

Sensorknoten-Netzwerk

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Studiengang: Ingenieurinformatik

Gliederung

1 Anwendungsszenario

2 LoRa

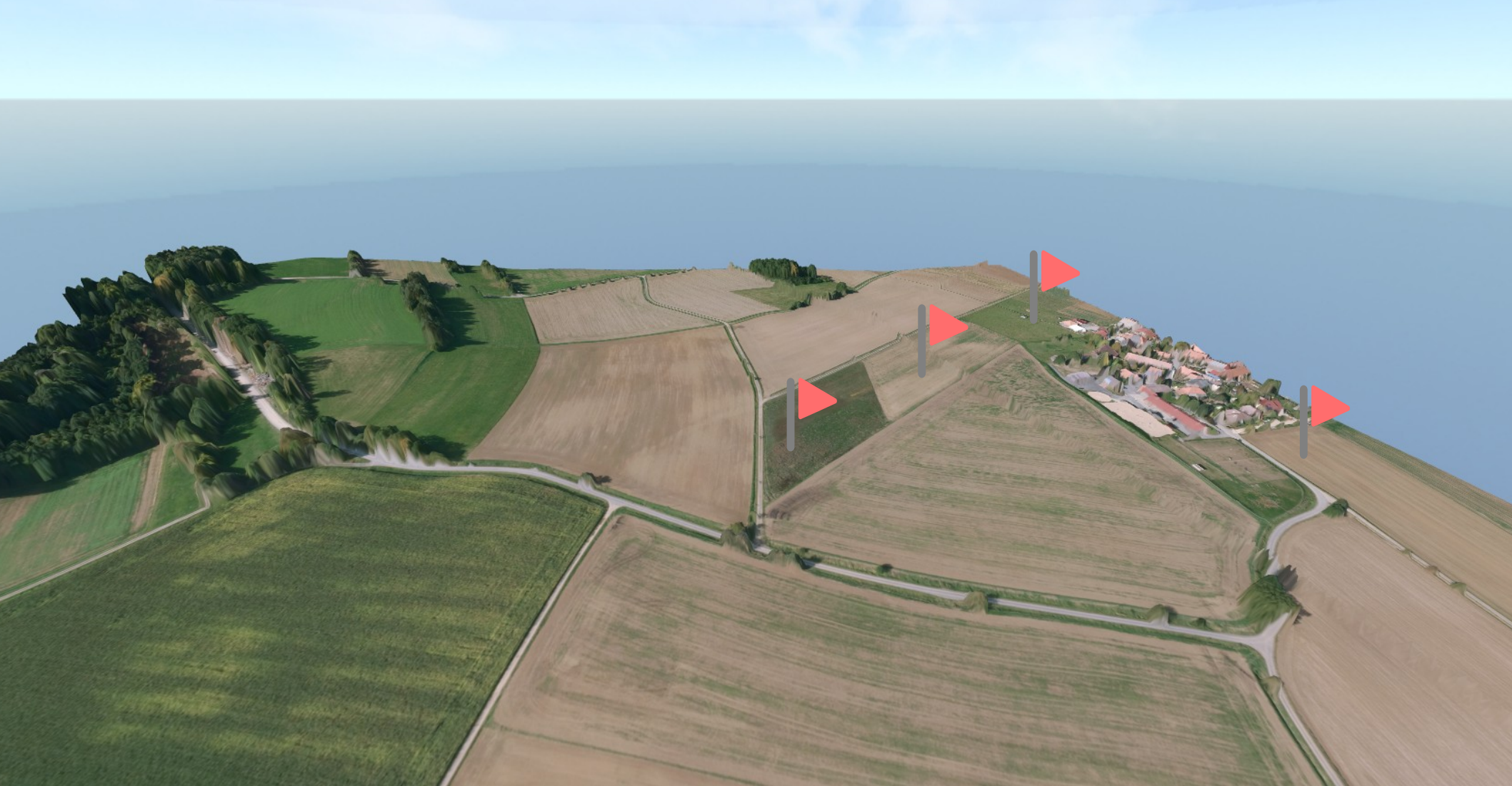
3 Umsetzung

3.1 Hardware

3.2 Software

4 Gesamttest

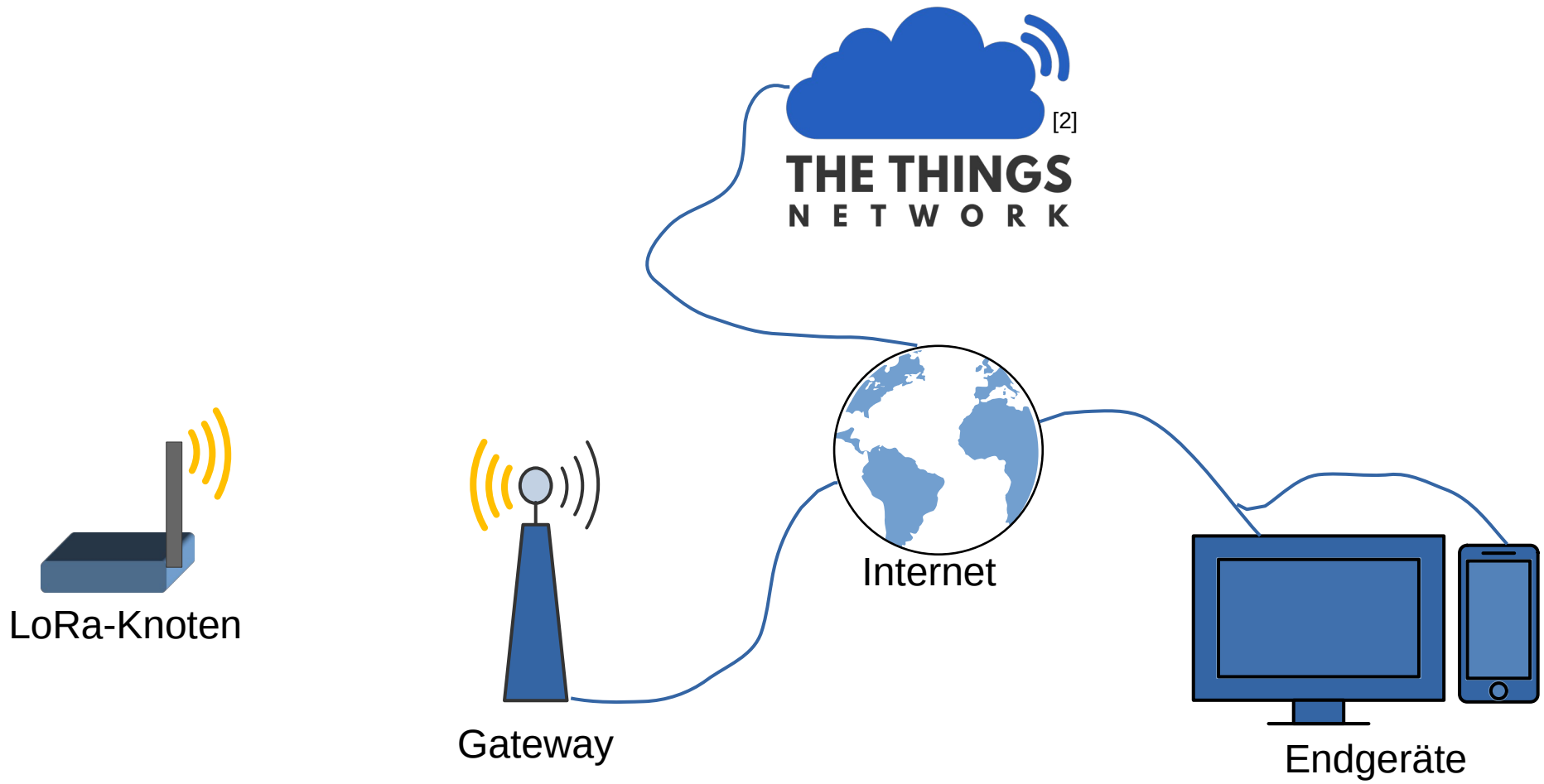
