

POWER LOAD BALANCING PROJECT

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OVERVIEW

01

Our Goal

02

System
overview

03

CAN COM

04

MQTT

05

Demo

06

Questions

01

OUR GOAL

01

To develop a Power load balancing system to analyze power load distribution from a building to EV charging

02

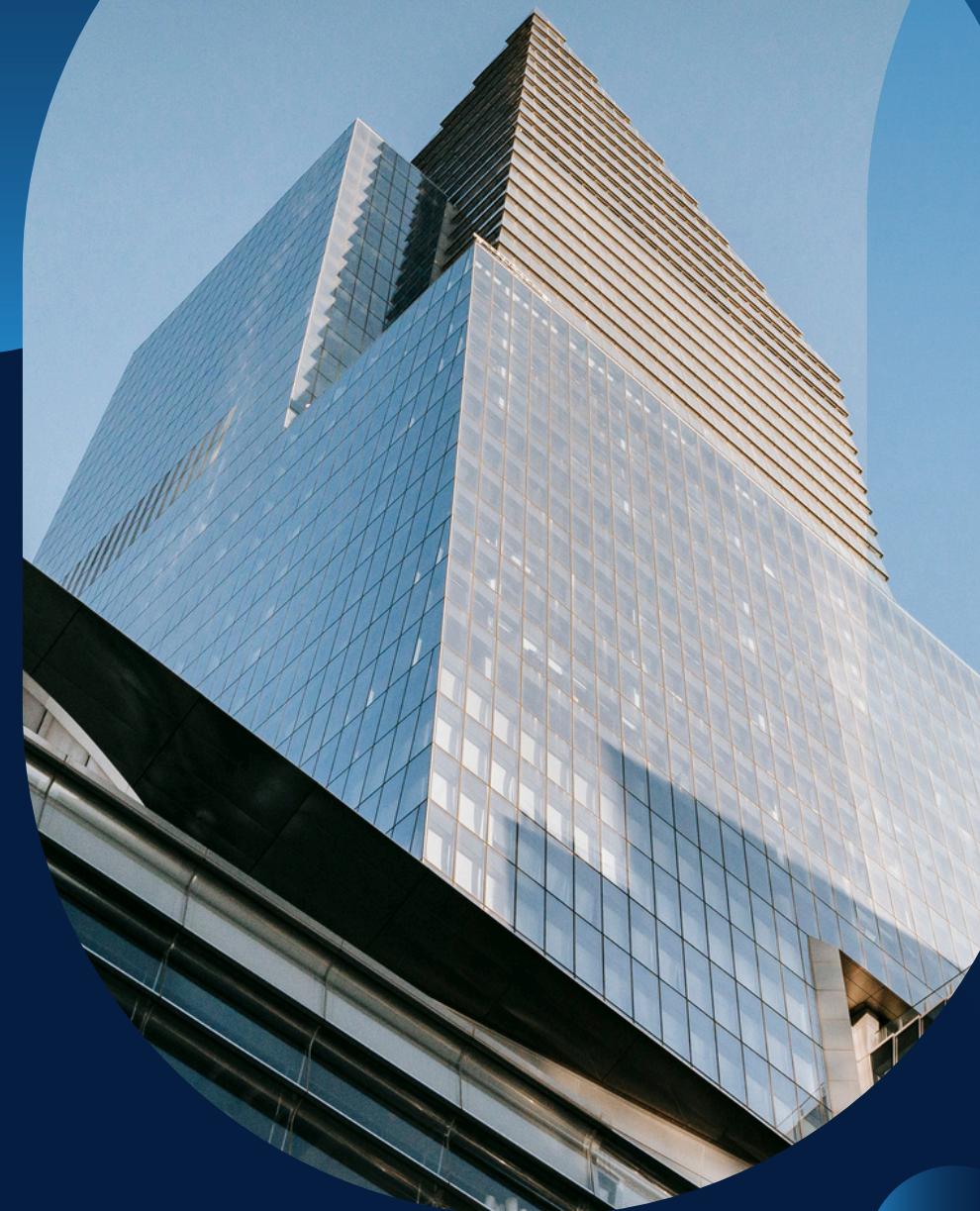
Using Decentralized systems for robustness and fail proof

