TEMPERATURE SENSOR

PM 2.5

PM 10

HUMIDITY SENSOR

Tussentijdse Presentatie 2

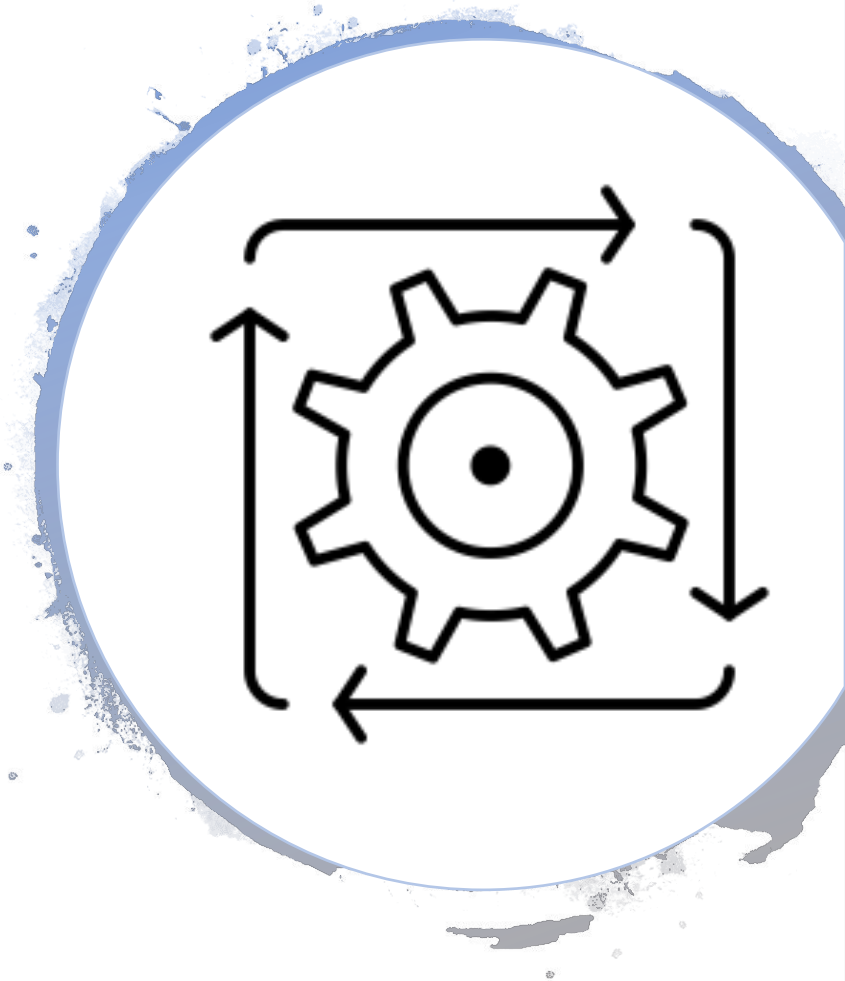
Air Quality Control Sensor 2

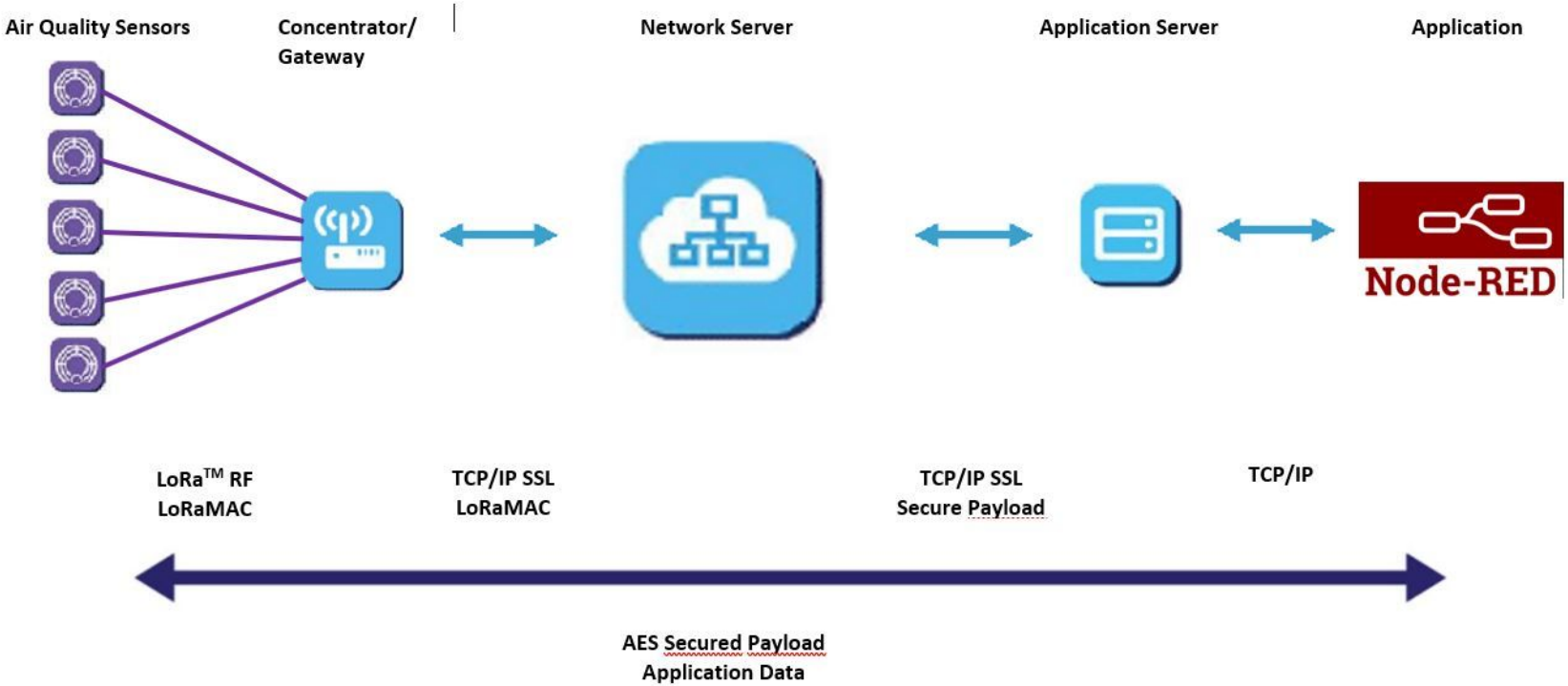
Wat is ons project?

