TEMPERATURE SENSOR

HUMIDITY SENSOR

finale Presentatie

Air Quality Control Sensor 2

Introductie Teamleden

Keno Van Deuren

- Jira
- Testing
- Hands On
- Front-End
- LoRaWAN
- Frame

Quinten Van Ginderen

- Programming Sensors
- Hands On

Vital Volckaerts

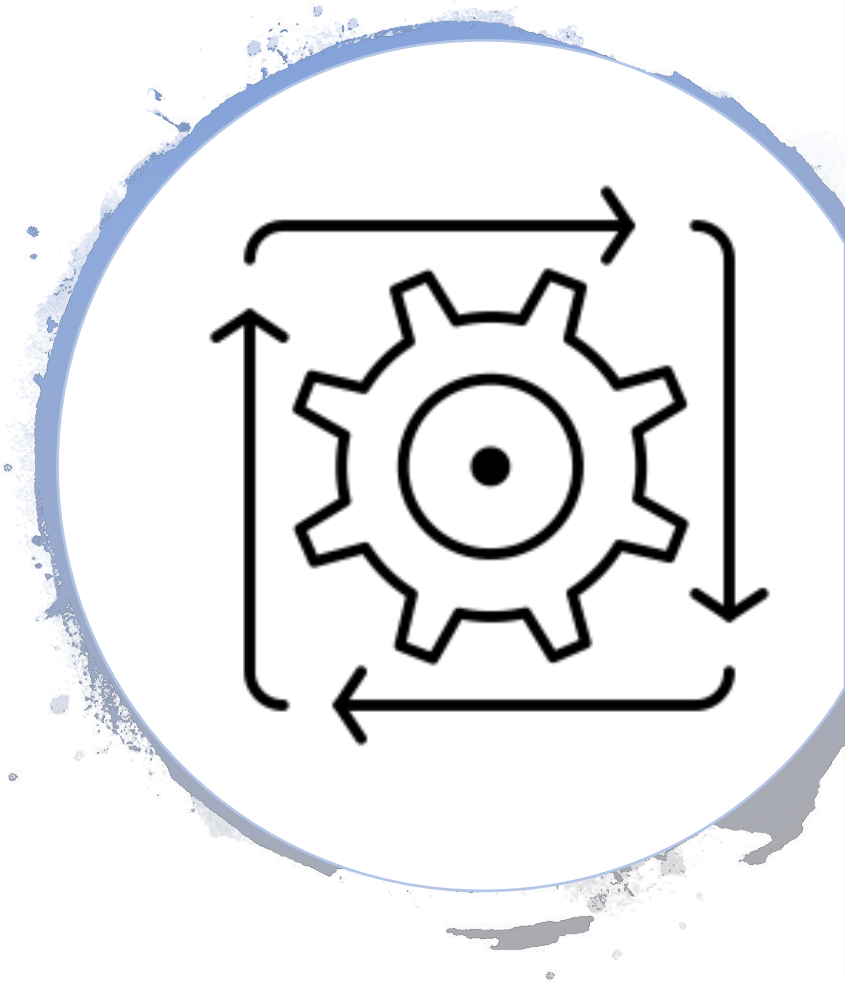
- PCB Design
- Testing
- Programming Sensors

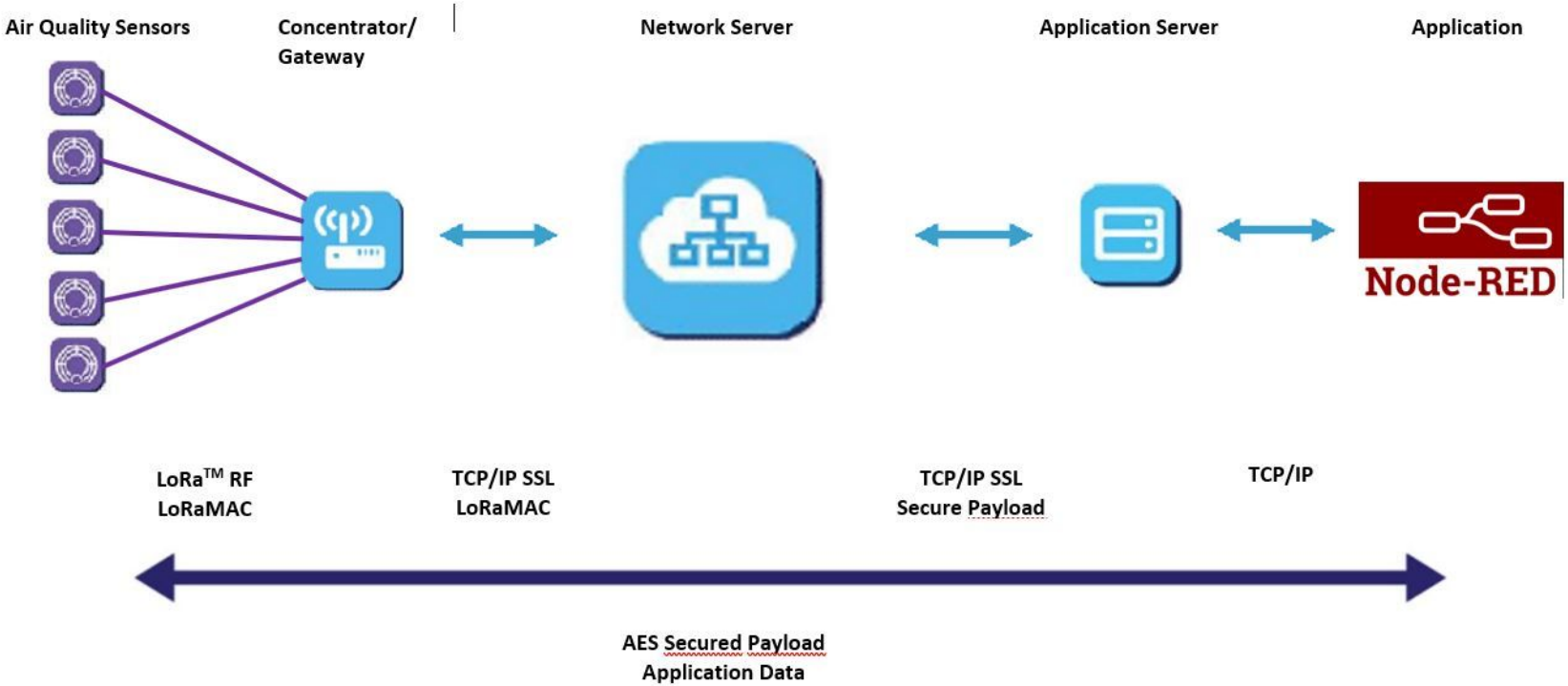
Wat is ons project?

