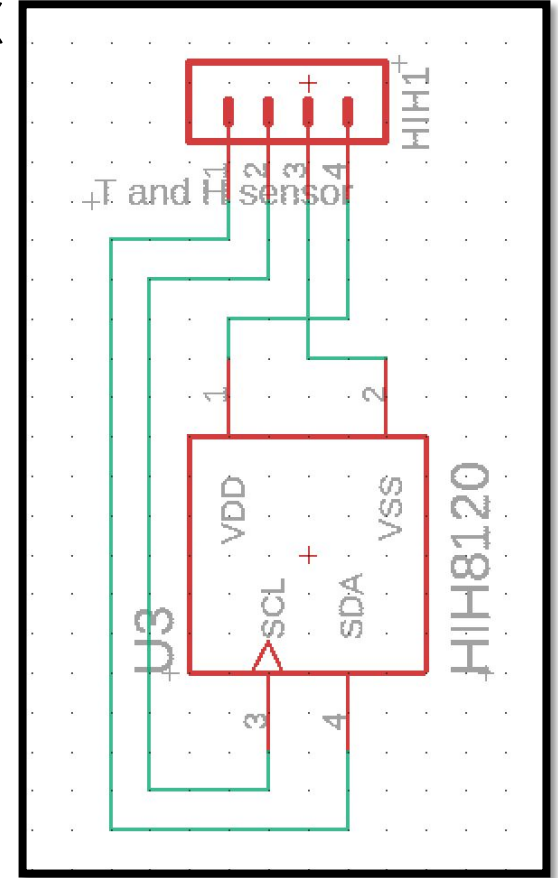
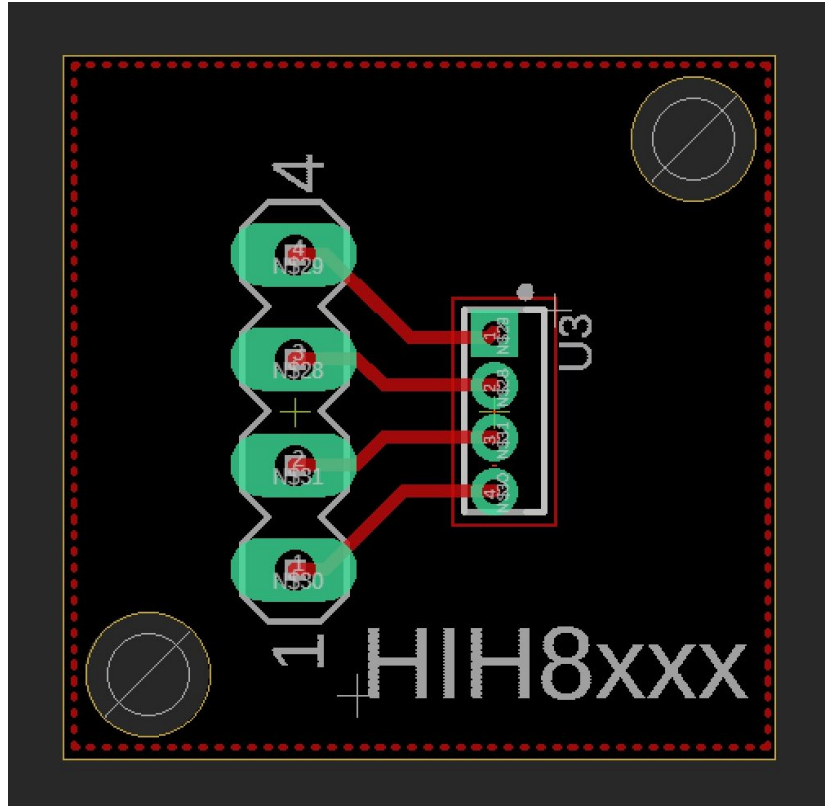
Hardware Schema LoRaWAN (RFM95)