03

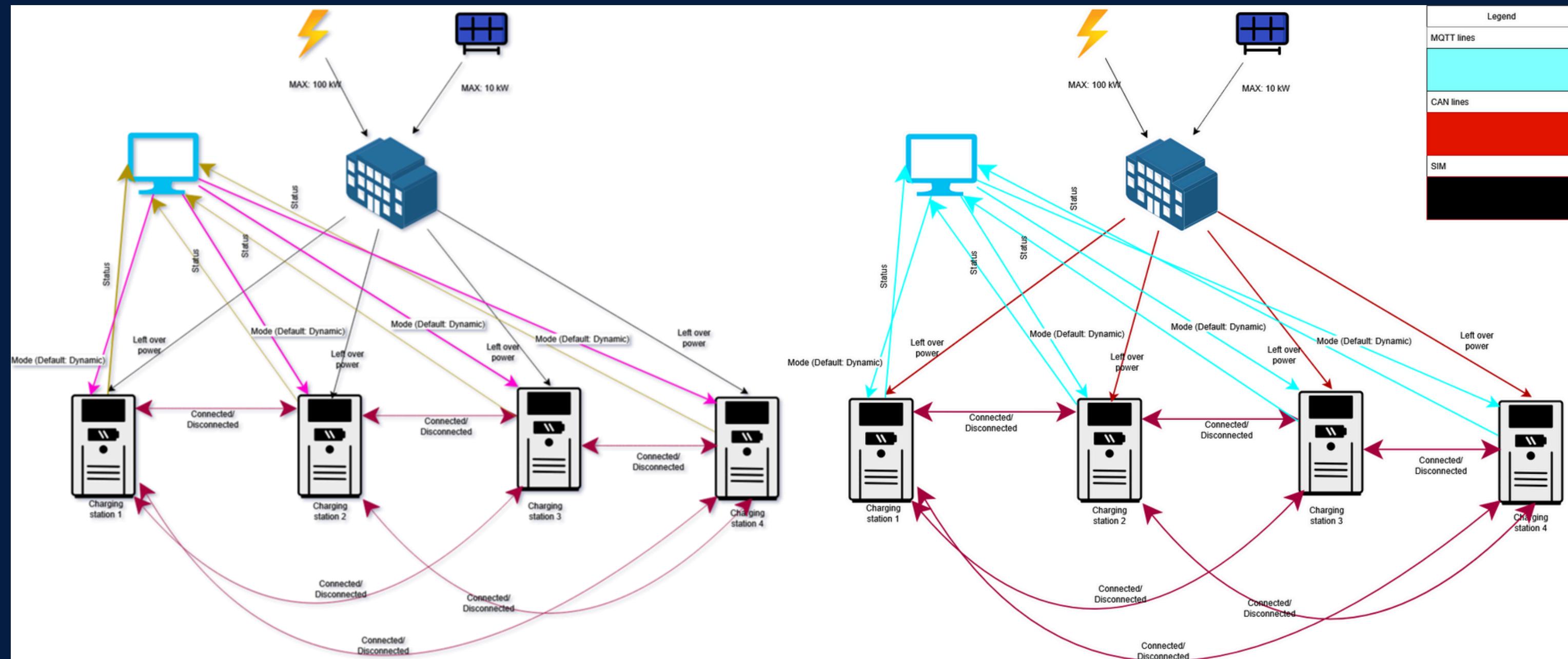
To have different charging modes for different occasions