- 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

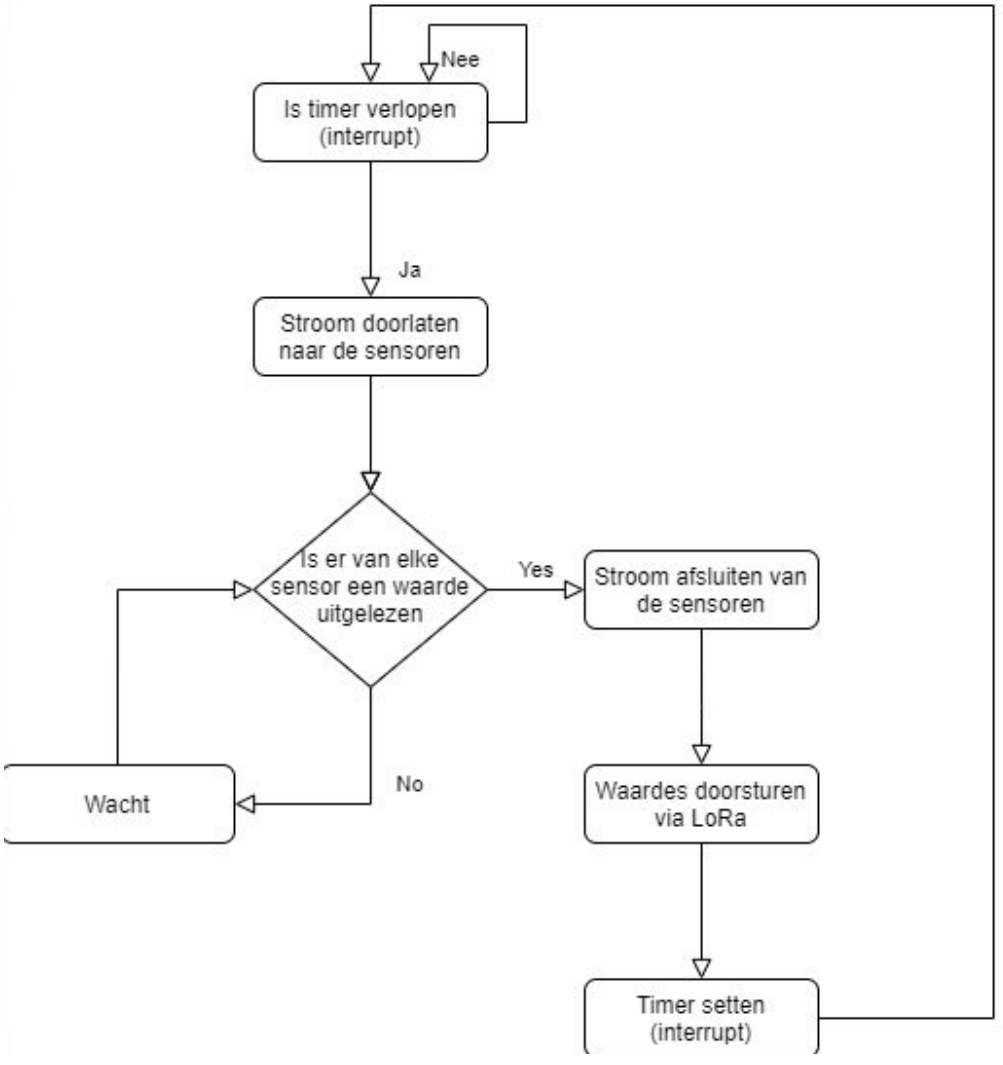
Algemene Workflow

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

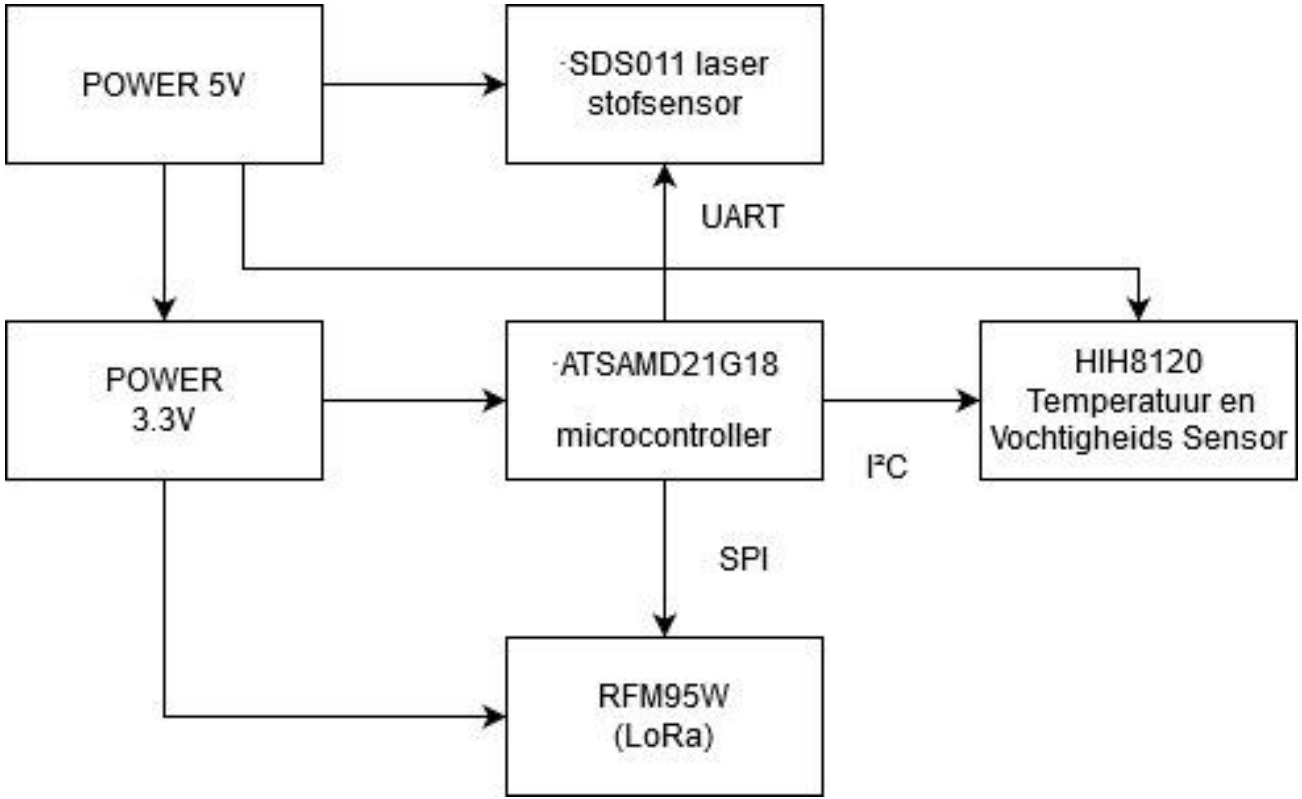


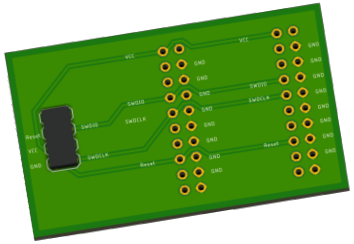

Air Quality Sensors
Concentrator/
Gateway
Network Server
Application Server
Application
Node-RED
LoRa™ RF
LoRaMAC
TCP/IP SSL
LoRaMAC
TCP/IP SSL
Secure Payload
TCP/IP
AES Secured Payload
Application Data

Flowchart

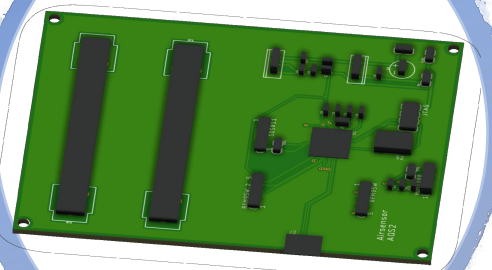

Nee
Is timer verlopen (interrupt)
Ja
Stroom doorlaten naar de sensoren
Is er van elke sensor een waarde uitgelezen
Yes
Stroom afsluiten van de sensoren
No
Wacht
Waardes doorsturen via LoRa
Timer setten (interrupt)