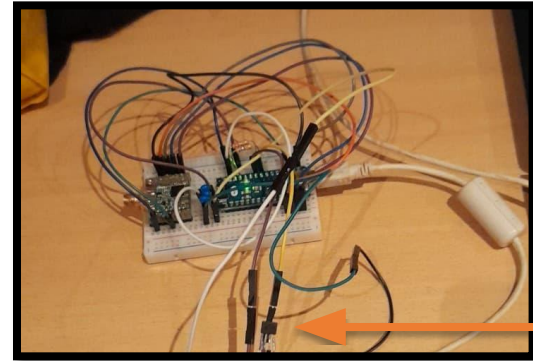
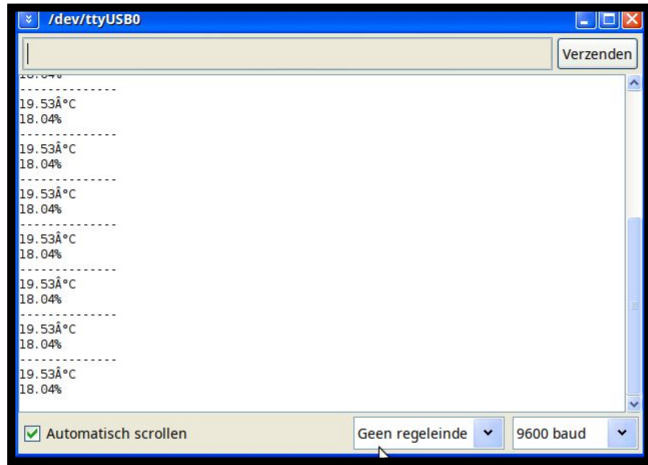
Hardware PCB LoRaWAN (RFM95)