5 Ausblick

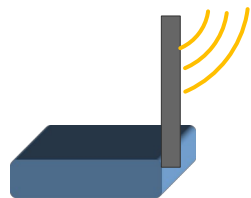


1 Anwendungsszenario

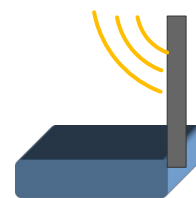


Bodensensor

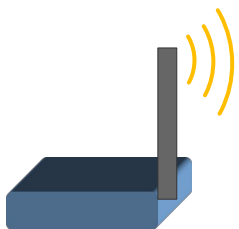




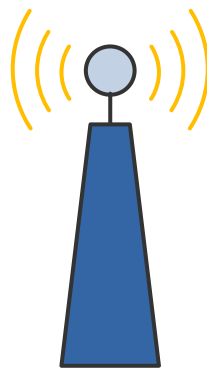
LoRa-Knoten



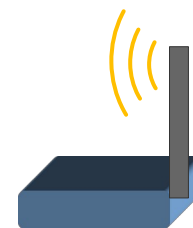
LoRa-Knoten



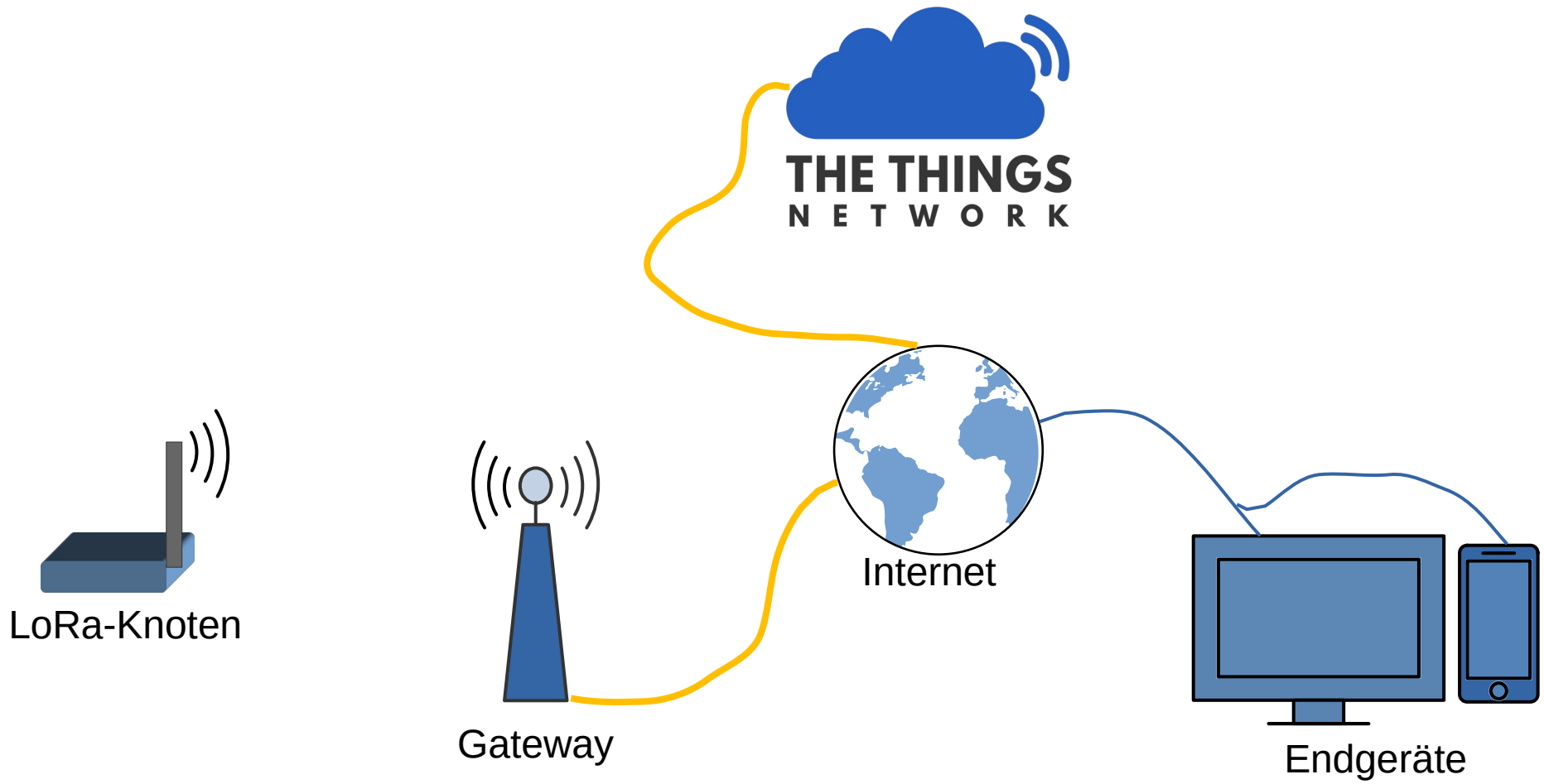
LoRa-Knoten



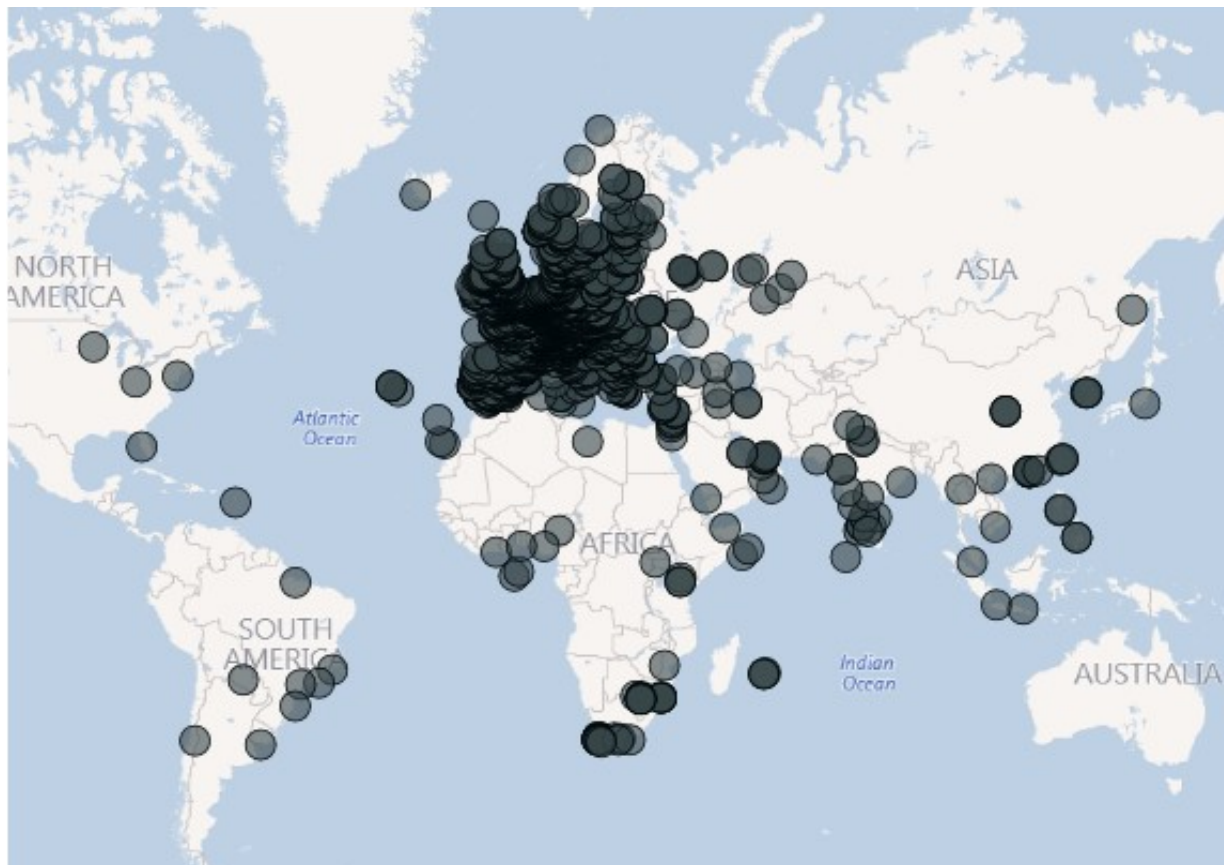
Gateway



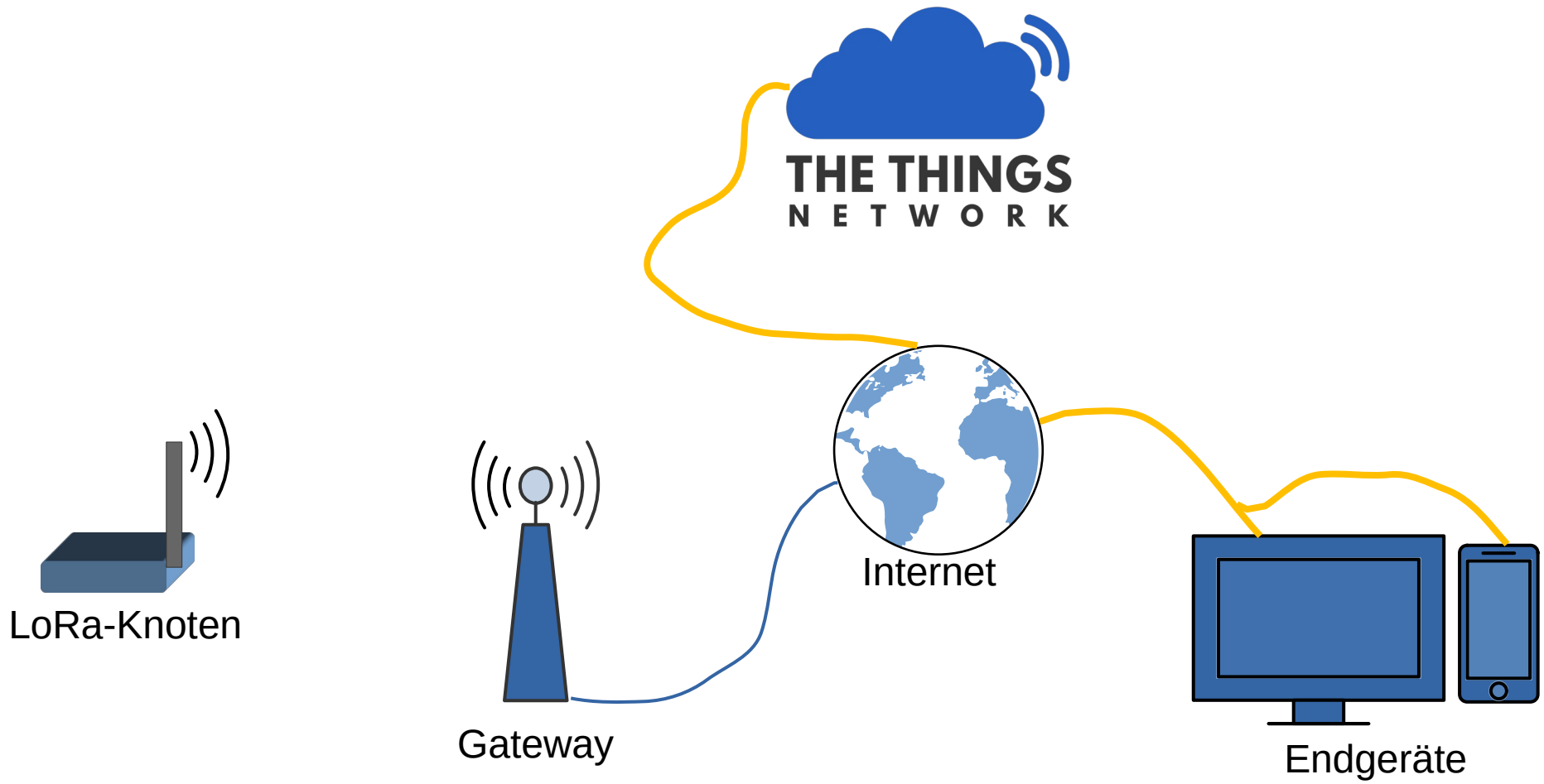
LoRa-Knoten

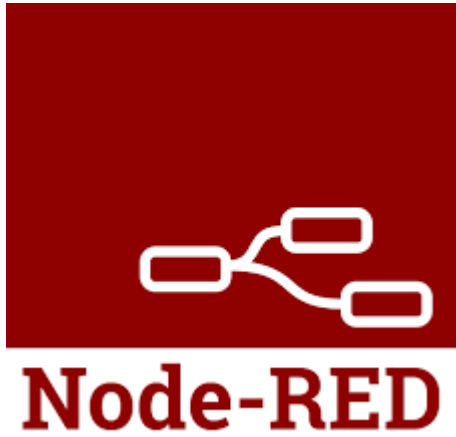


Was ist das
TheThingsNetwork?