Blok-diagram

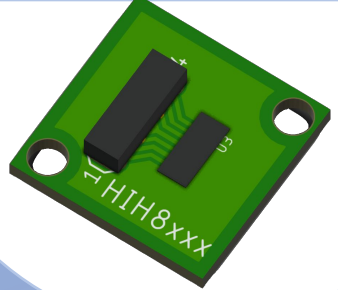




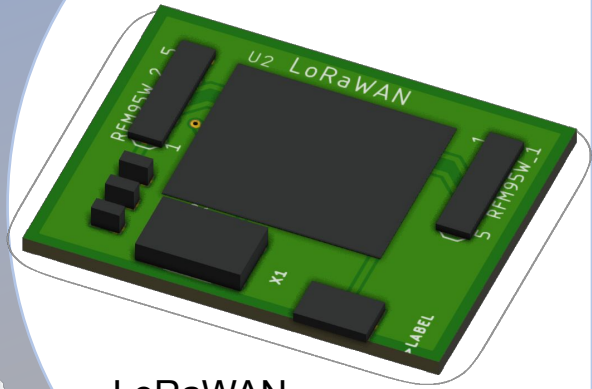
JTAG



ATSAMD21



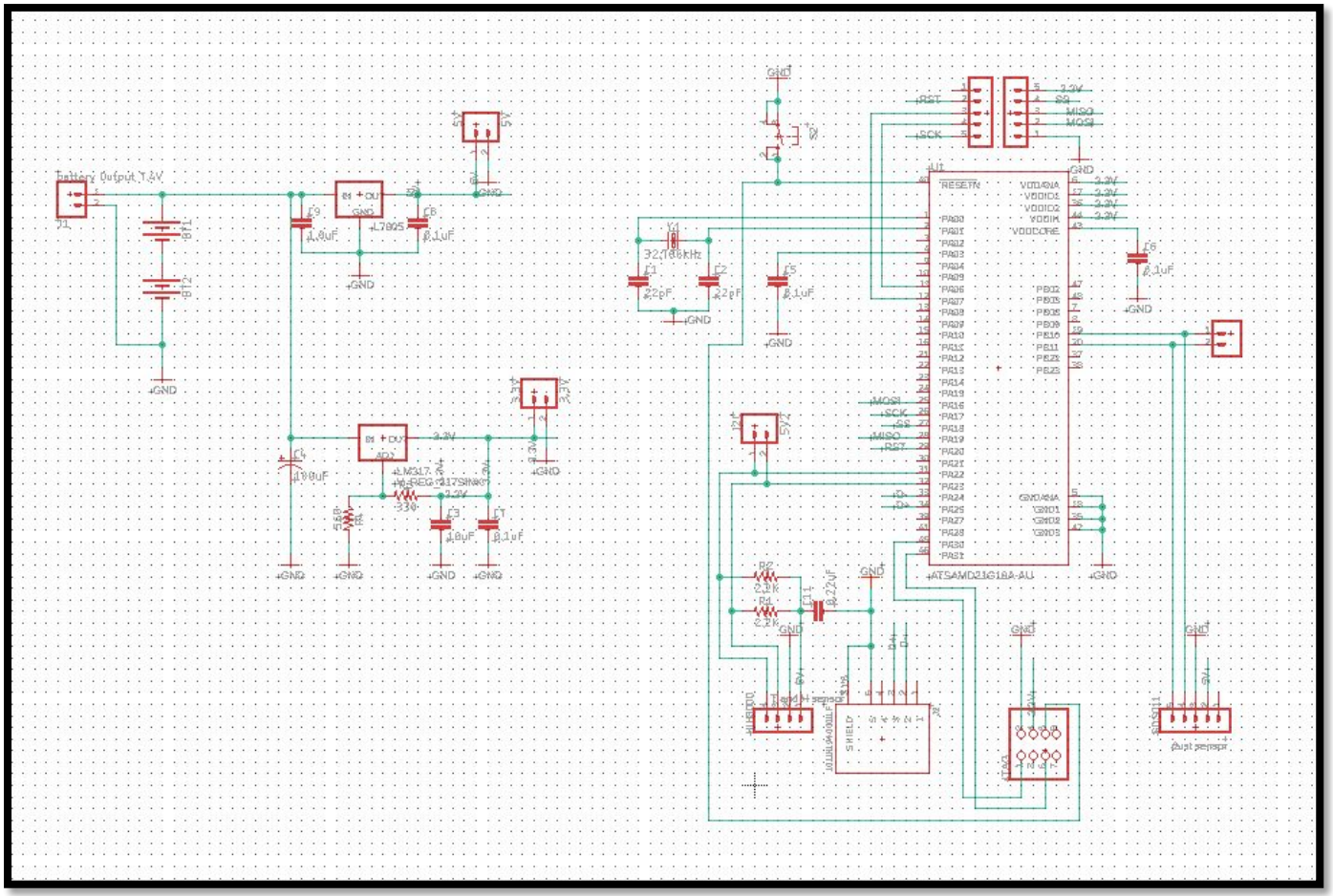
HIH8xxx