- 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

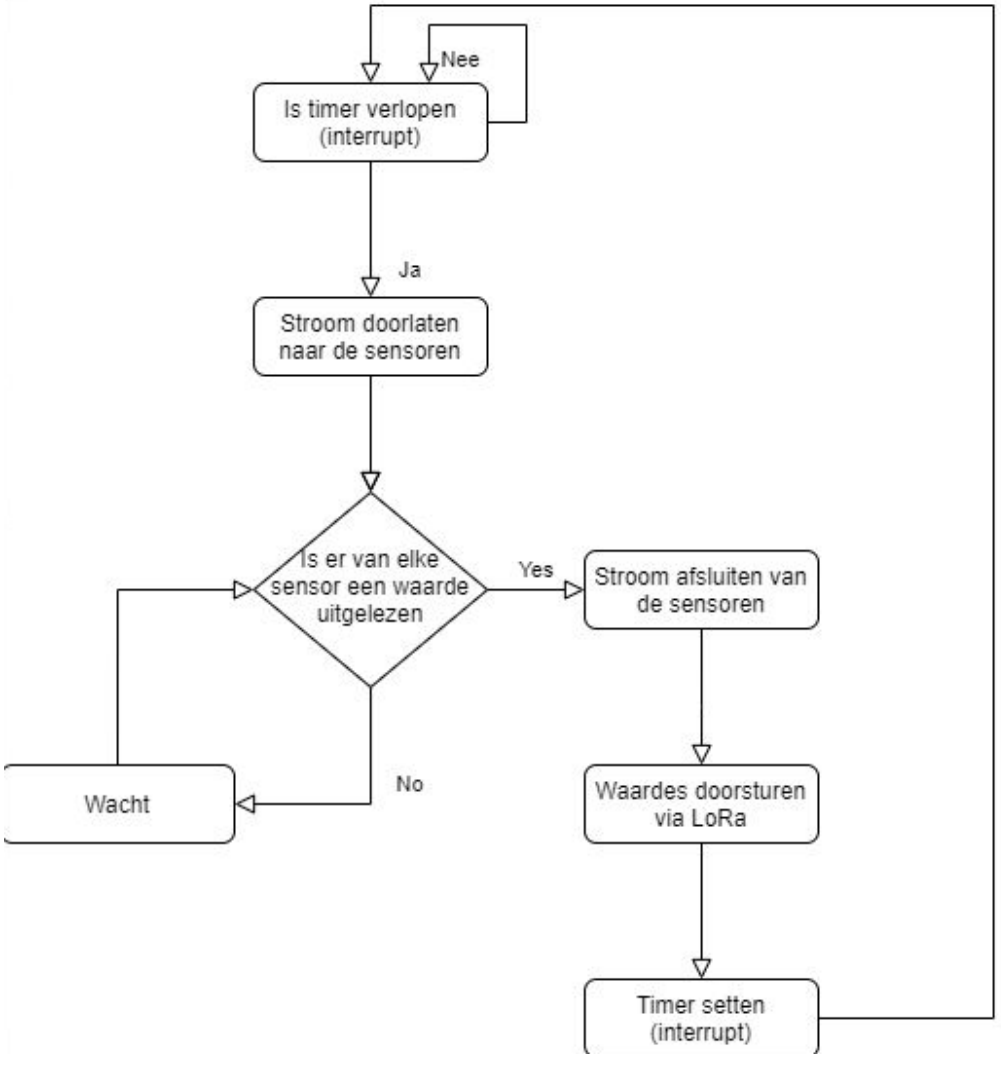
Algemene Workflow

- Uitlezen van sensoren
- opsturen naar de back-end (The Things Network)
- weergeven in web applicatie (Node-Red)