Hardware Schema/PCB HIH8xxx

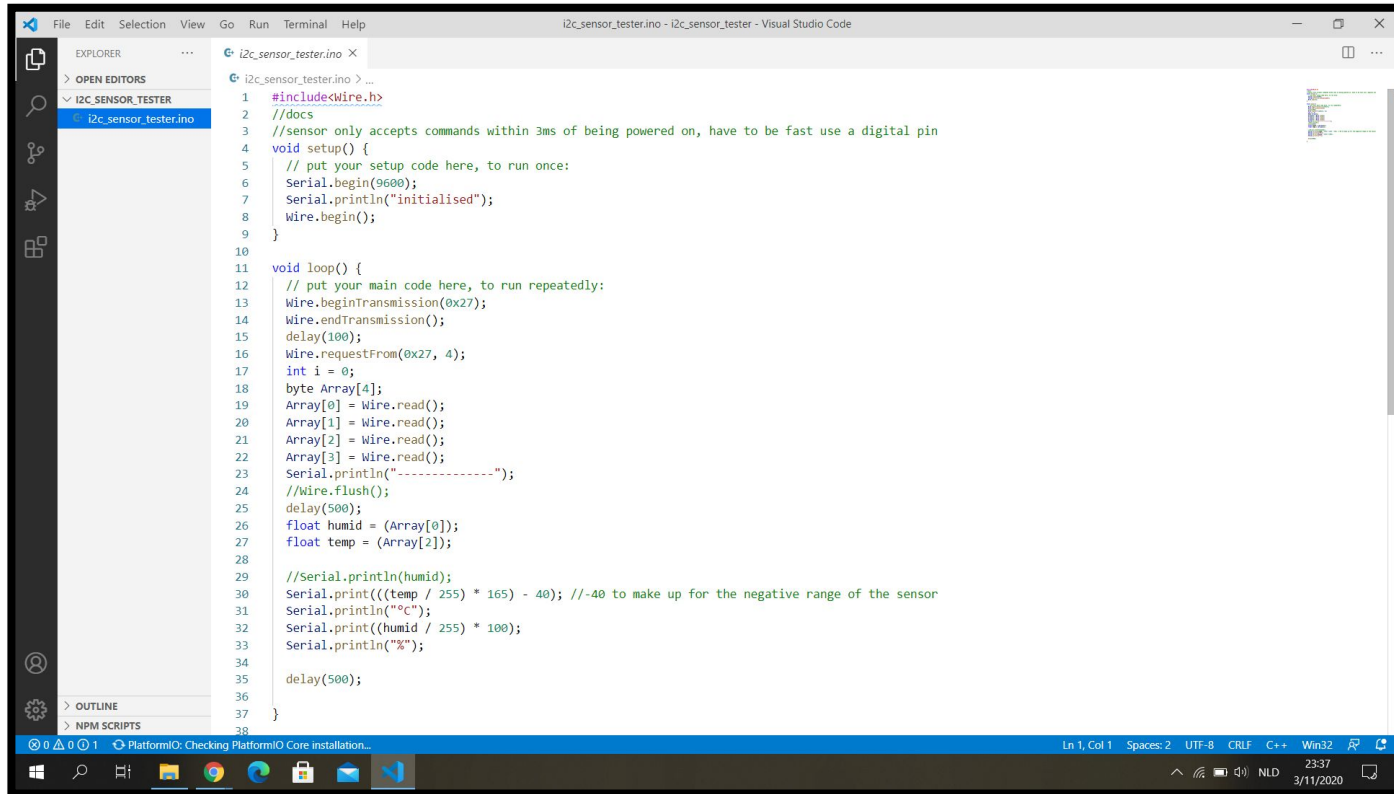


Testen HIH8xxx



HIH8xxx

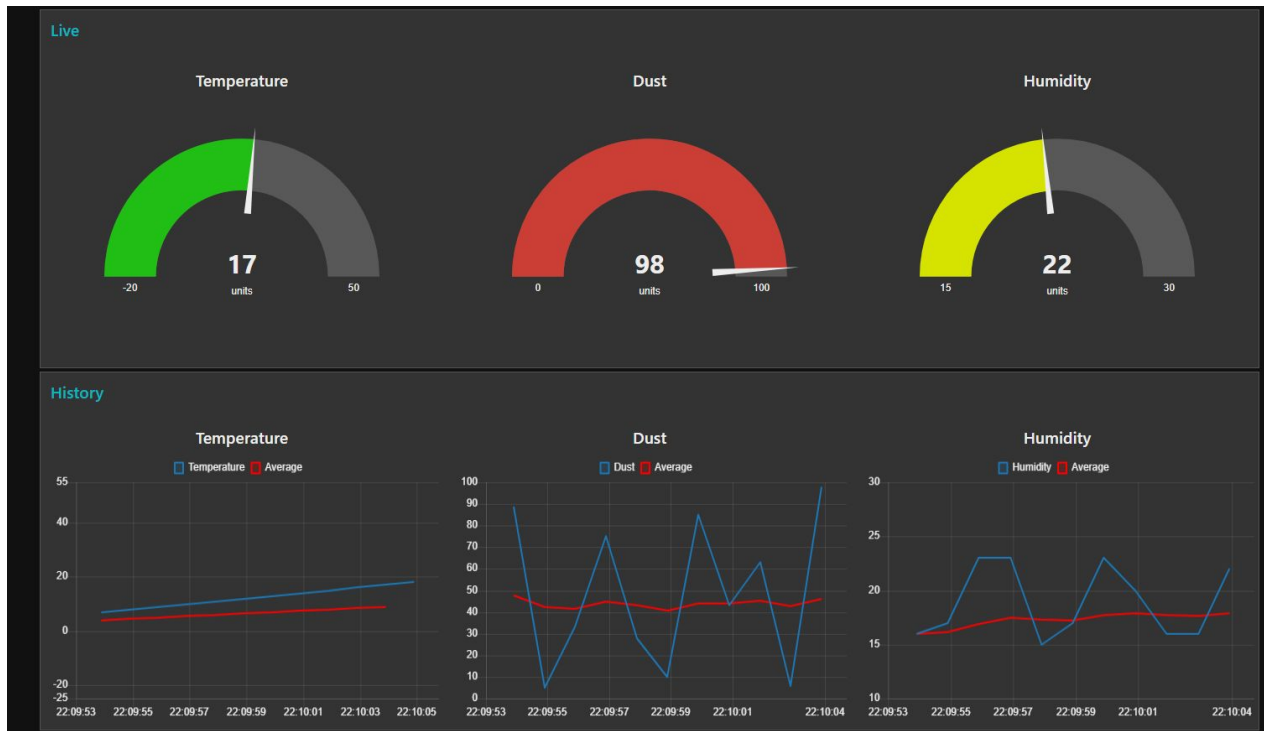
Testen HIH8xxx



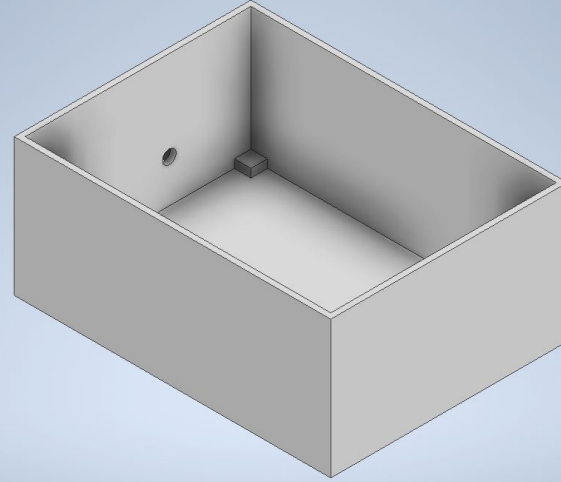
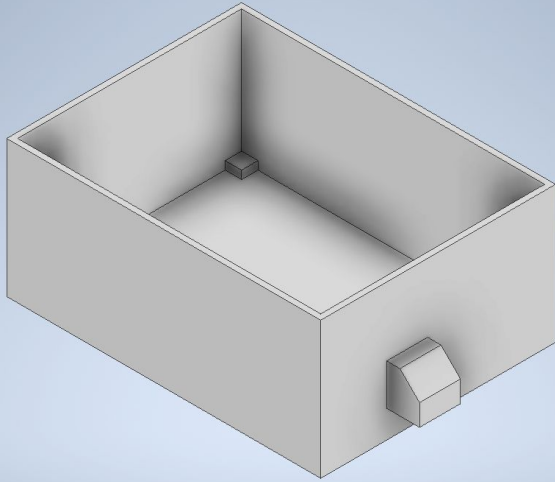
```
1  #include<Wire.h>
2  //docs
3  //sensor only accepts commands within 3ms of being powered on, have to be fast use a digital pin
4  void setup() {
5      // put your setup code here, to run once:
6      Serial.begin(9600);
7      Serial.println("initialised");
8      Wire.begin();
9  }
10
11 void loop() {
12     // put your main code here, to run repeatedly:
13     Wire.beginTransmission(0x27);
14     Wire.endTransmission();
15     delay(100);
16     Wire.requestFrom(0x27, 4);
17     int i = 0;
