IoTLabs: Projects Proposal

Global Outcomes

- Analyze the constraints of an LPWAN based on LoRaWAN
- Deploy an end-to-end IoT service over LoRaWAN
- Design the different components of an end-to-end IoT chain
    - Physical interface of an IoT device
    - Control and actuation
    - Data storage, visualization, and analytics

Requirements and Constraints

- Use the ESIB LoRaWAN platform
- Provide working code and proof of concepts
- Provide technical documentation

[CO] Connecting the Platform

- Describe and analyze the basic steps for sending and receiving data over LoRaWAN

http://wiki.lahoud.fr/doku.php?id=exploring_lorawan

[PO] LoRaGreen: Smart Classroom

Design and implement an end-to-end IoT service Detect, transmit, store, and visualize Classroom occupancy Classroom lighting and temperature Analyze and correlate occupancy and lighting

[PO] LoRaMarathon: Live GPS Tracking

Design and implement an end-to-end IoT service Detect, transmit, store, and visualize GPS position of device RSSI level Track device on a dynamic map

[PO] LoRaBot: Device Configuration via Messenger

Design and implement an end-to-end IoT service Tune radio parameters (SF, transmit period, sleep, etc.) Use a messenger robot to interact with device

[PO] LoRaPark: Parking Counters

Detect, transmit, store, and visualize Car entrance and exit of parking Make data available on a messenger robot

Assessment and Grading

Assessment 1 Common outcome 1 Personal outcome Technical tutorial on Wiki Oral presentation of achievements Accomplished Exceeded