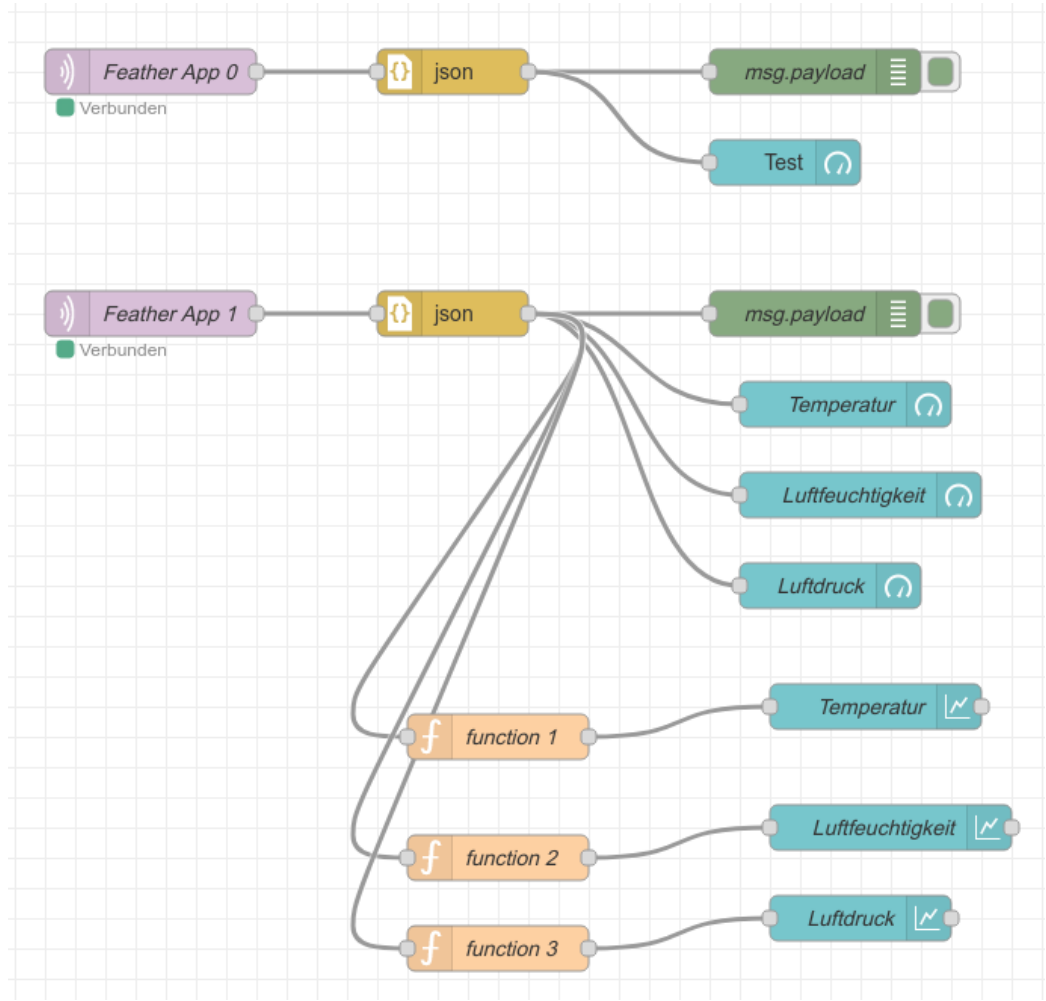


TheThingsNetwork Abdeckung

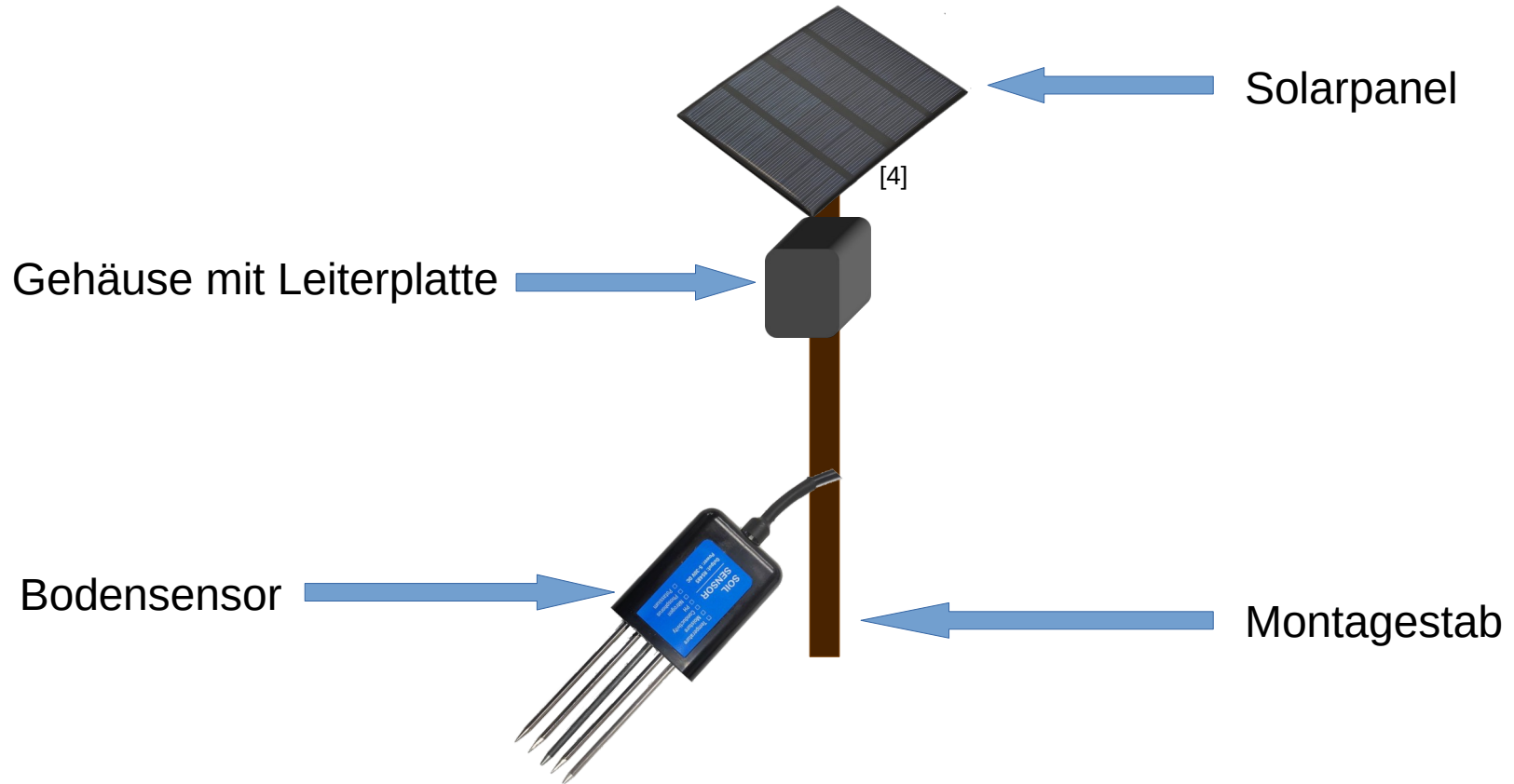


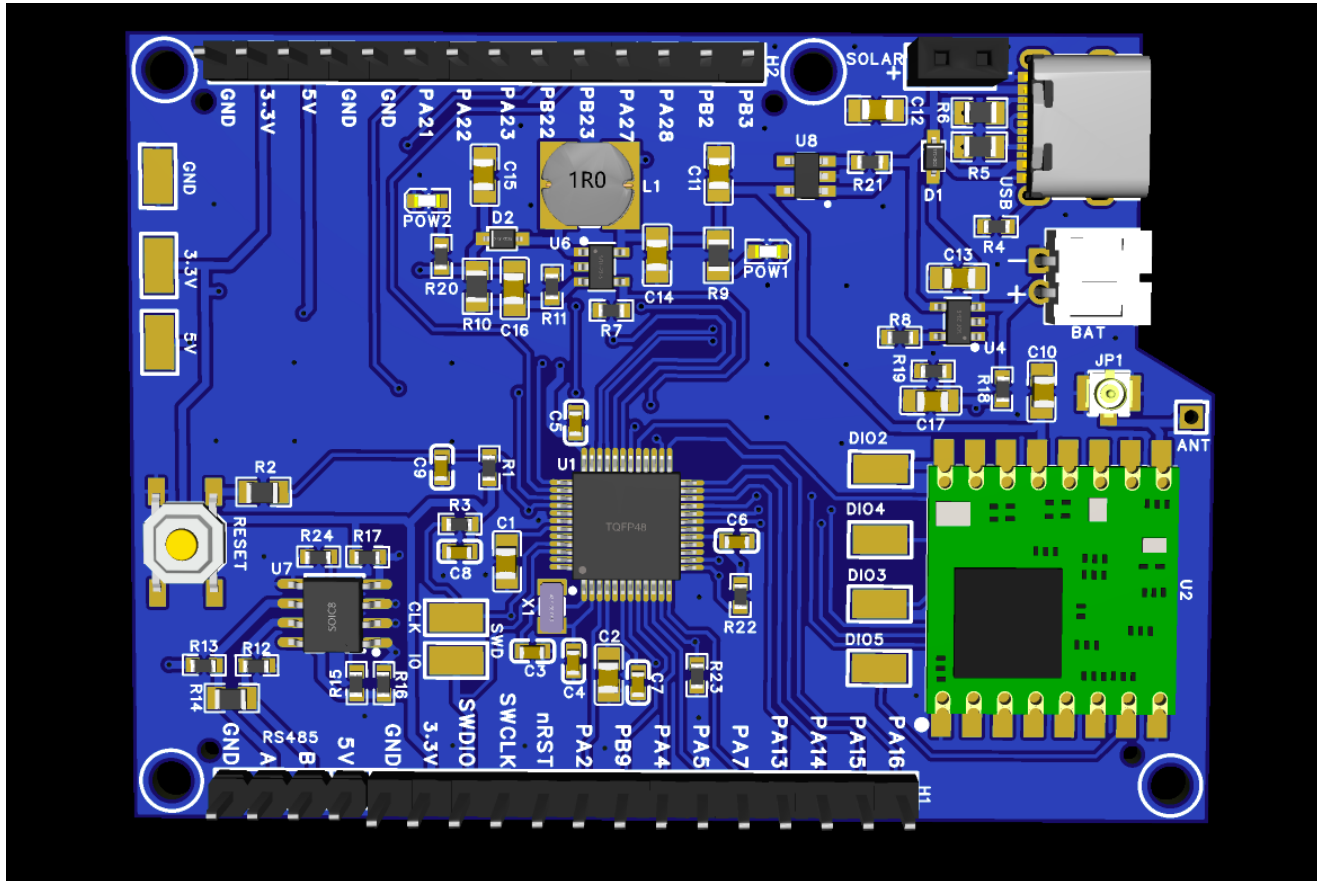


[3]