04

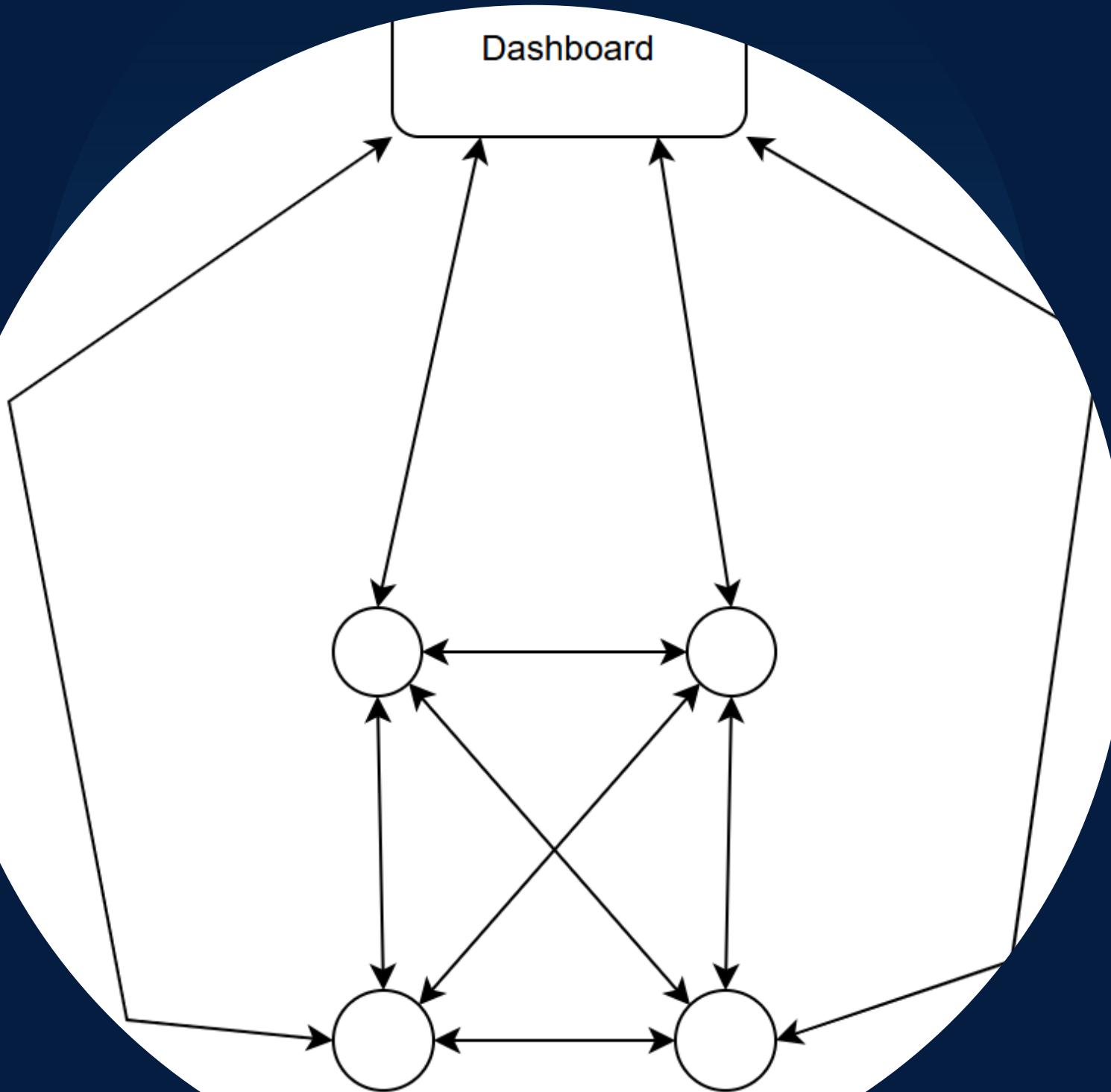
Automatic Mode changes based on the available power from the power grid