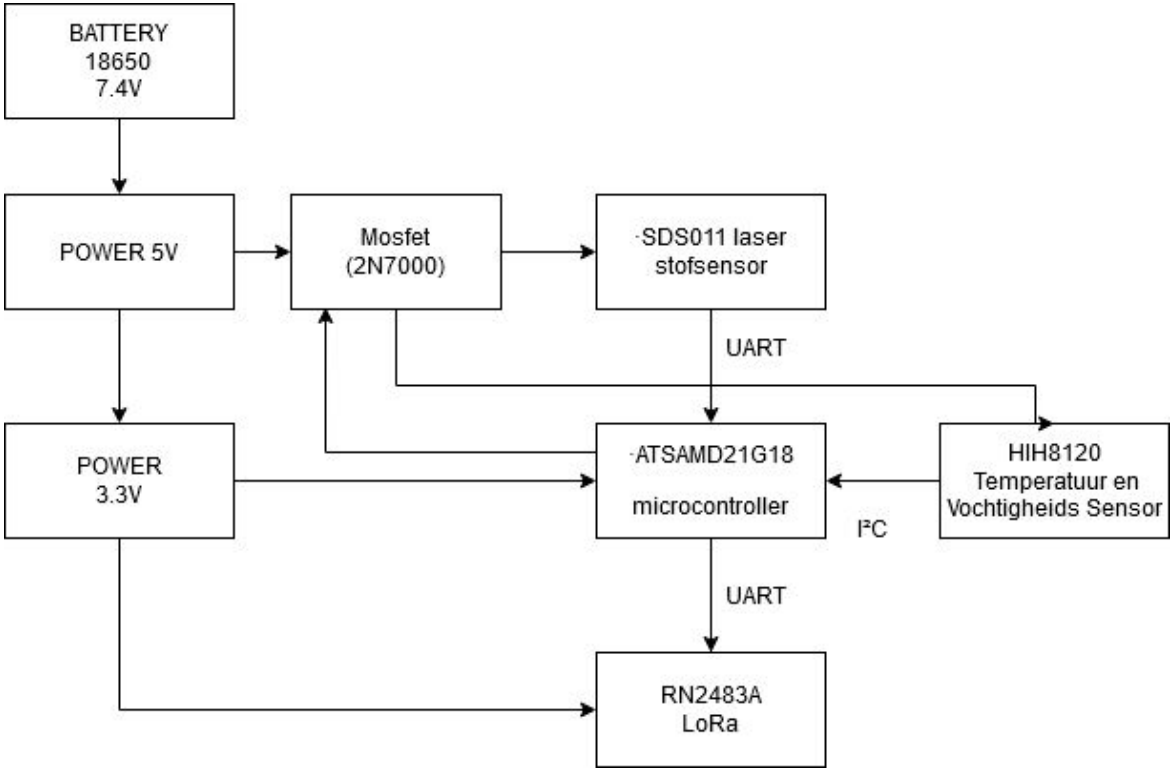


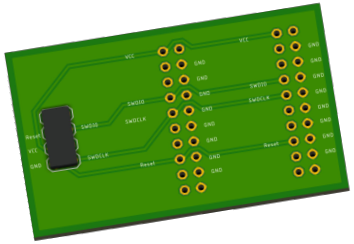

Air Quality Sensors
Concentrator/
Gateway
Network Server
Application Server
Application
Node-RED
LoRa™ RF
LoRaMAC
TCP/IP SSL
LoRaMAC
TCP/IP SSL
Secure Payload
TCP/IP
AES Secured Payload
Application Data

Flowchart

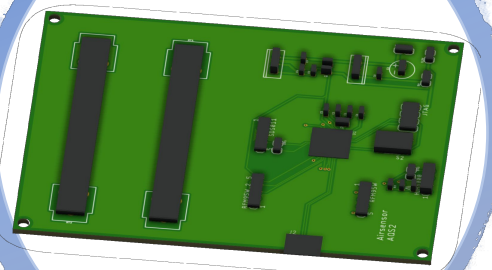

Nee
Is timer verlopen (interrupt)
Ja
Stroom doorlaten naar de sensoren
Is er van elke sensor een waarde uitgelezen
Yes
Stroom afsluiten van de sensoren
No
Wacht
Waardes doorsturen via LoRa
Timer setten (interrupt)