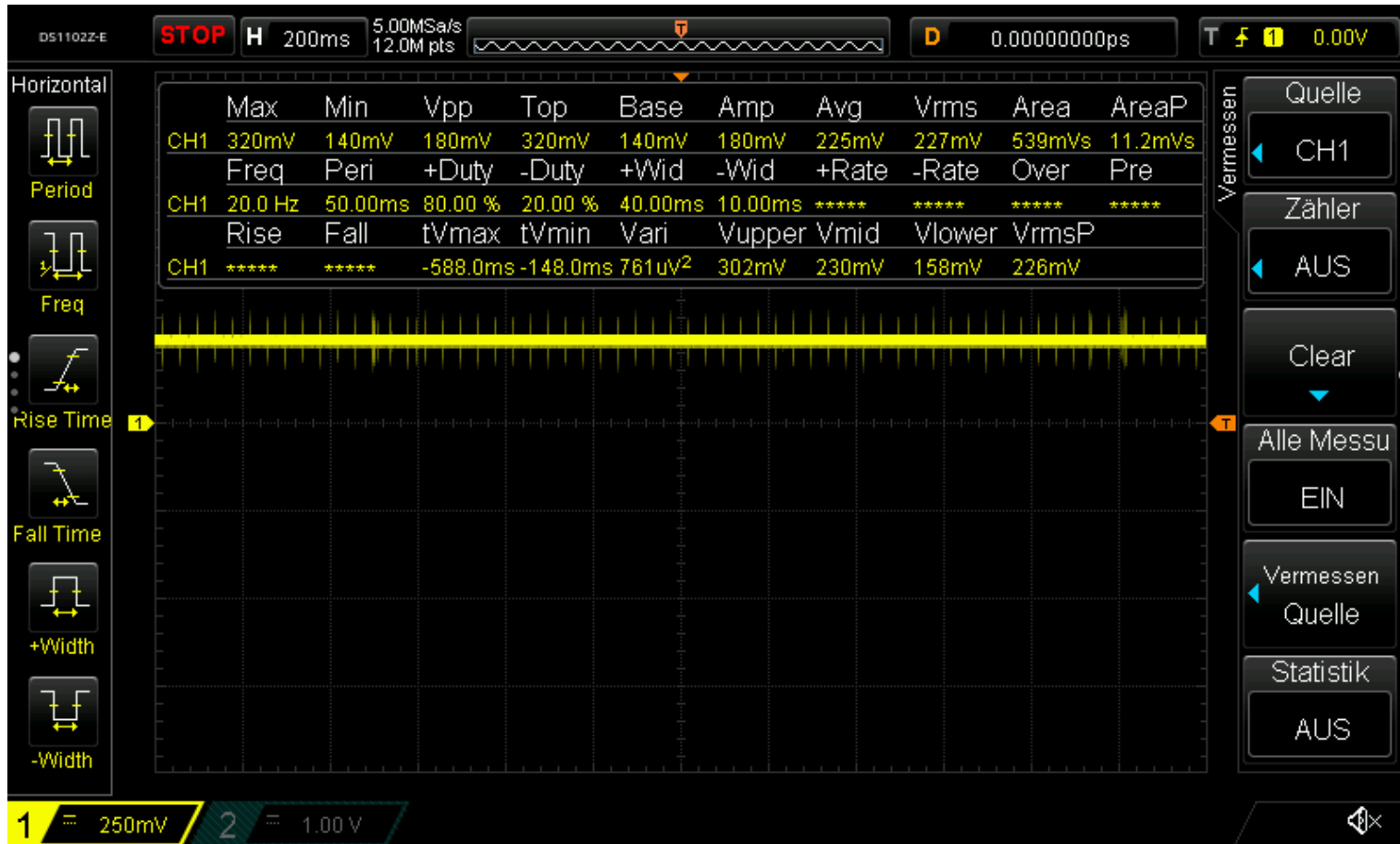
3 Umsetzung





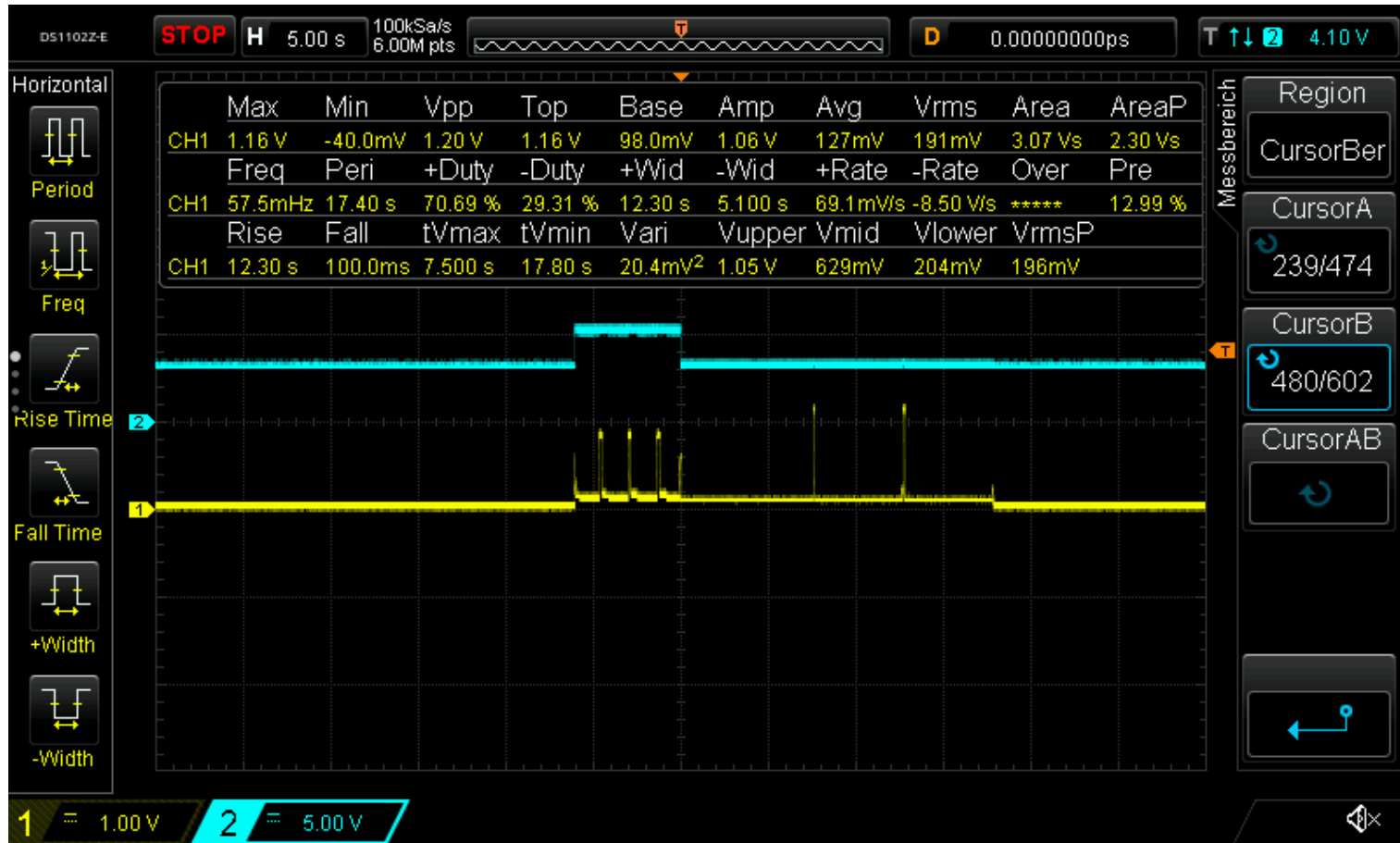
Leiterplattenentwurf

3.1 Hardware



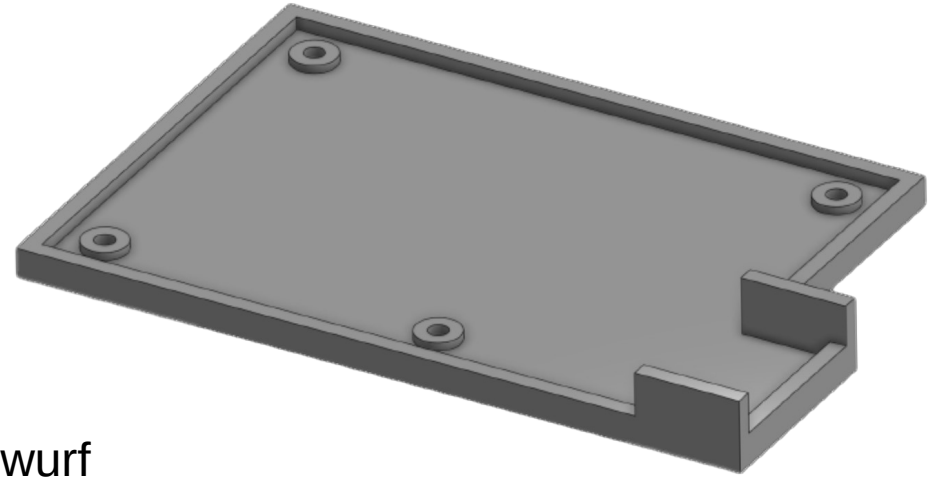
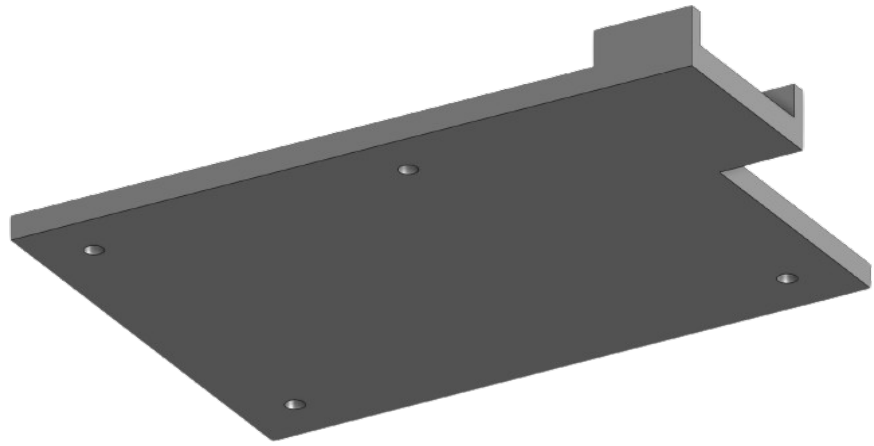
Messung des deep-sleep Stromes