02 SYSTEM OVERVIEW



CAN COMMUNICATION



MESH TOPOLOGY

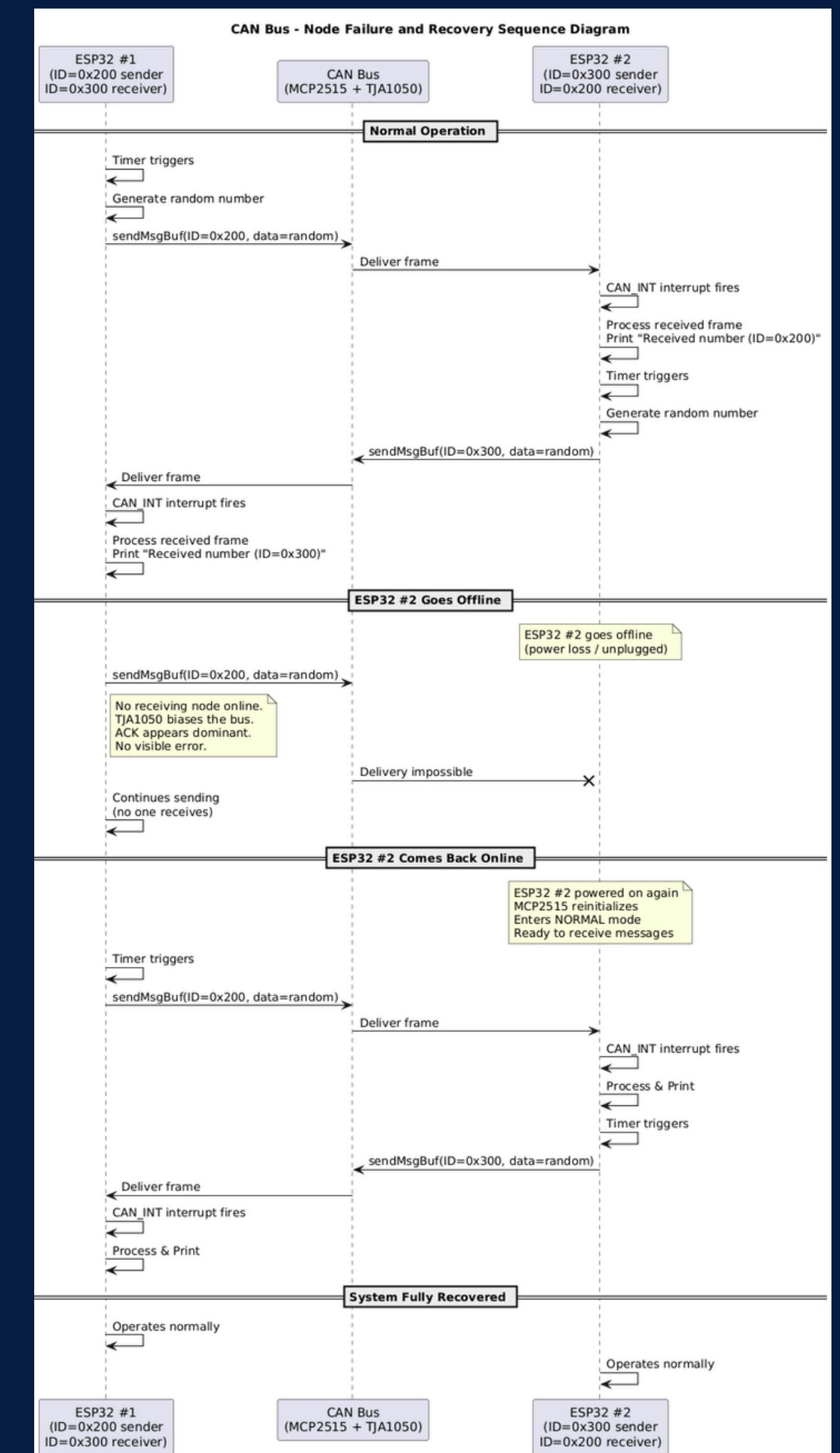