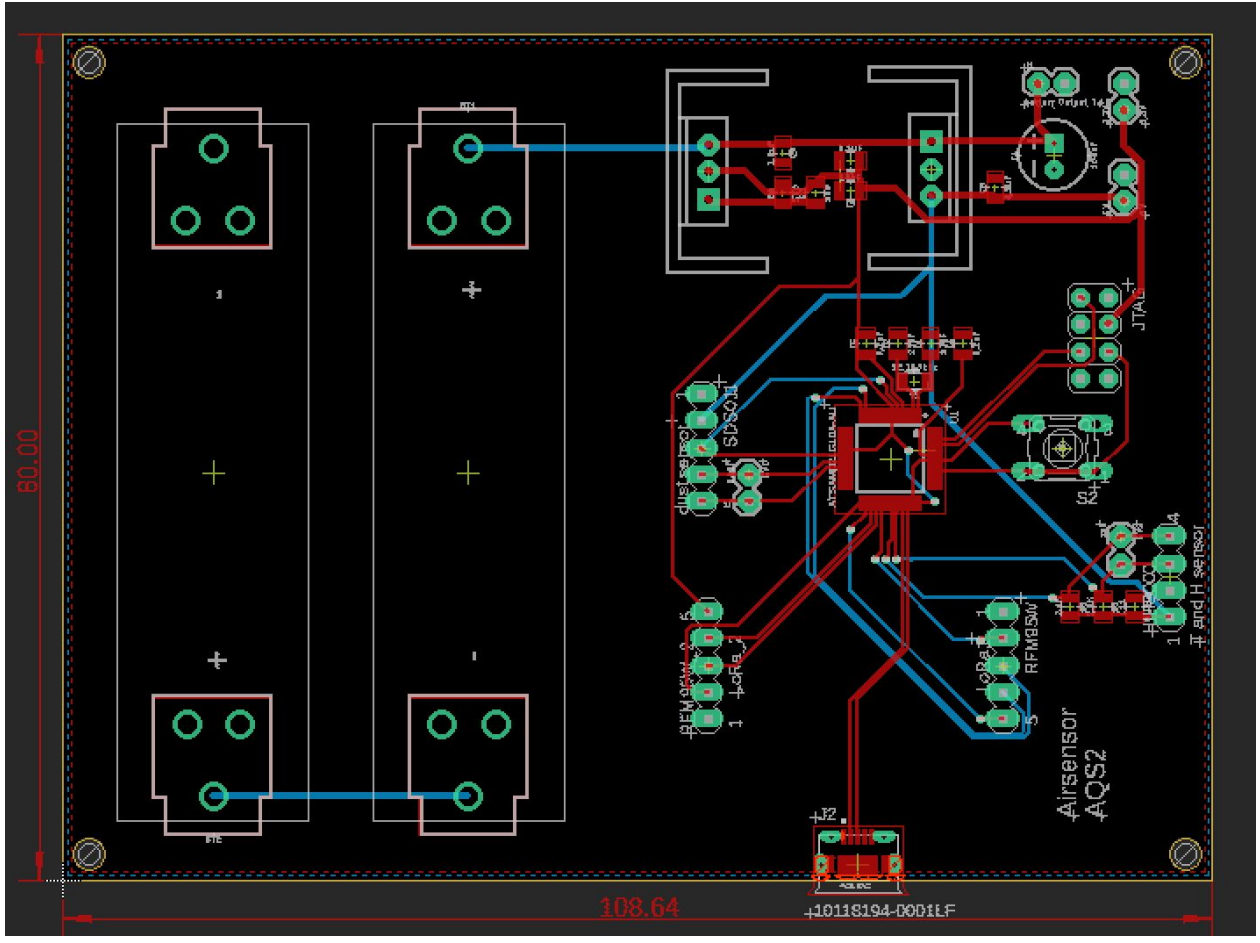
LoRaWAN

Hardware Versie 1

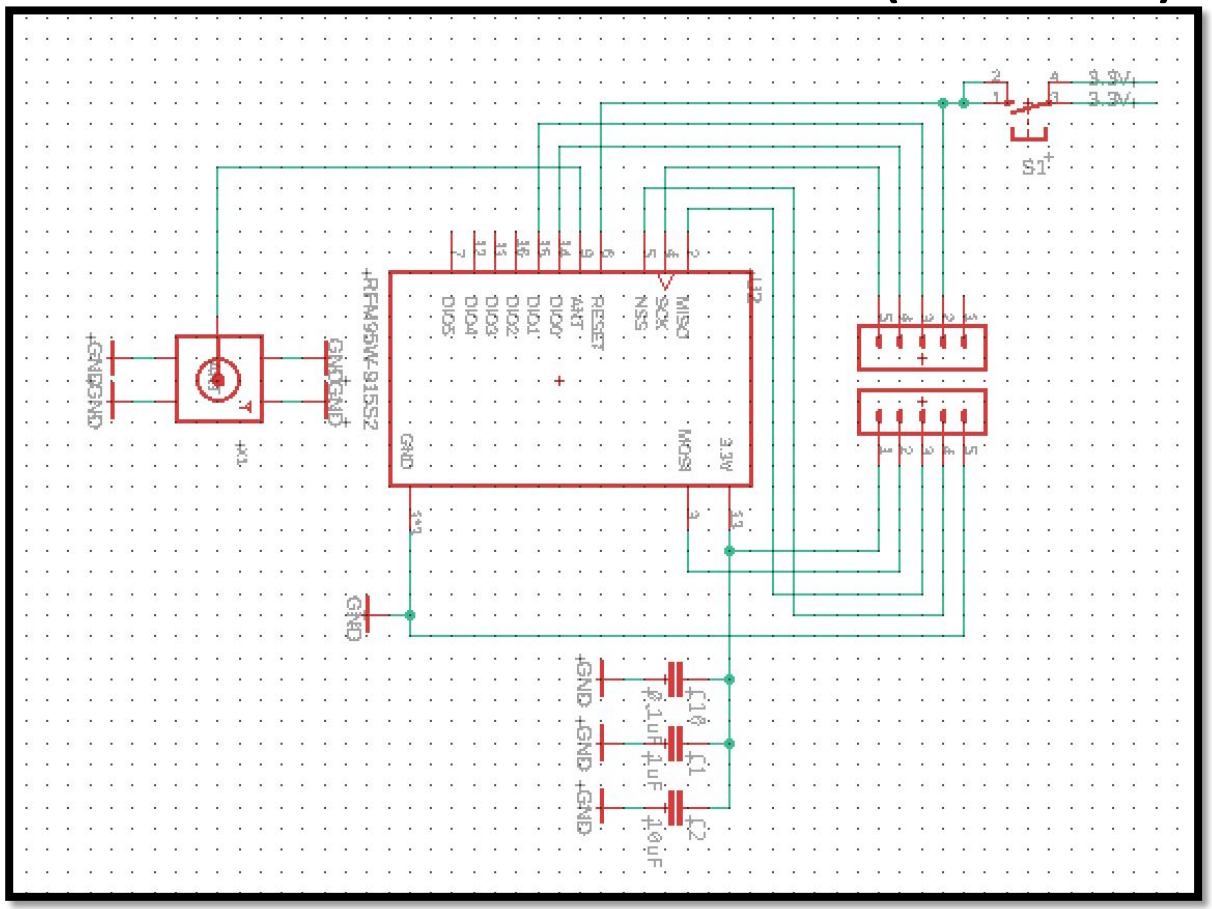
Hardware Schema AirSensor



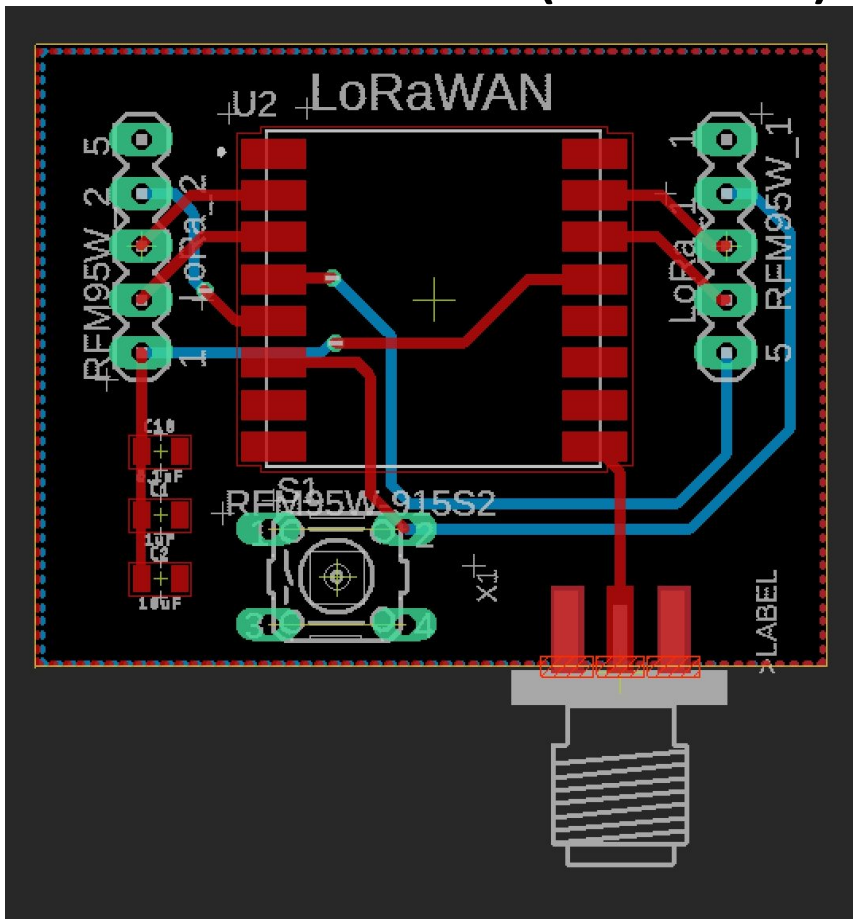