3.1 Hardware

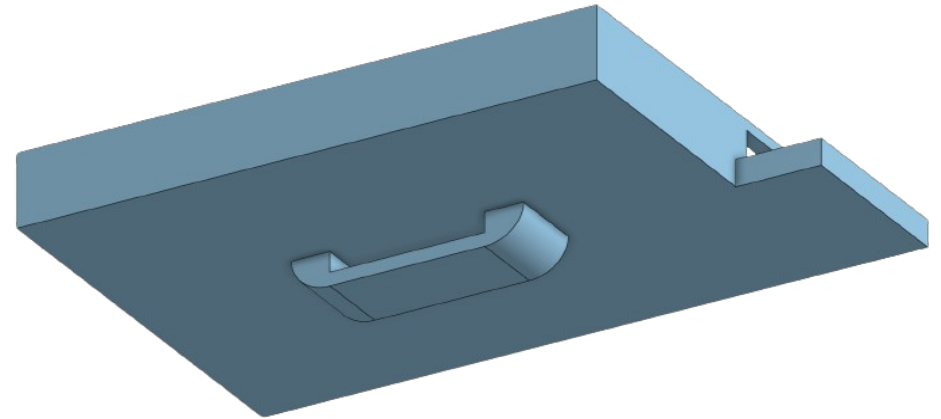
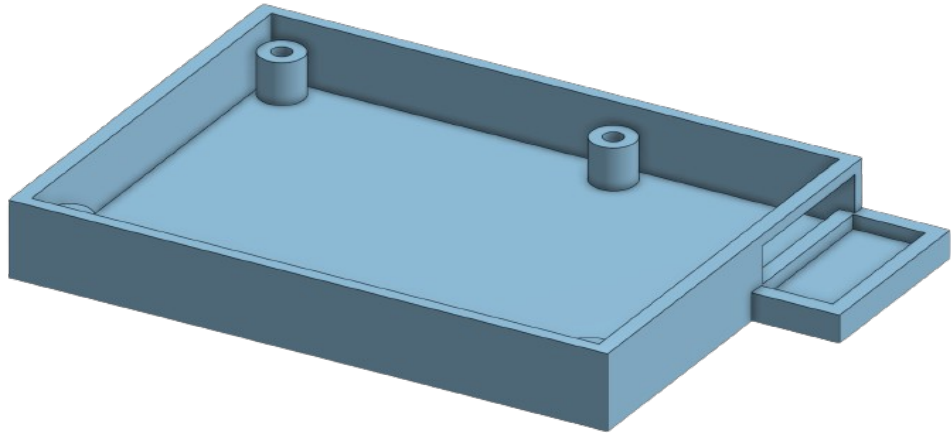


