

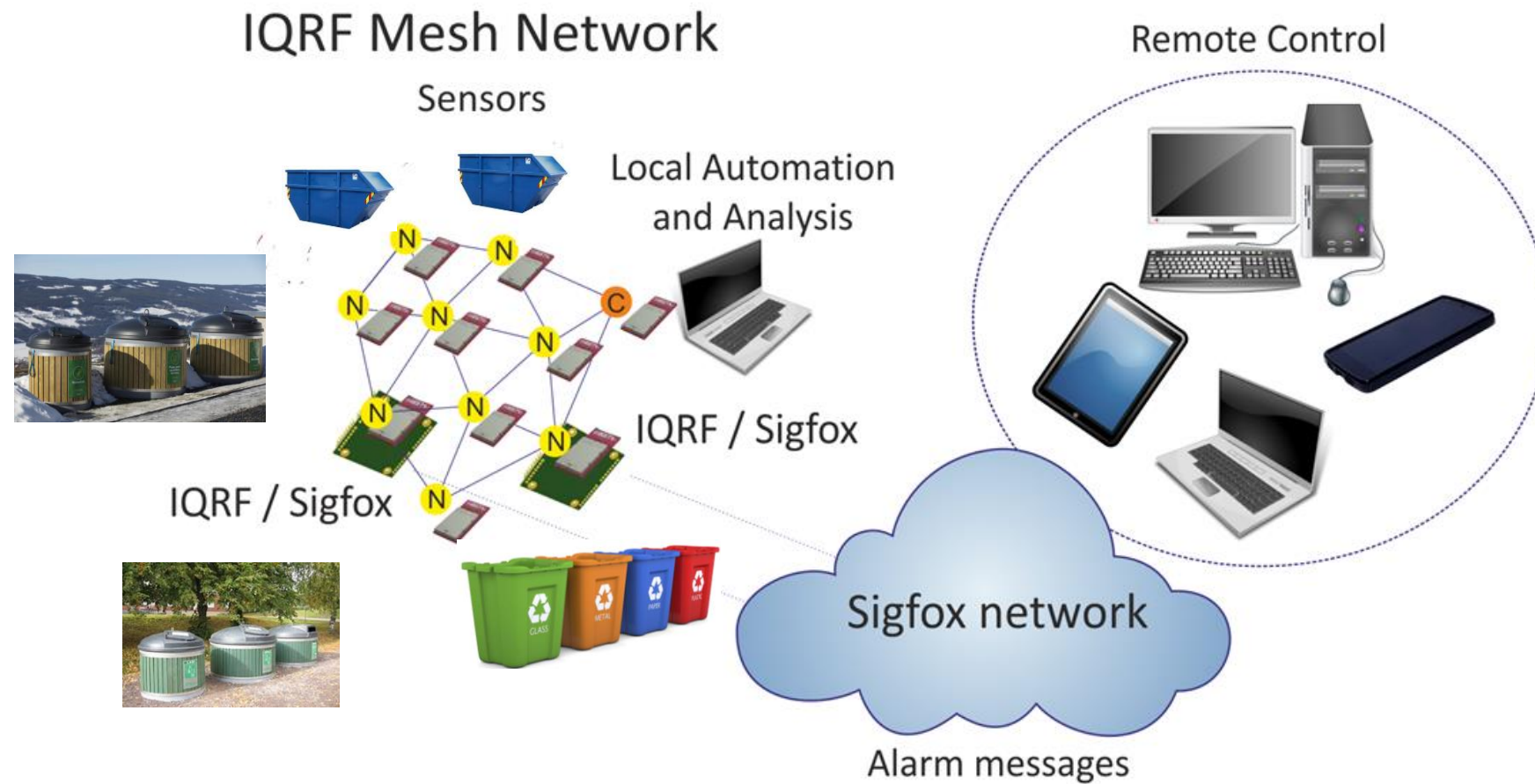
Waste management and Sensor Control

Smart Waste
Management (SWM)

Development project for remote handling of waste collection and
container control