Hardware PCB AirSensor



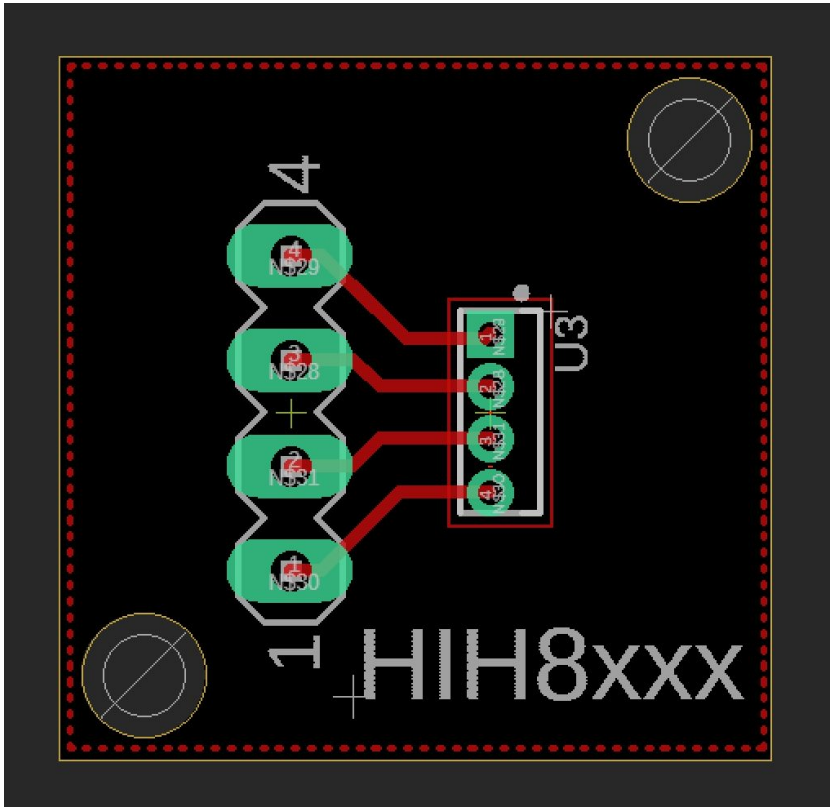
Hardware Schema LoRaWAN (RFM95)

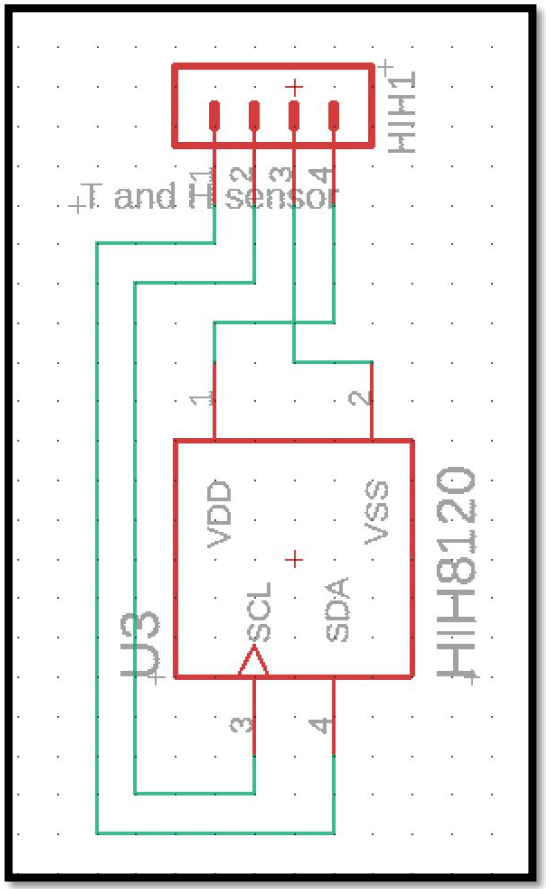


Hardware PCB LoRaWAN (RFM95)