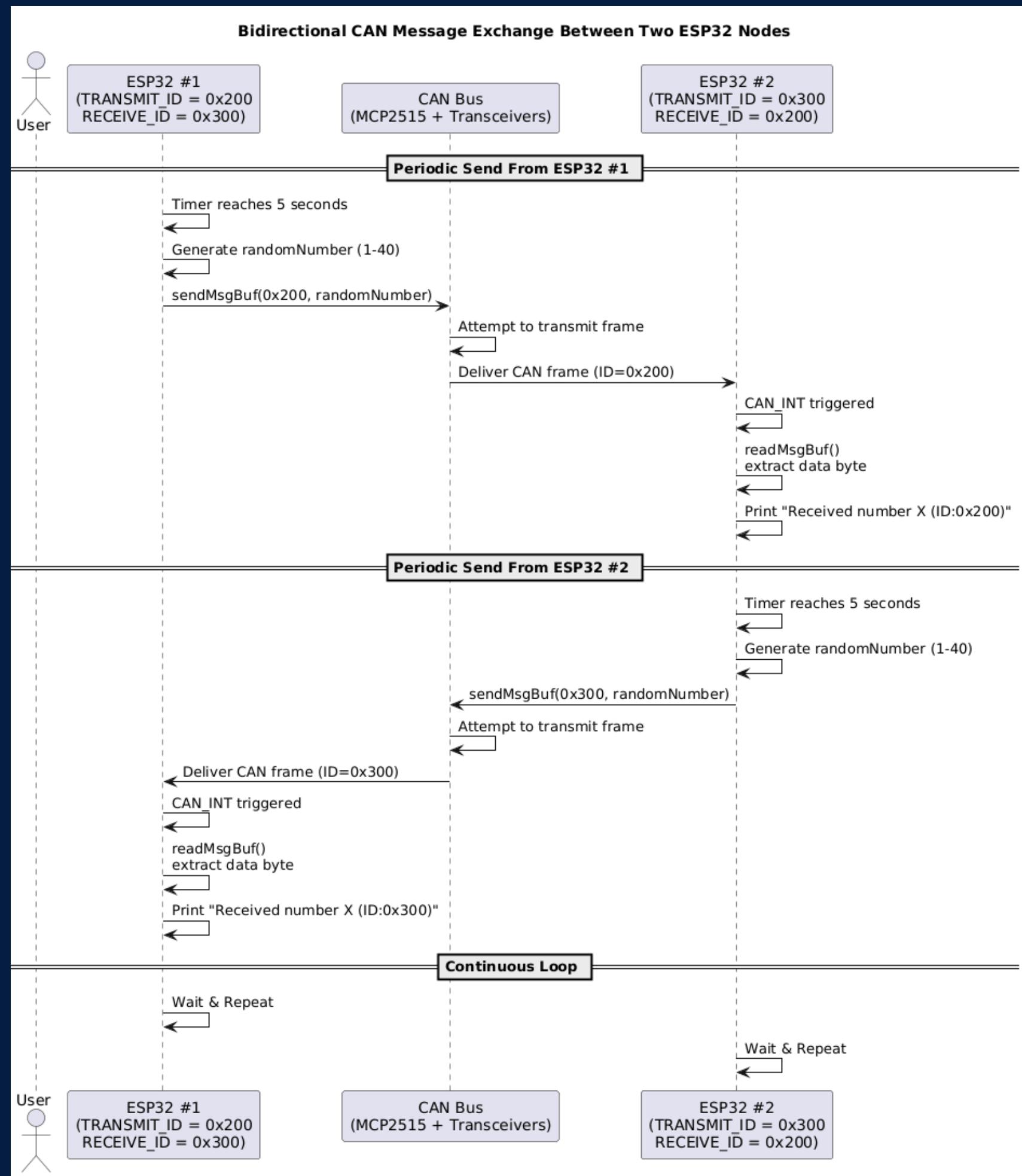
- Decentralized
- Robust