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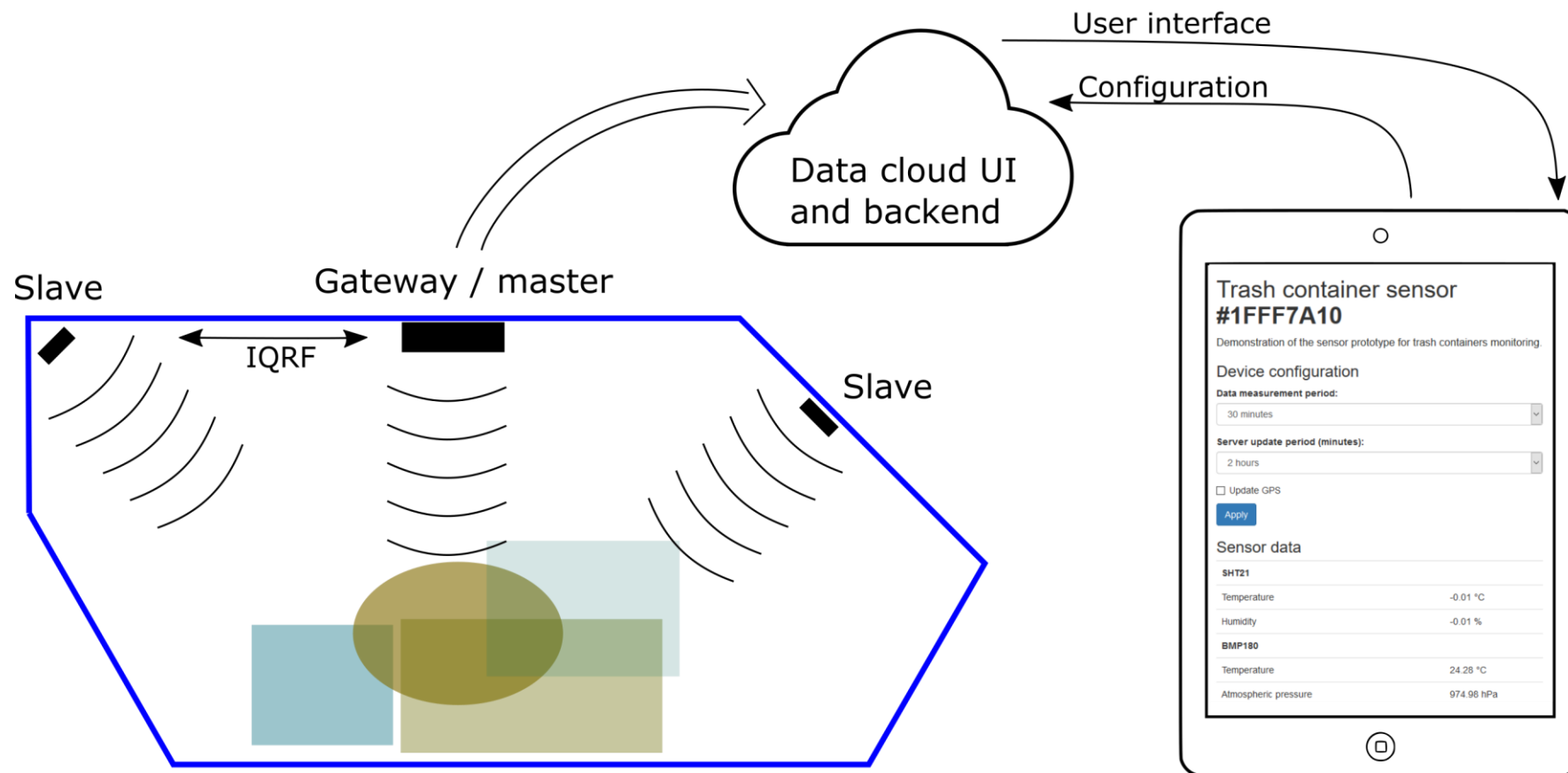
System