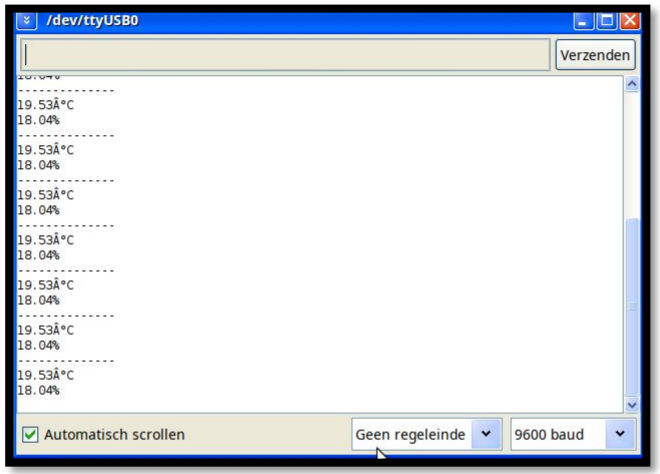


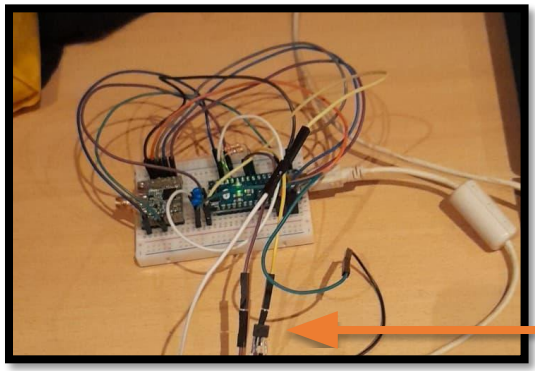
Hardware Schema/PCB HIH8xxx





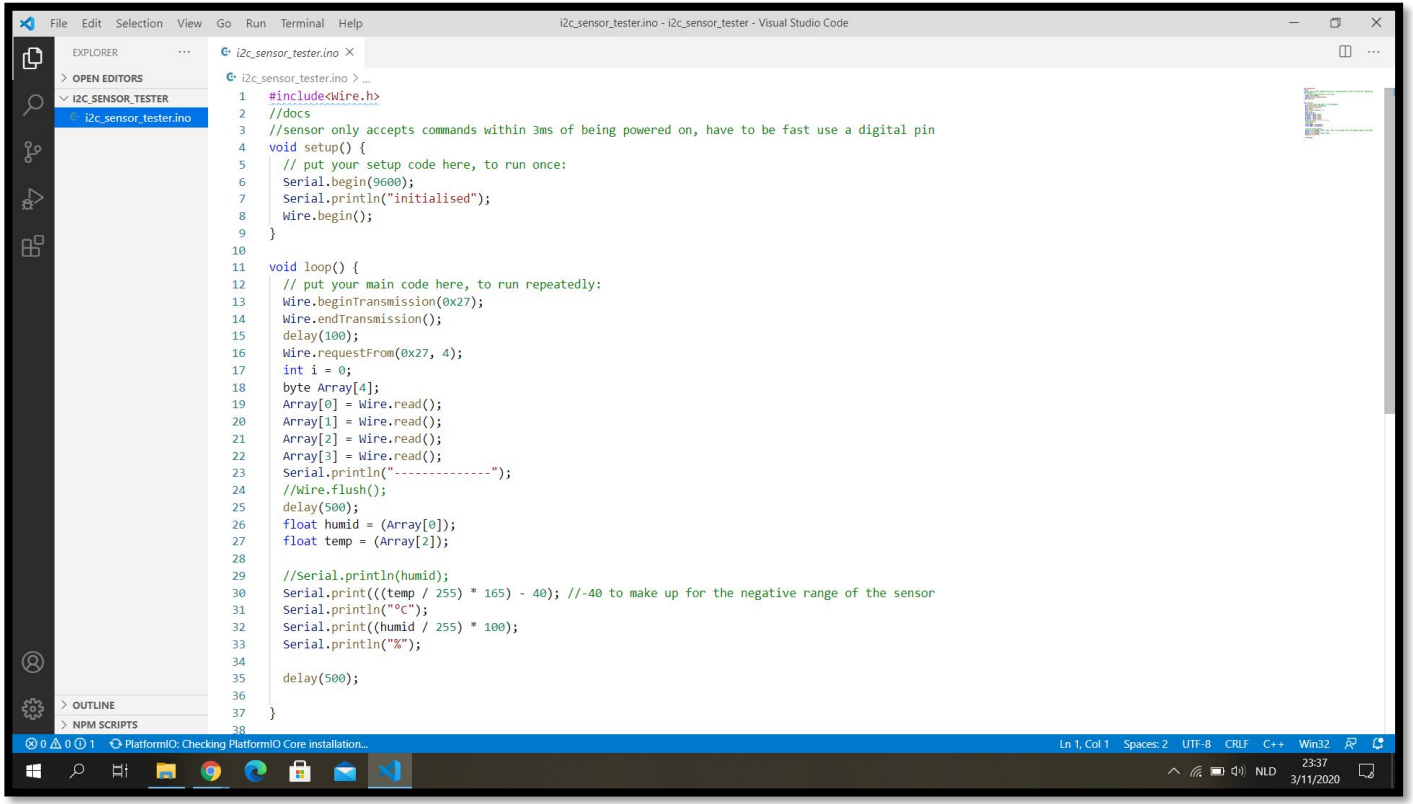
Testen HIH8xxx