Blok-diagram

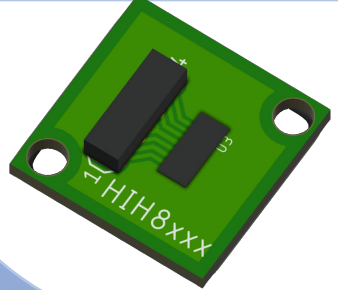




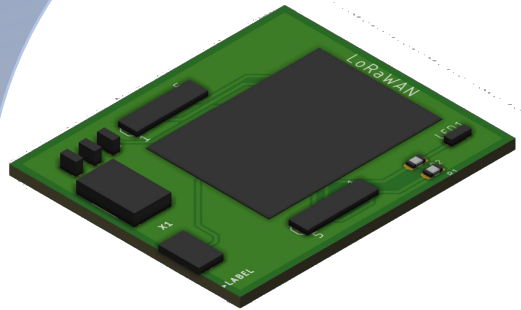
JTAG



ATSAMD21



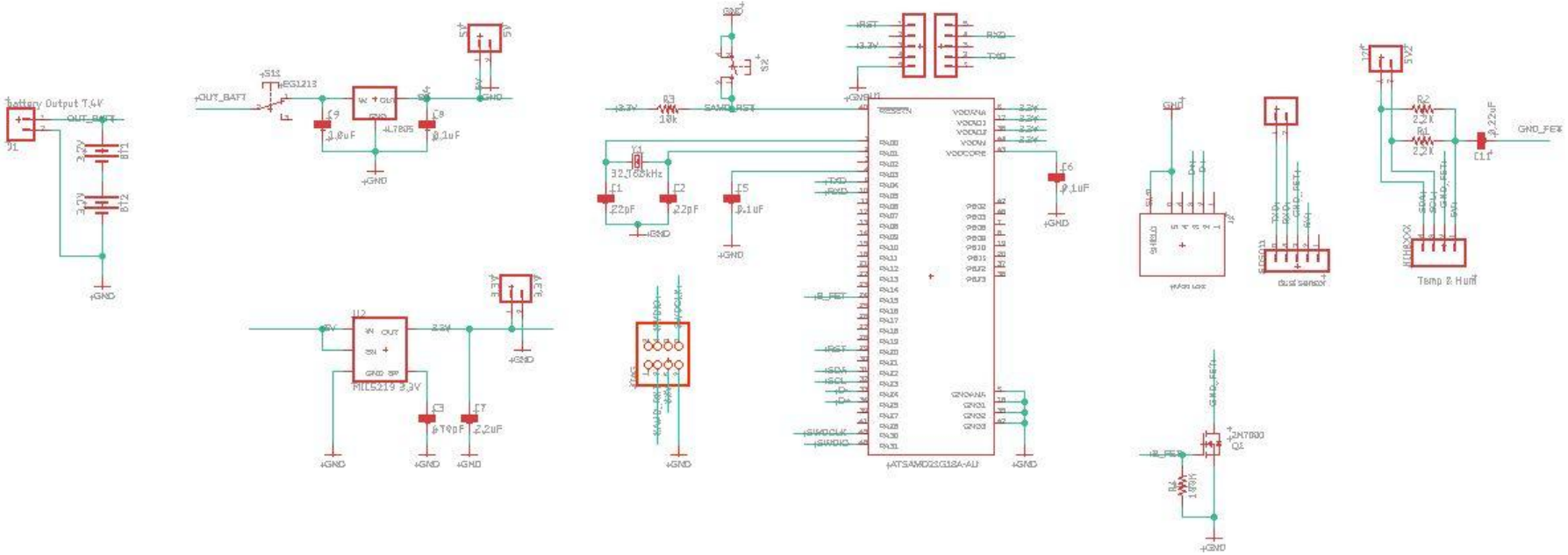
HIH8xxx