WIRED CONNECTION

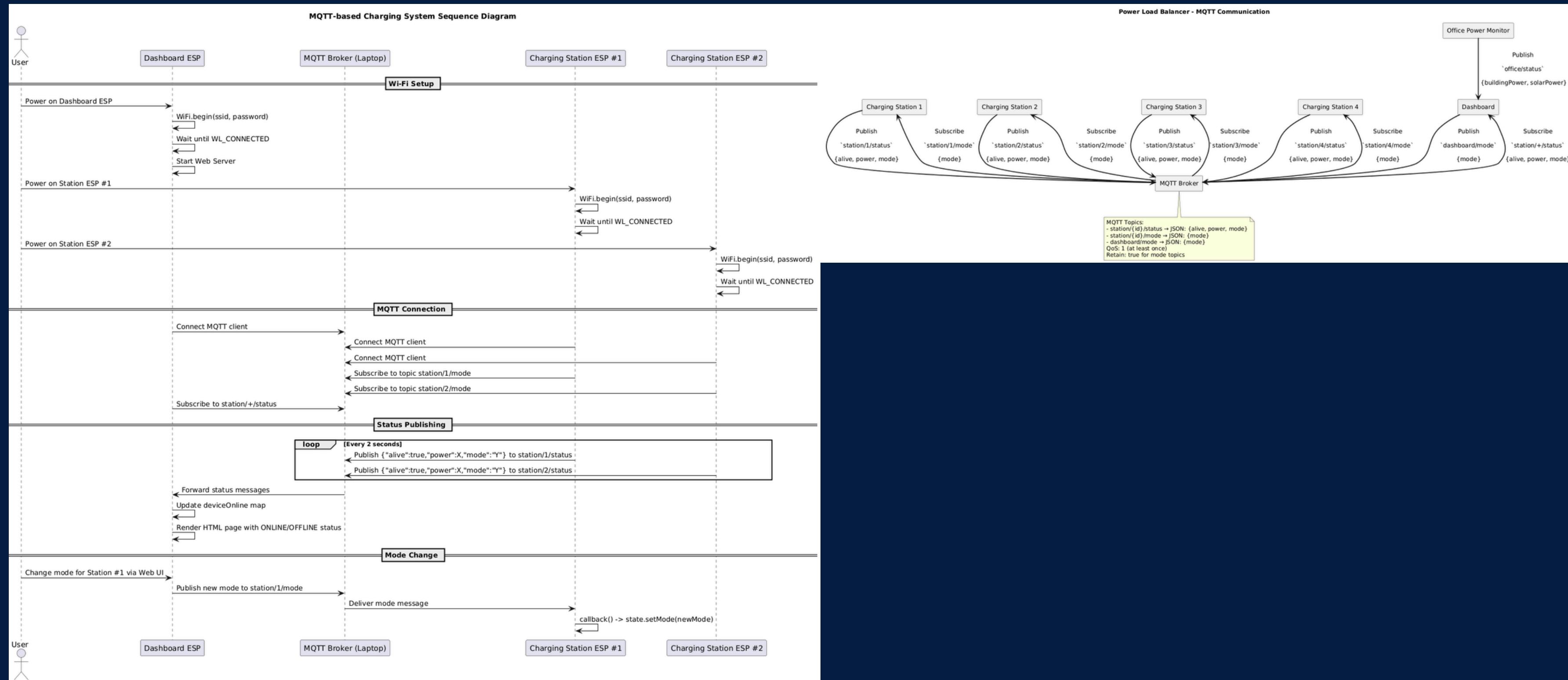
- Secure
- Stable

SERIAL

- ID: power: mode
- ID: C1; power: 1kw; mode: equal



04 MQTT



05 DEMO

- Demo MQTT
- Demo CAN

```
68 Serial.print("Sent Number (ACK RECEIVED): ");  
69 Serial.print(randomNumber);  
70  
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SERIAL MONITOR  
SERIAL MONITOR  
+ Open an additional monitor  
Monitor Mode Serial View Mode Text  
Port COM4 - Silicon Labs CP210x USB to UART Bridge (COM4) Baud rate 115200  
Line ending None  Stop Monitoring        
Received number: 28 (ID: 0x300)  
Sent Number (ACK RECEIVED): 3 (ID: 0x200)  
Received number: 21 (ID: 0x300)  
Sent Number (ACK RECEIVED): 31 (ID: 0x200)  
Received number: 11 (ID: 0x300)  
Sent Number (ACK RECEIVED): 24 (ID: 0x200)  
Received number: 5 (ID: 0x300)  
Sent Number (ACK RECEIVED): 29 (ID: 0x200)  
Received number: 29 (ID: 0x300)  
Sent Number (ACK RECEIVED): 37 (ID: 0x200)  
Received number: 35 (ID: 0x300)  
Sent Number (ACK RECEIVED): 40 (ID: 0x200)  
Received number: 3 (ID: 0x300)  
Sent Number (ACK RECEIVED): 40 (ID: 0x200)  
Received number: 32 (ID: 0x300)  
Sent Number (ACK RECEIVED): 33 (ID: 0x200)  
Received number: 22 (ID: 0x300)  
Sent Number (ACK RECEIVED): 39 (ID: 0x200)  
  
+ Open an additional monitor Close this monitor window  
Monitor Mode Serial View Mode Text  
Port COM7 - Silicon Labs CP210x USB to UART Bridge (COM7) Baud rate 115200  
Line ending None  Stop Monitoring        
Sent Number (ACK RECEIVED): 28 (ID: 0x300)  
Received number: 3 (ID: 0x200)  
Sent Number (ACK RECEIVED): 21 (ID: 0x300)  
Received number: 31 (ID: 0x200)  
Sent Number (ACK RECEIVED): 24 (ID: 0x200)  
Received number: 5 (ID: 0x300)  
Sent Number (ACK RECEIVED): 29 (ID: 0x200)  
Received number: 29 (ID: 0x300)  
Sent Number (ACK RECEIVED): 37 (ID: 0x200)  
Received number: 35 (ID: 0x300)  
Sent Number (ACK RECEIVED): 40 (ID: 0x200)  
Received number: 3 (ID: 0x300)  
Sent Number (ACK RECEIVED): 40 (ID: 0x200)  
Received number: 32 (ID: 0x300)  
Sent Number (ACK RECEIVED): 33 (ID: 0x200)  
Received number: 22 (ID: 0x300)  
Sent Number (ACK RECEIVED): 39 (ID: 0x200)
```



ANY QUESTIONS?