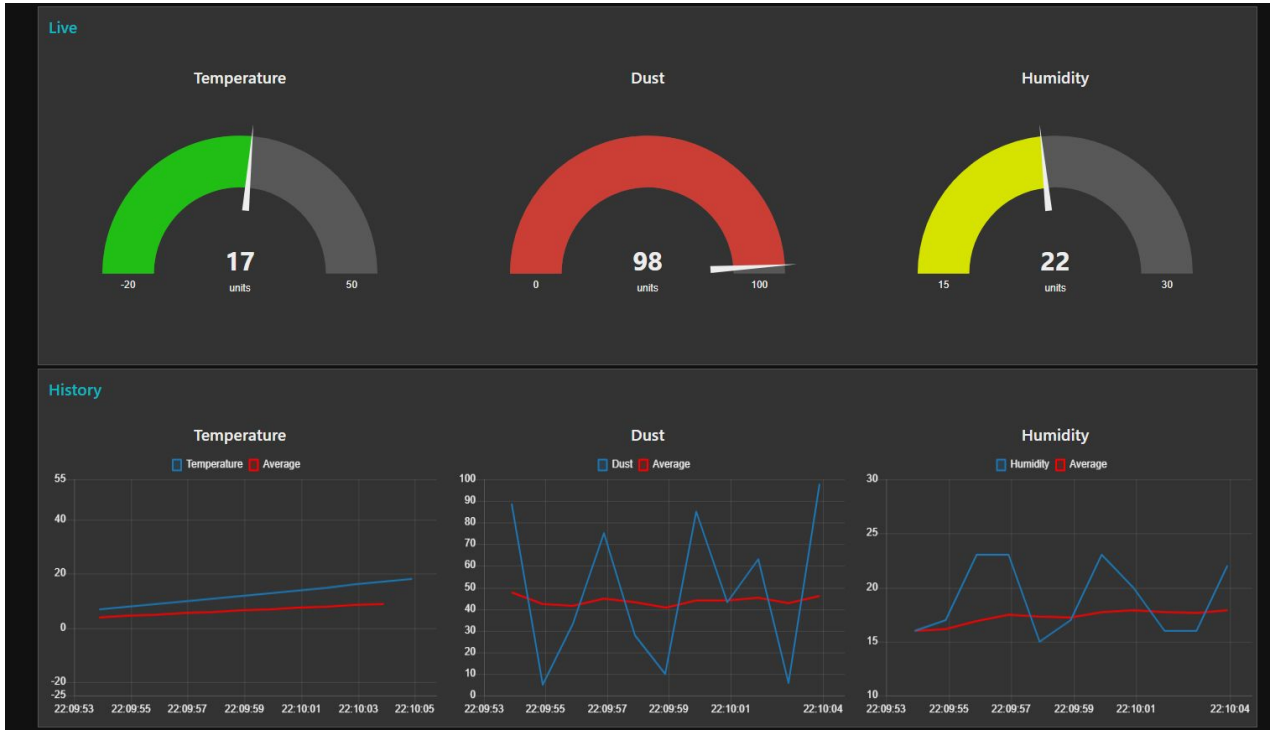
HIH8xxx

Testen HIH8xxx

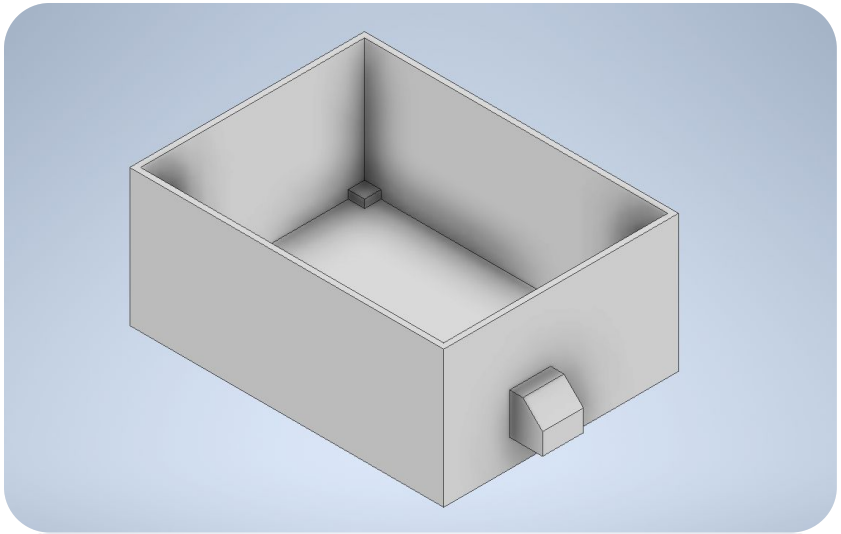


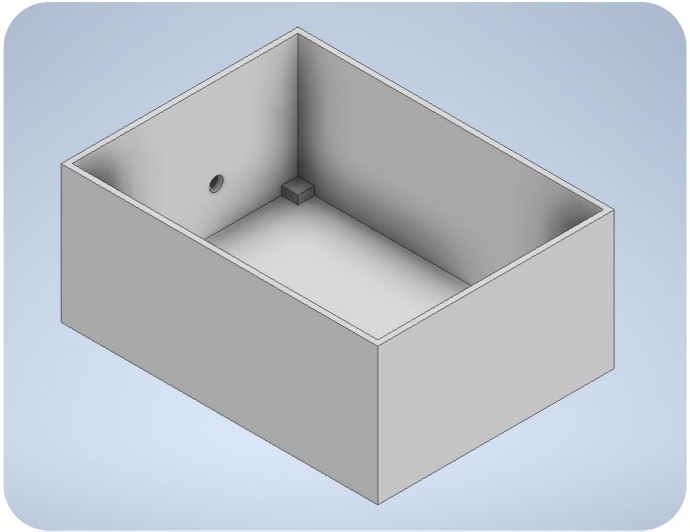
Frond-end