18     byte Array[4];
19     Array[0] = Wire.read();
20     Array[1] = Wire.read();
21     Array[2] = Wire.read();
22     Array[3] = Wire.read();
23     Serial.println("-----");
24     //Wire.flush();
25     delay(500);
26     float humid = (Array[0]);
27     float temp = (Array[2]);
28
29     //Serial.println(humid);
30     Serial.print(((temp / 255) * 165) - 40); //-40 to make up for the negative range of the sensor
31     Serial.println("°C");
32     Serial.print((humid / 255) * 100);
33     Serial.println("%");
34
35     delay(500);
36 }
37
38
```

Frond-end

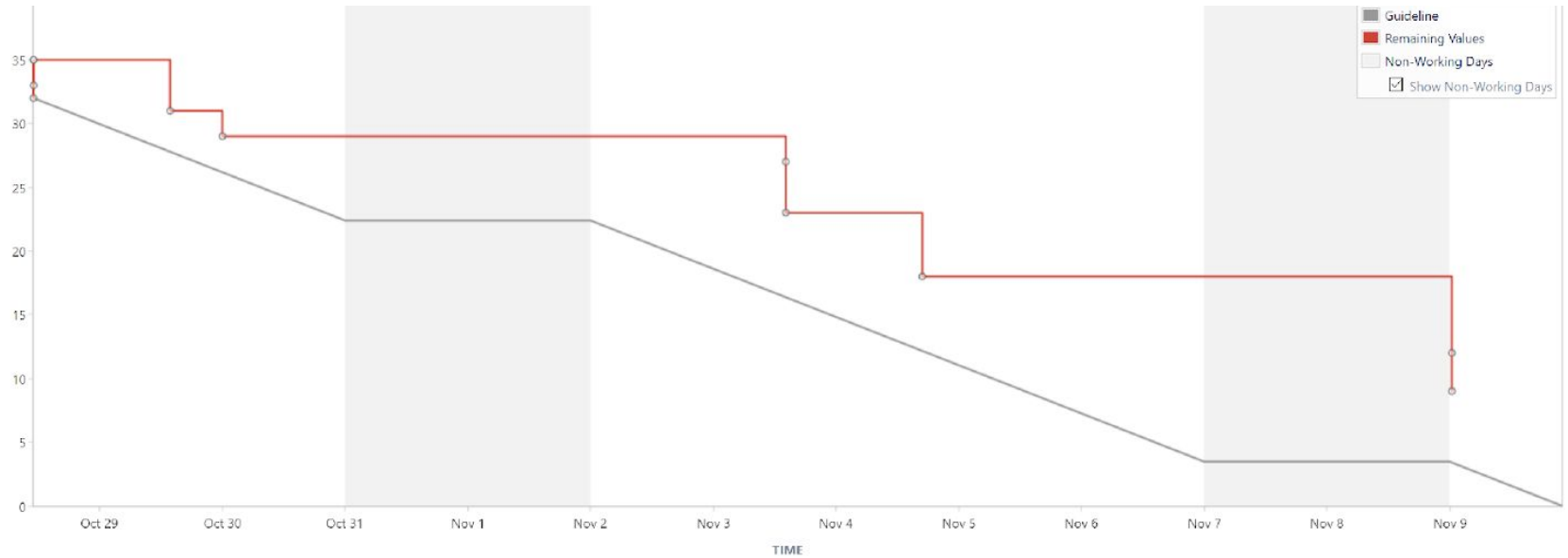
- Node-Red application



3D Print



Burndown chart



Stand van zaken

- PCB ontwerpen Zonnepaneel ☐ sprint 4
- PCB solderen ☐ sprint 4