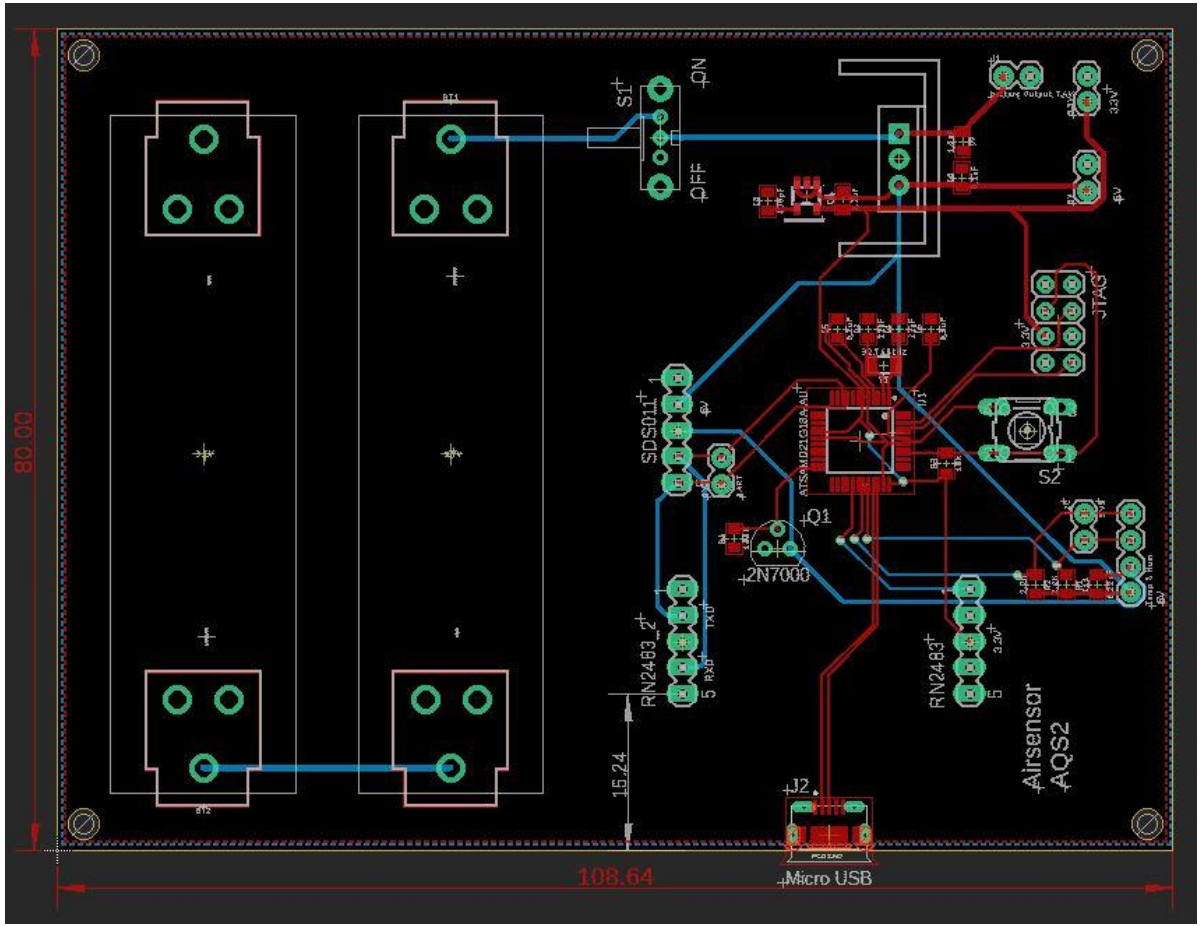
LoRaWAN

Hardware Versie 2

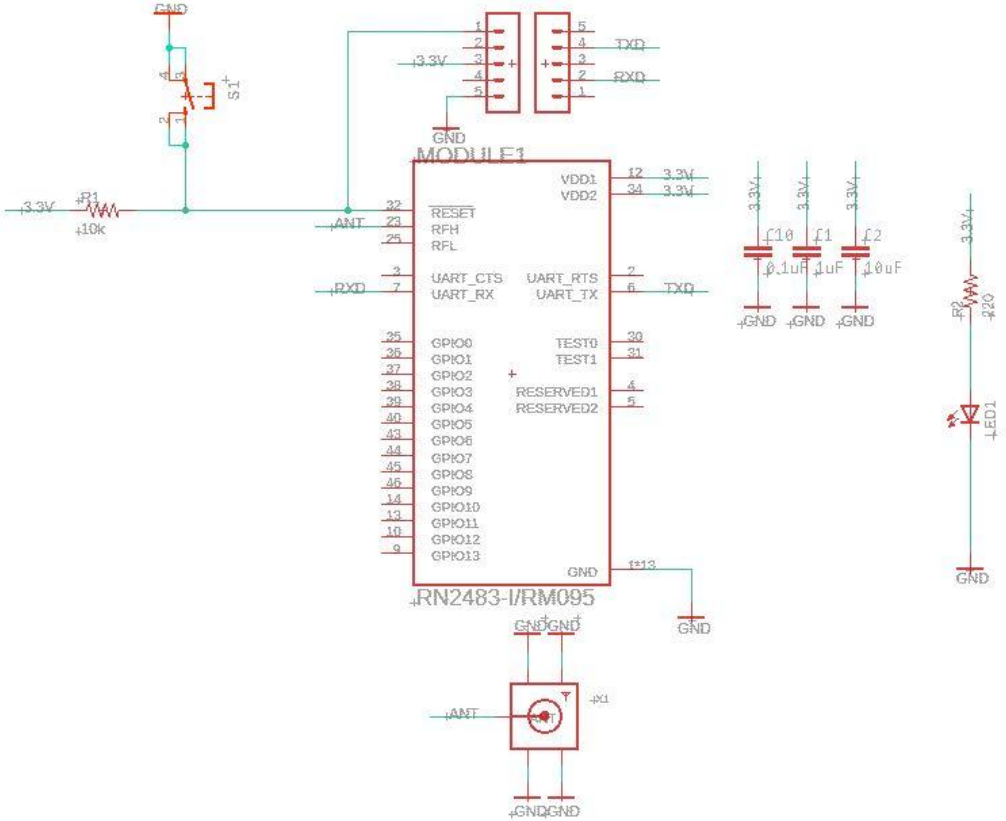
Hardware Schema AirSensor



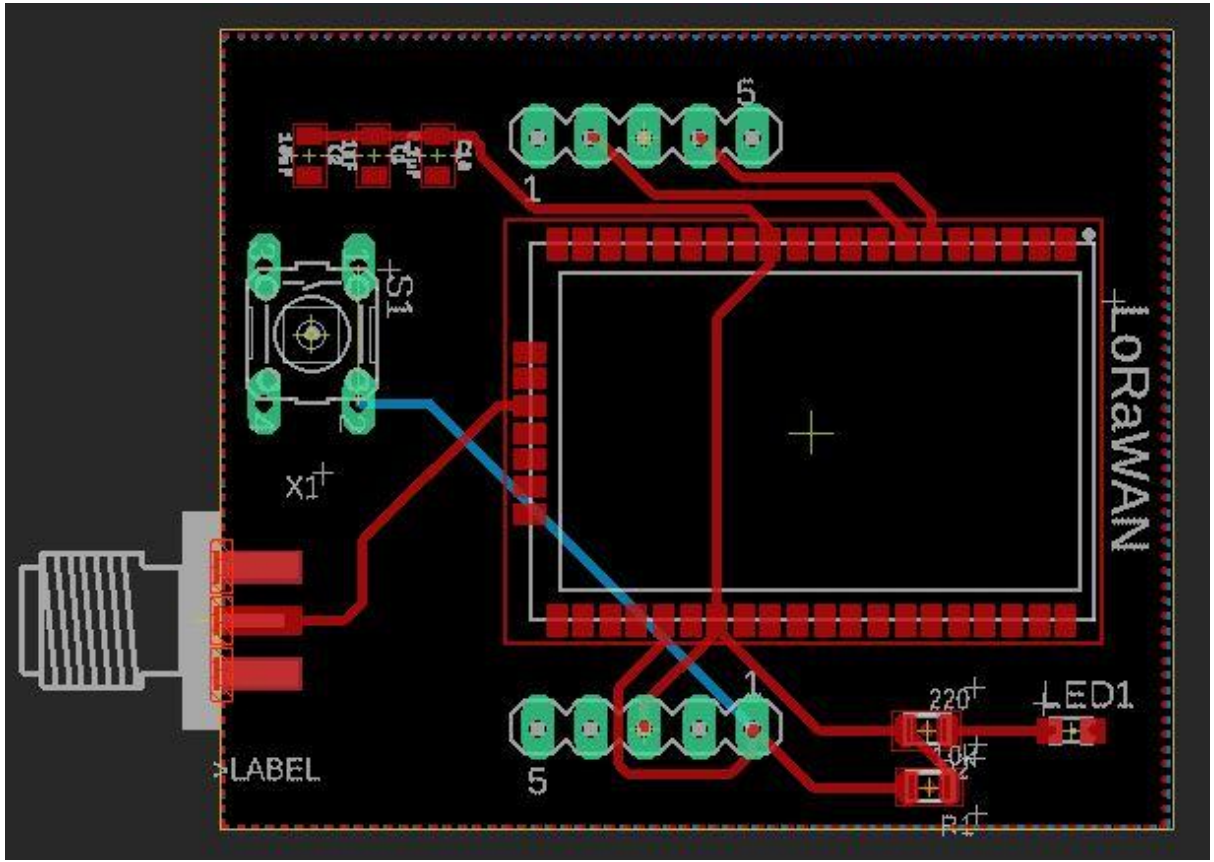