Messung des wake-up Stromes

3.1 Hardware



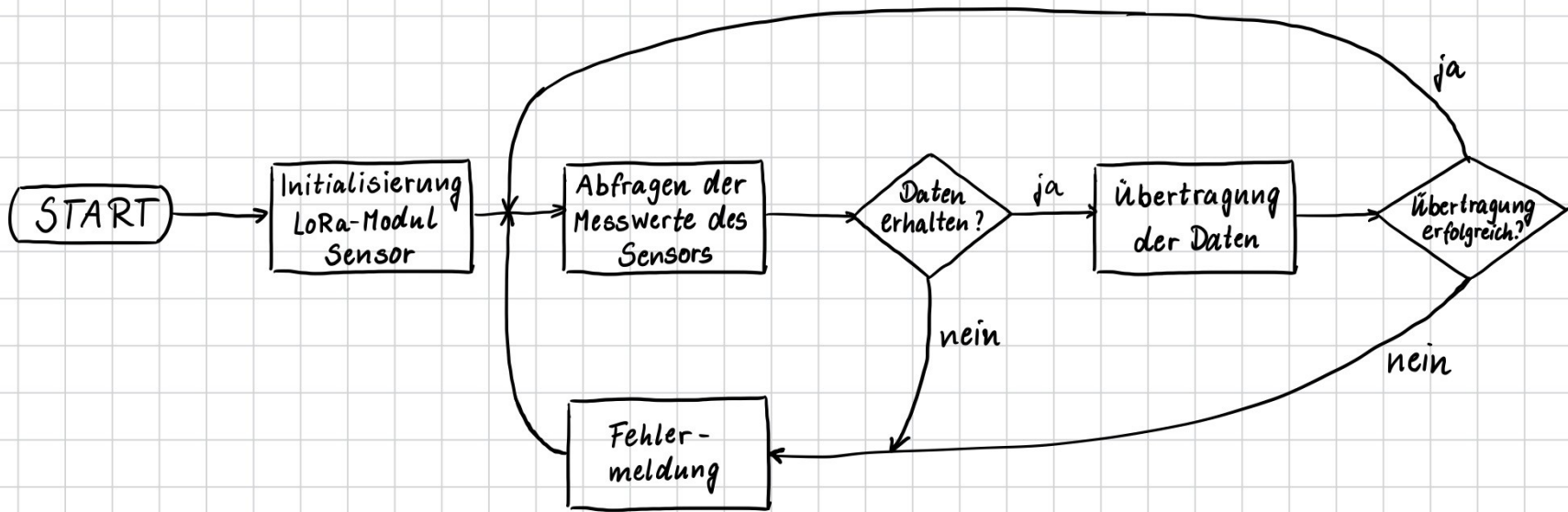
Gehäuseentwurf





Gehäuse Test

3.1 Hardware



Ablaufplan Mikrocontrollersoftware



Datenvisualisierung auf InfluxDB Dashboard

3.2 Software

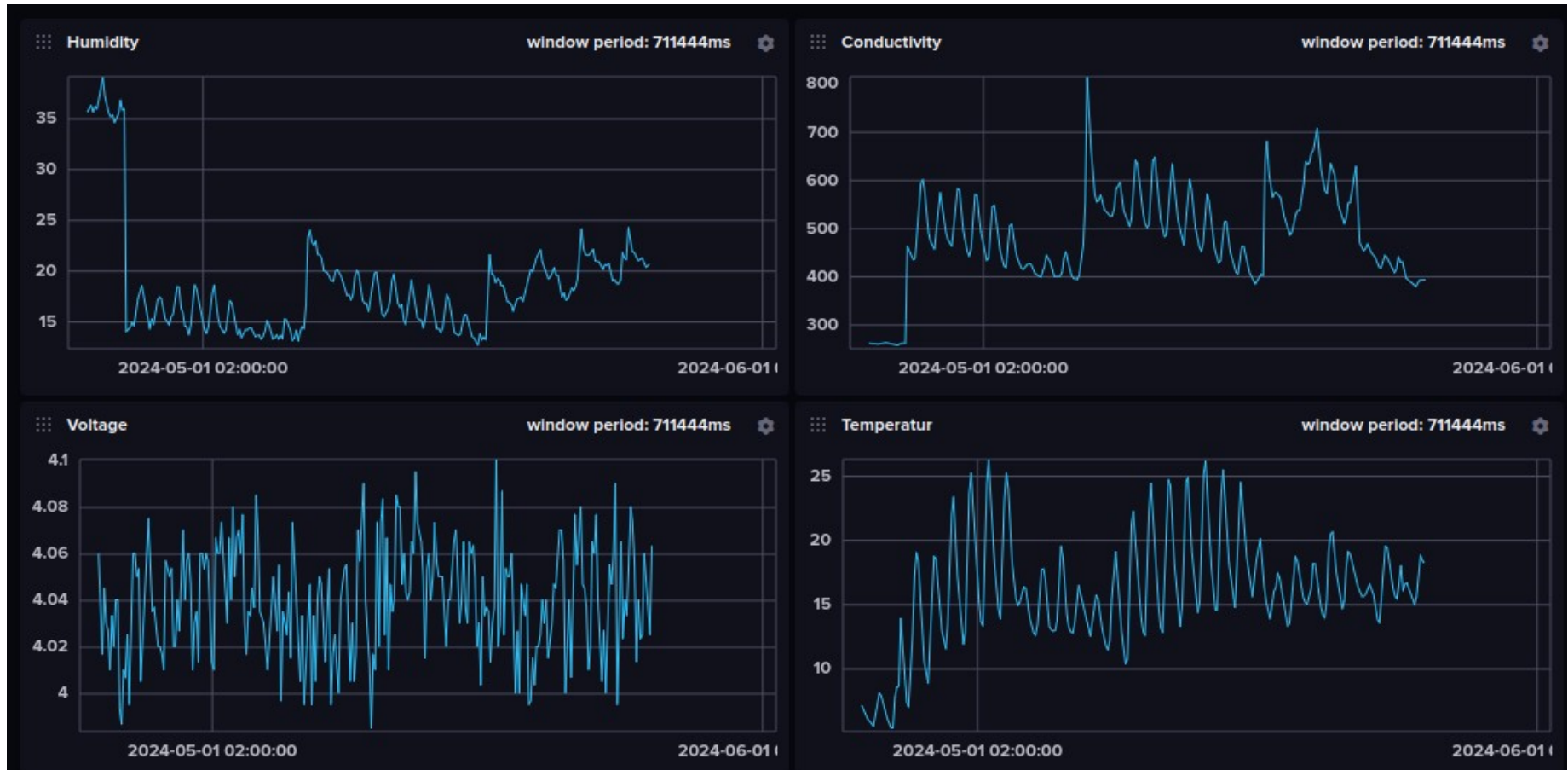


Vision - Feldvisualisierung im Web

3.2 Software

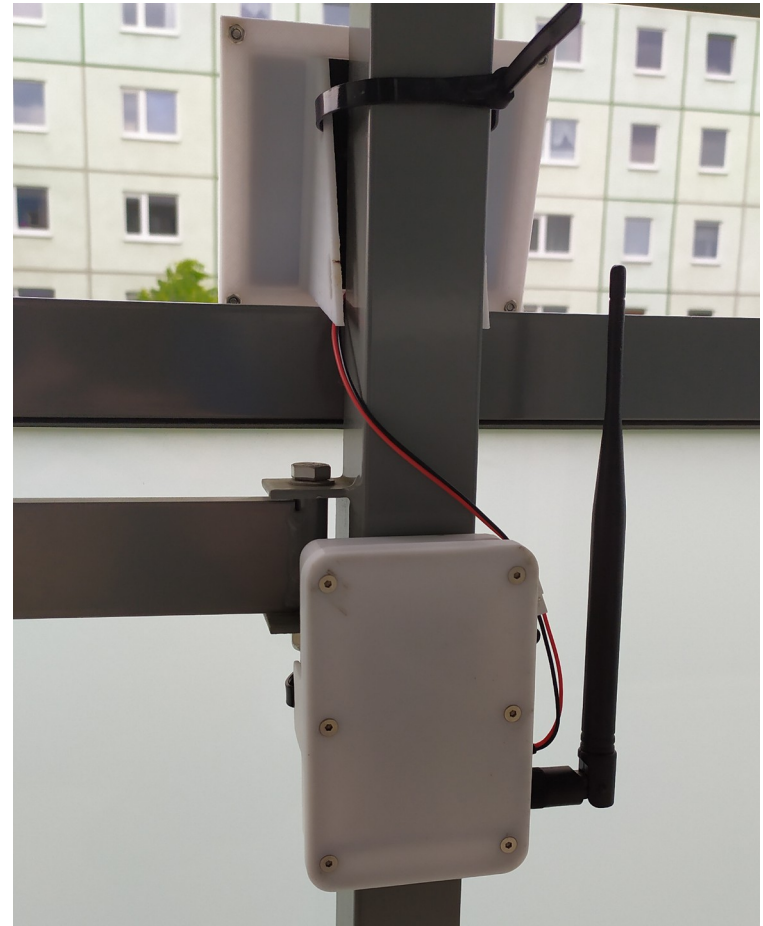
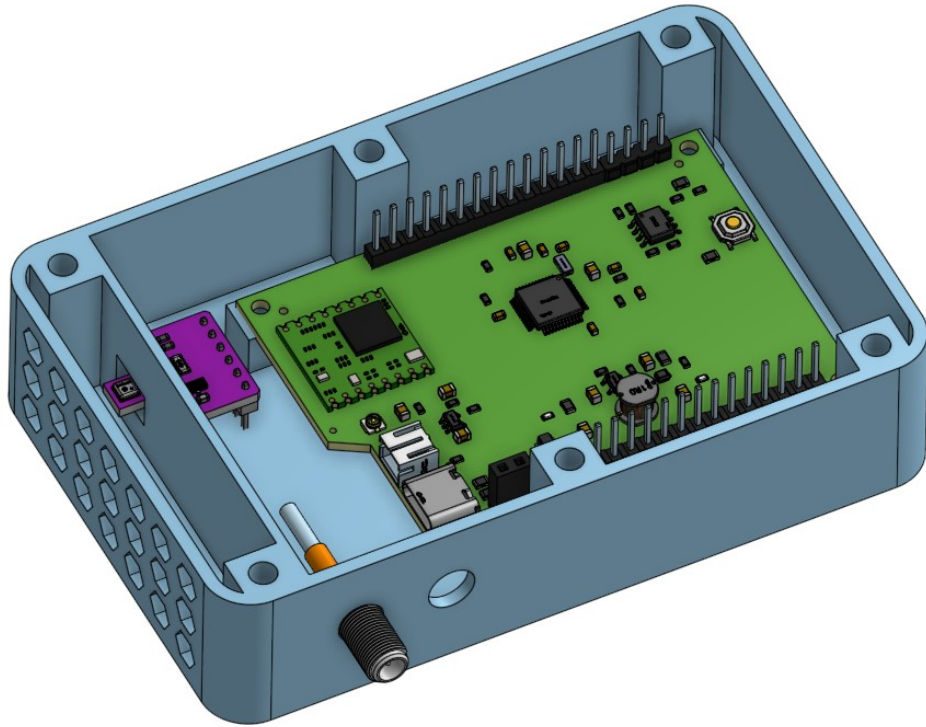


Versuchsaufbau im Gesamttest



Messdaten im Gesamtzeitraum seit Teststart

4 Gesamttest



Weiternutzung – Workshop zum Science Camp im Mai 2024

Vielen Dank für Ihre Aufmerksamkeit!

Noch Fragen?

Abbildungsquellen

- <https://store.comwintop.com/> [1]
- https://upload.wikimedia.org/wikipedia/commons/thumb/b/bb/The_Things_Network_logo.svg/1200px-The_Things_Network_logo.svg.png [2]
- <https://upload.wikimedia.org/wikipedia/commons/2/2b/Node-red-icon.png> [3]
- https://m.media-amazon.com/images/I/71-c1nP7H7L._AC_SL1500_.jpg [4]