**Project Brief: Cloud-based IoT Lifecycle Manager**

**Project Overview:**

A database app to manage the lifecycle of connected IoT assets from cradle to grave. As a device moves from manufacture into installation, operation, and eventual removal and recycle there is a need to record information about the device, e.g. serial number, owner, location, installation, connection, maintenance etc. The project objective is an app that records device associated information into a database to record its life history as a 'source of truth' for use by device manufacturers and business users. Emphasis on this project would be a UI experience that is more oriented towards the workflow of the lifecycle.

**Key Objectives:**

1)      Use of Firebase to manage data.

2)      API calls preferred to abstract out services so recommended to use microservice architecture.

3)      The project should be extendable to multiple clients running off the same database.

4)      There should be option for data to be stored on client side or client-side API keys, but functionality on cloud.

5)      Stretch goals - think scalability from 5 devices to 1000 or more.

***Questions:***

* Type of microservice architecture- each step is its software

**What specific problems or pain points are you looking to address with this IoT Lifecycle Manager?**

* This will help uncover the core motivations for the project.

**Who are the primary users of this application?**

* Understanding the target audience can influence UI/UX and feature decisions (e.g., manufacturers vs business users).

**Can you provide more detail on the lifecycle stages (manufacture, installation, operation, etc.)?**

* Understanding each stage helps in designing the right workflows and data capture points.

Data from devices we collect.

WHo wons it- meta data.

Nothing off the shelf that covers this part.

A database about all the info of a device. Location/photos of instalation/data about device services.

API: how to collect data automatically. How to extract it.

**Database:**

Storing this data.

Client users may want to host their device themselves.

AWS creds

COW TRACKING? to see what cow has what tracker. Data about these cows trackers.

Electric smart meter:

Tracker

Locatation

Maintanance records

Photos of installations

Network Creds - to connect 2 different systems.

Use case for this software where data is stored extracted learn what.

Tracking through the lifecycle.

Track it previous location

Update the new customer with the past customer's records.

Small fleet- up to 100 devices possibly up to 1000 devices.

Meta data description.

Like a manual

Buisness analysis - how to scale it.

**Users. 👍**

The contractors who will be installing the device

**Database**:

Database client has a live copy we have a backup of the database or just.

Him-

Code reviews

A little bit of technical aspect

Page

reminders for devices

**Meeting Minutes : 24/10/24 1300**

INTROS-

John - engineer

Telecomes test equipment

C @ uni

**AGENDA**:

Get to know each other.

Talk about the application

We can target devices that use LoRaWAN as they are low cost

Ligting, temperature electric meters,water meters

Securely transmit data  for 200-1000 using a unlicensed spectrum

**CYBER SECURITY**

Suggest what to do for cybersecurity.

Conencting to remote devices

Dealing with Creds and device SSIDS and shit

How to connect securely

We can integrate our system with thethingsnetwork

Reading Writing from API’s to mapp device info to device credentials.

COOL thing PYCOM language micro-python

Work Processes

Expectations:

Project Process

Deliverables

Time Scale

AWS shutting down IOT device manager platform

Device Id and creds for connectivity management

Other META Data about is our projects

**Apendix**

<https://www.thethingsnetwork.org/>

https://democracy.gwynedd.llyw.cymru/documents/s41438/APPENDIX%2003.pdf

<https://www.thethingsnetwork.org/docs/lorawan/architecture/>

**Meeting minutes 29/10/2024 - Plan for the week**

TOM

NIKO

JOESEPH

Meeting on friday @ 12

Read upon the different software on the market IE AMW IOT that is going out of business. Look into Firebase implementation.

Future ISSSUES:

December- Christmas and Hackathon. Reduced time for the project. Perform maximum during November.

GIT hub to store all of our resources to have a backup

User Stories

I need to check that my trackers will hold for the next 3 months - go into app check the battery percentage then give estimate on time create a grouping system for trackers that relate to each other to make navigation and display easier, also set up and alerts system when reported percentage is too low

I need to refer back to one of the setups I used for a previous client getting model details as well as the software and systems tehy used - go to clients group look view details about each over the devices like serial number, model number, software + version,

A user needs to be able to track the device throught its lifecycle and if the piece of hardware is transferred to another client that is using our system they have the option to ba able to keep the current Lifecycle back log that is in the database and transfer it to the other user.

A user needs to be able to find a device quickly as there may be hundreds of devices on the database with use of a search bar or the QR code on the device to link back to the database.

PLANNING:

Sprint 1 8 -22:

DESIGN A FRONT END

Design a back-end

Plan different types of cyber security measures attempt to implement possible solutions into   code

The front end to be planned over the next sprint given feedback redesigned and the prototype made in the sprint after