Hardware PCB AirSensor



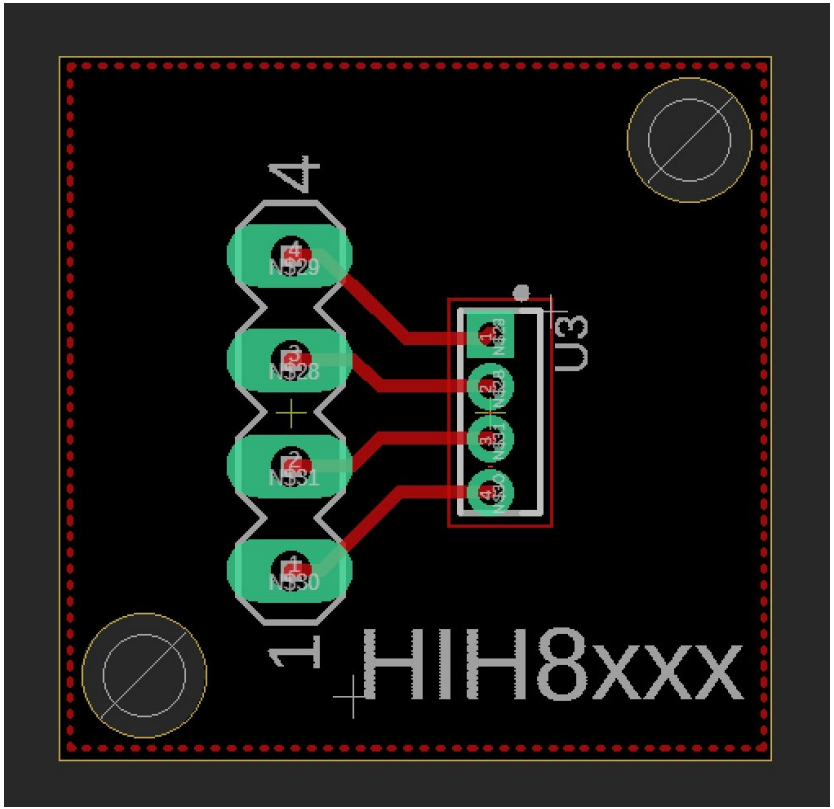
Hardware Schema LoRaWAN (RN2483A)

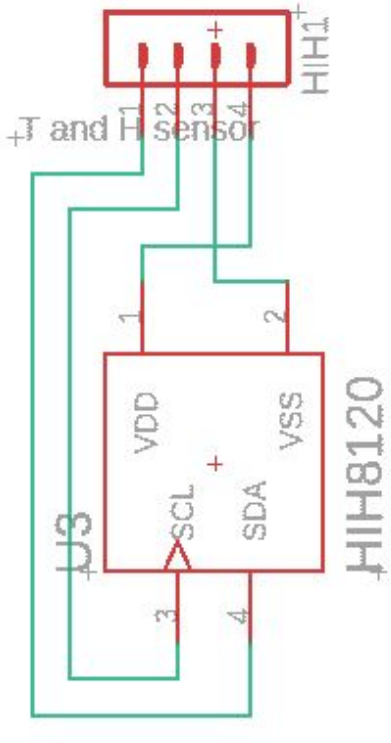


Hardware PCB LoRaWAN (RFM95)