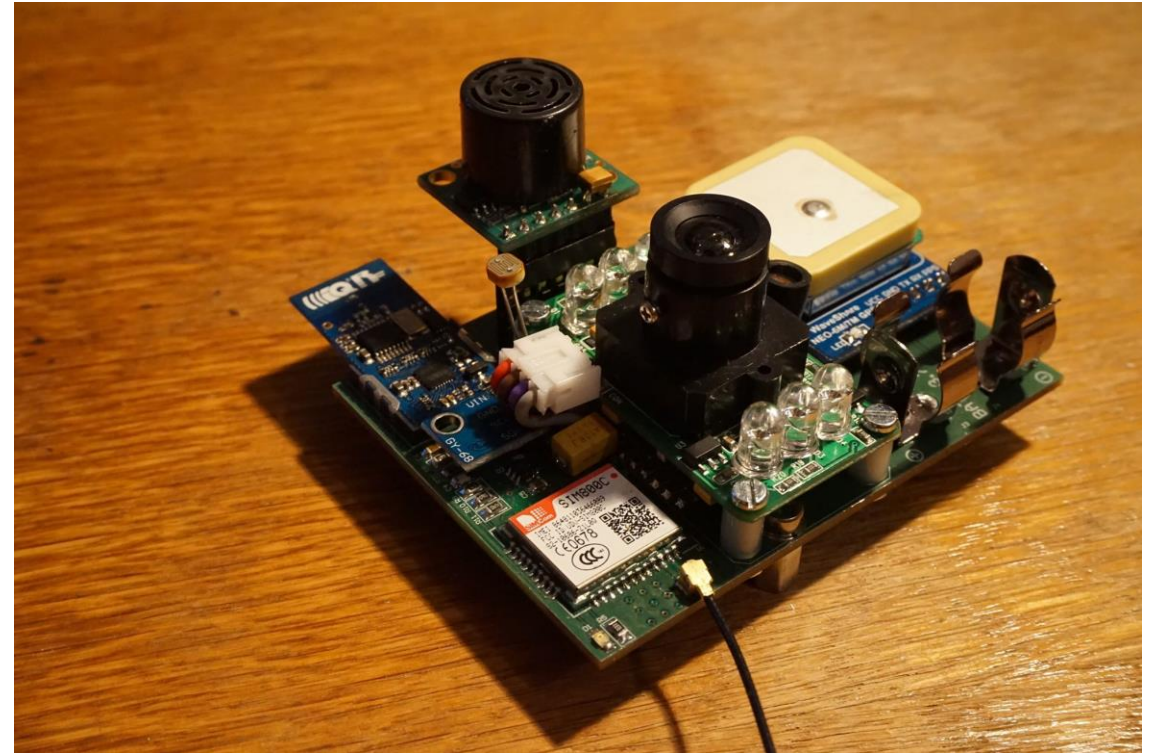
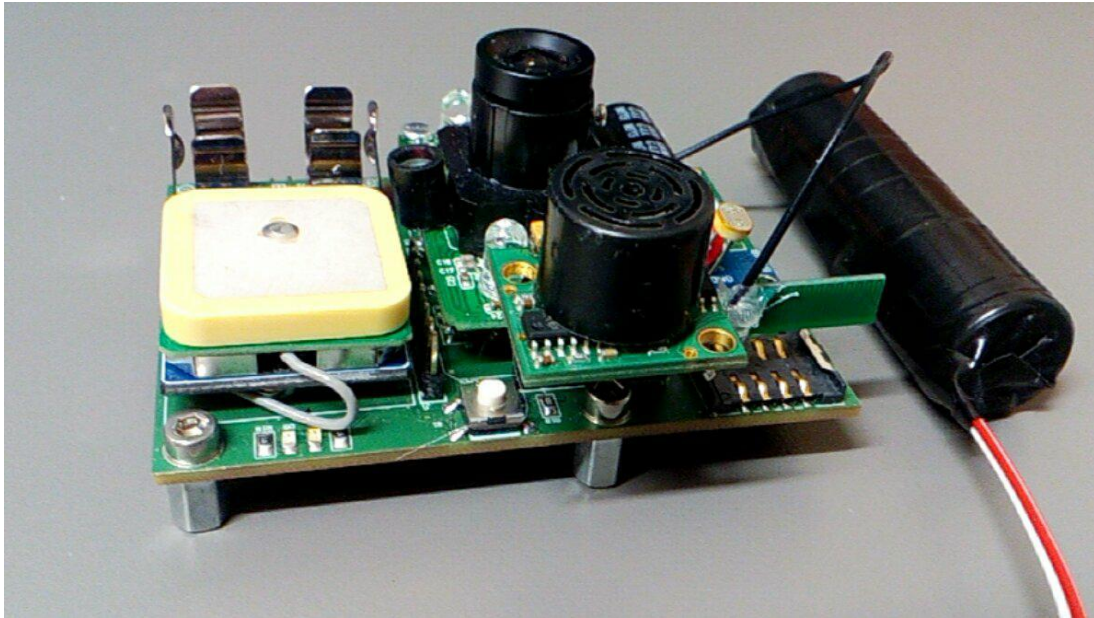
Trash sensor hardware