- Node-Red application

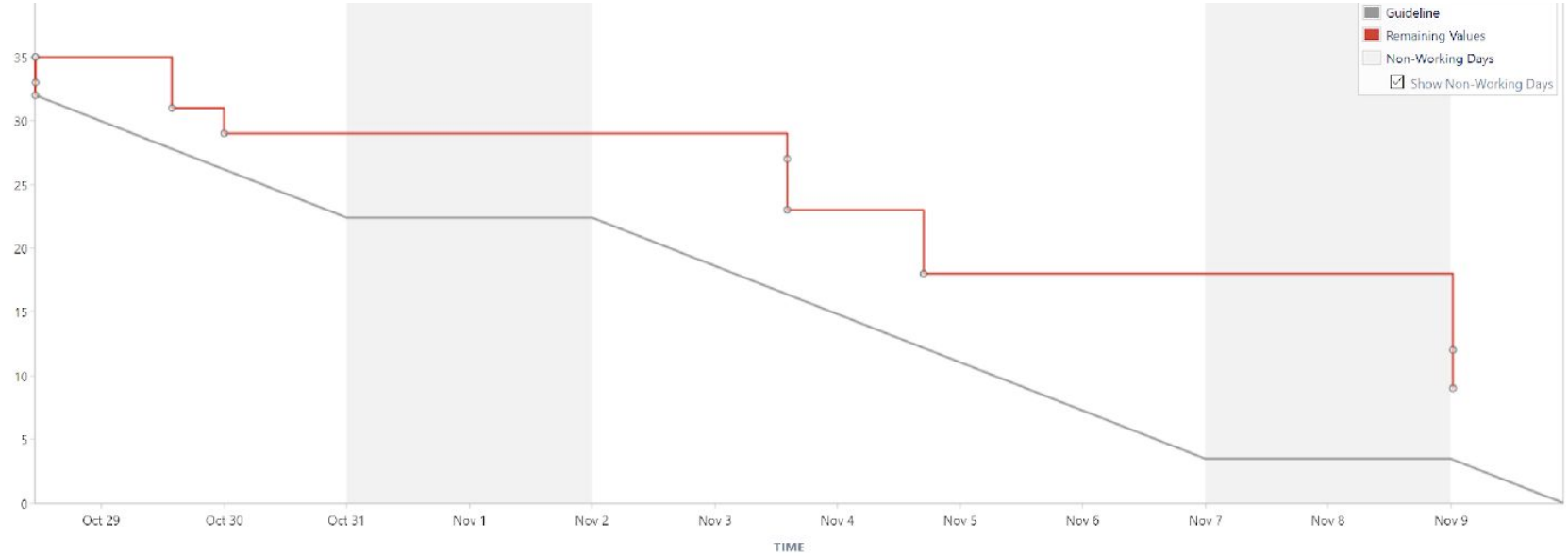


3D Print





Burndown chart



Stand van zaken

- PCB ontwerpen Zonnepaneel sprint 4
- PCB solderen sprint 4