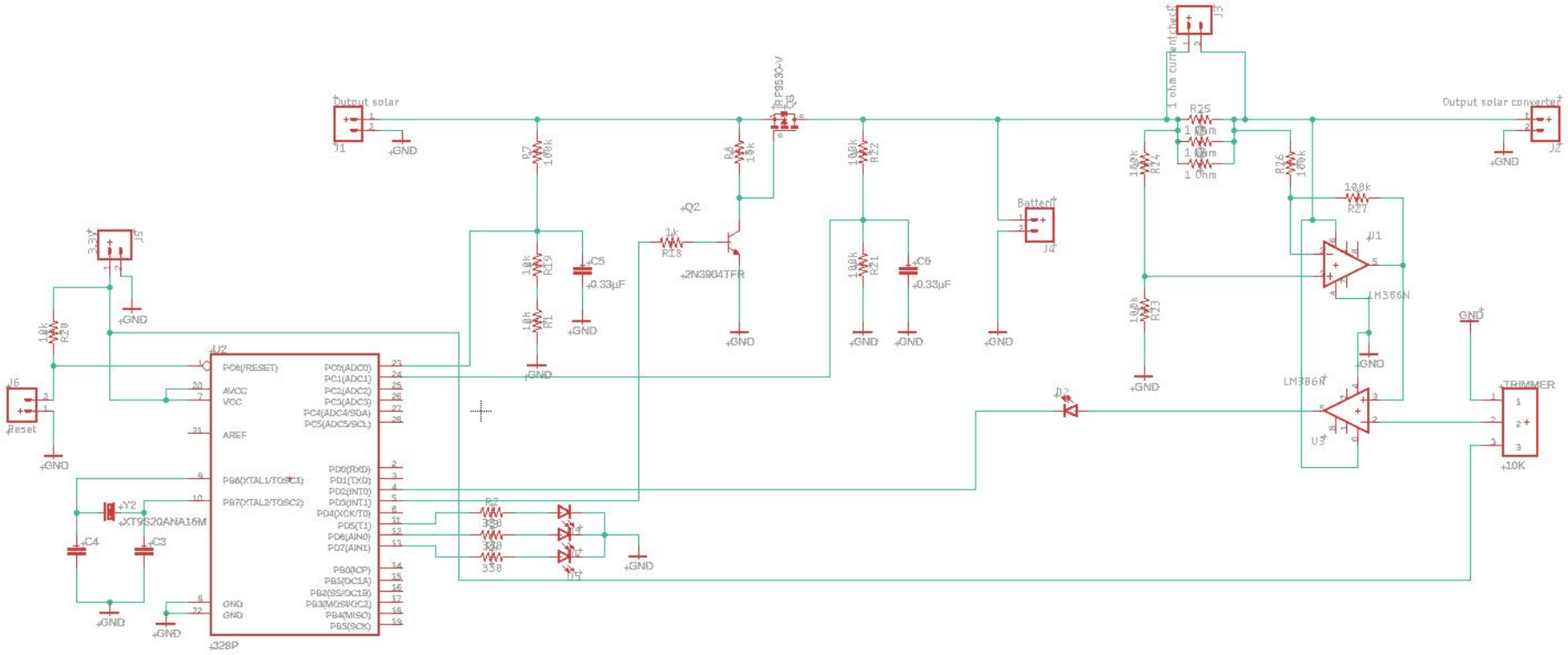


Hardware Schema/PCB HIH8xxx





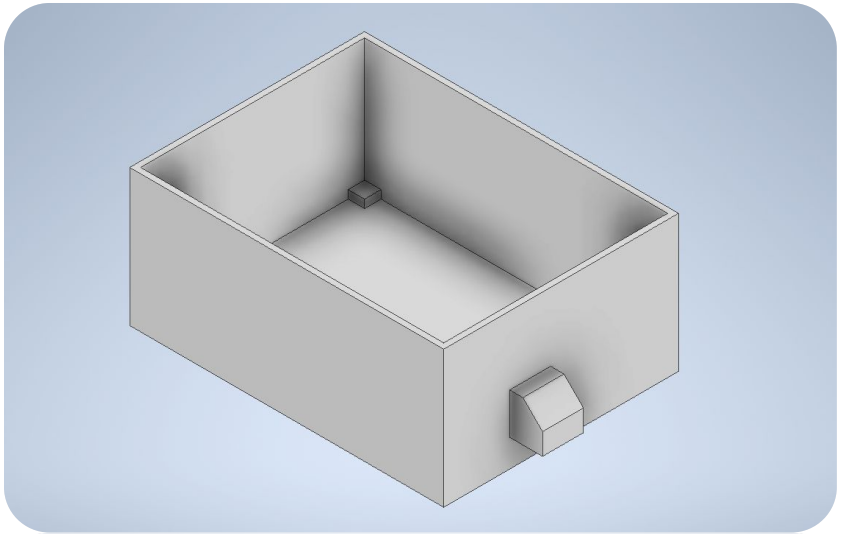
Hardware test fase Zonnepaneel

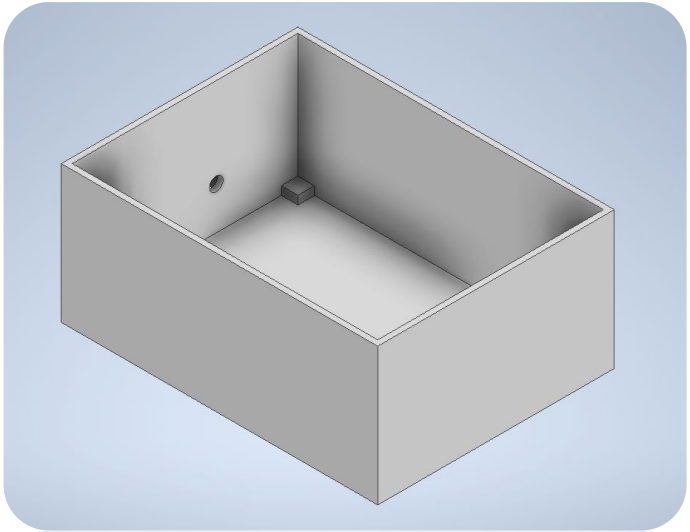


Frond-end

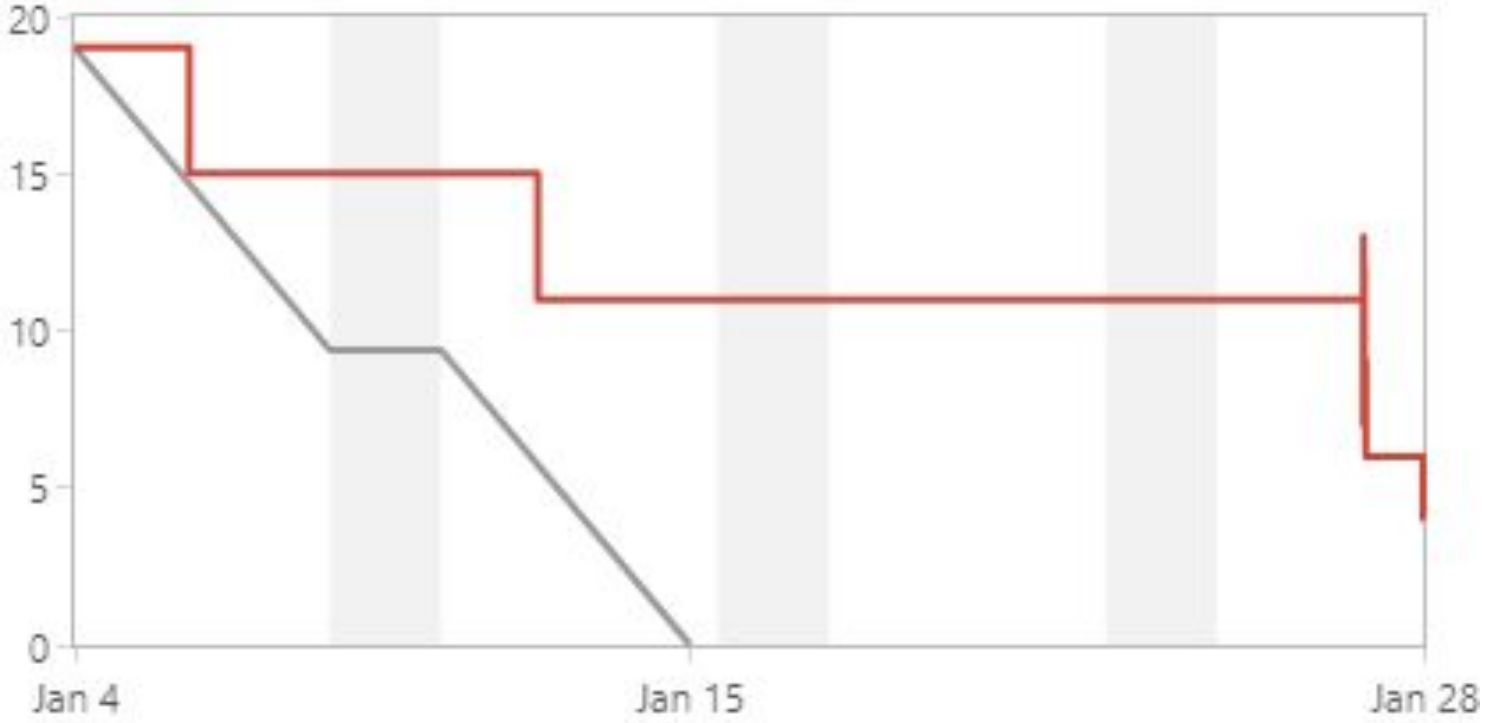
- Node-Red application

3D Print



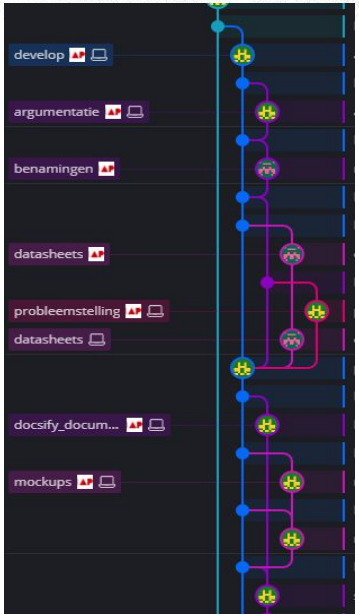


Burndown chart



GitFlow

- Master en Develop branch
- Branch op Develop per jira-issue
- Na elke sprint Develop => Master



Reflectie

- Leuk en leerrijk project
- Communicatie met teamgenoten lag goed

- Snellere overstap naar RN2483
- Moeilijkheidsgraad van testen lag te hoog (ATSAMD21)