- System comprises one master sensor (gateway) and several slave sensors (placed within a container)
- Gateway - using IQRF technology collects data from slave sensors and communicates with remote server through GPRS connection
- Slave sensors - using ultrasonic distance meter measures how much is a container filled up
- Additional peripherals - GPS, IR camera, humidity, pressure, temperature and light sensor
- Robust mechanical construction (IP67)

System diagram

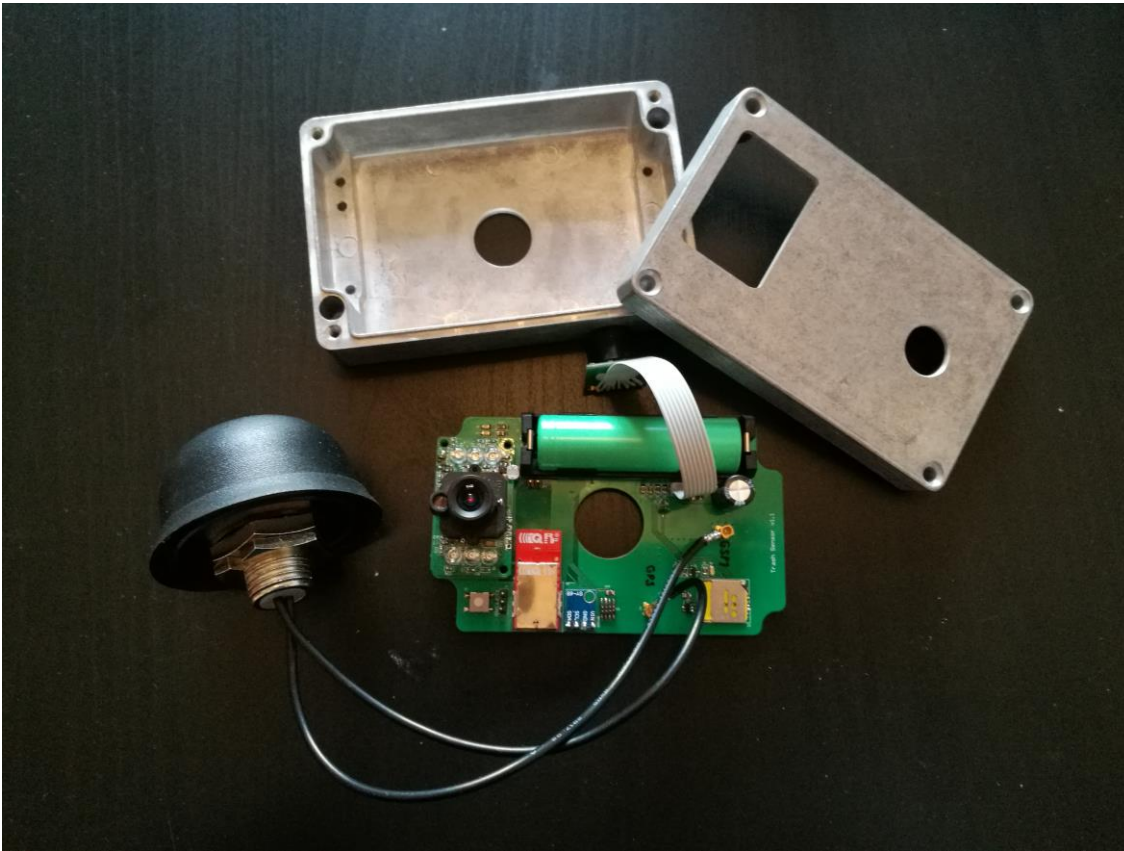


Trash Sensor Prototype v.1

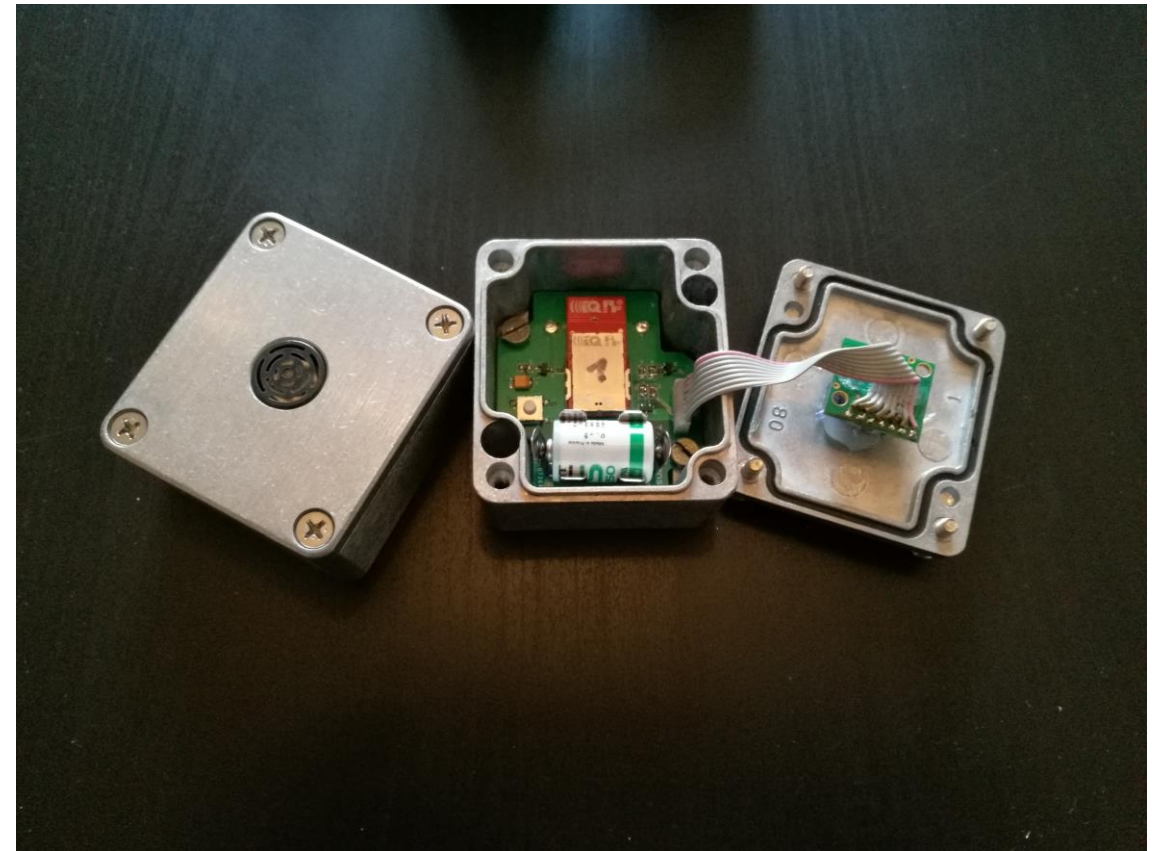


Trash Sensor Prototype v.2

Gateway / Master



Gateway / Slave



Trash Sensor Prototype v.3

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Advantages

- Data about high/low fillage > Reduced use of fuel
- Data about high/low fillage > Reduced use of manhour
- Collecting waste at right time > Improved satisfaction for users
- Datacollection > improved model over time
- Sensor feedback > early warning about hazardous waste
- Geolocation > control of all bins and containers > reduced theft

Work Done > To Do

- Done
 - Sensor Developed
 - Communication system created
 - Simple interface created
- To Do 1
 - Test with NordCon - Container
 - Test with GLØR - Wastecontainer
- To Do 2
 - Dynamic programming > optimizing route management
 - Improve interface
 - Improve and finalize total system for
 - Improve salesnetwork

Partners



OPPLAND
fylkeskommune

