Infiquity Auto Technologies Private Ltd (IQ)

Since 2014
Embedded Systems Company – Automotive Electronics & IoT Technology

EV Charging Management System (CMS)
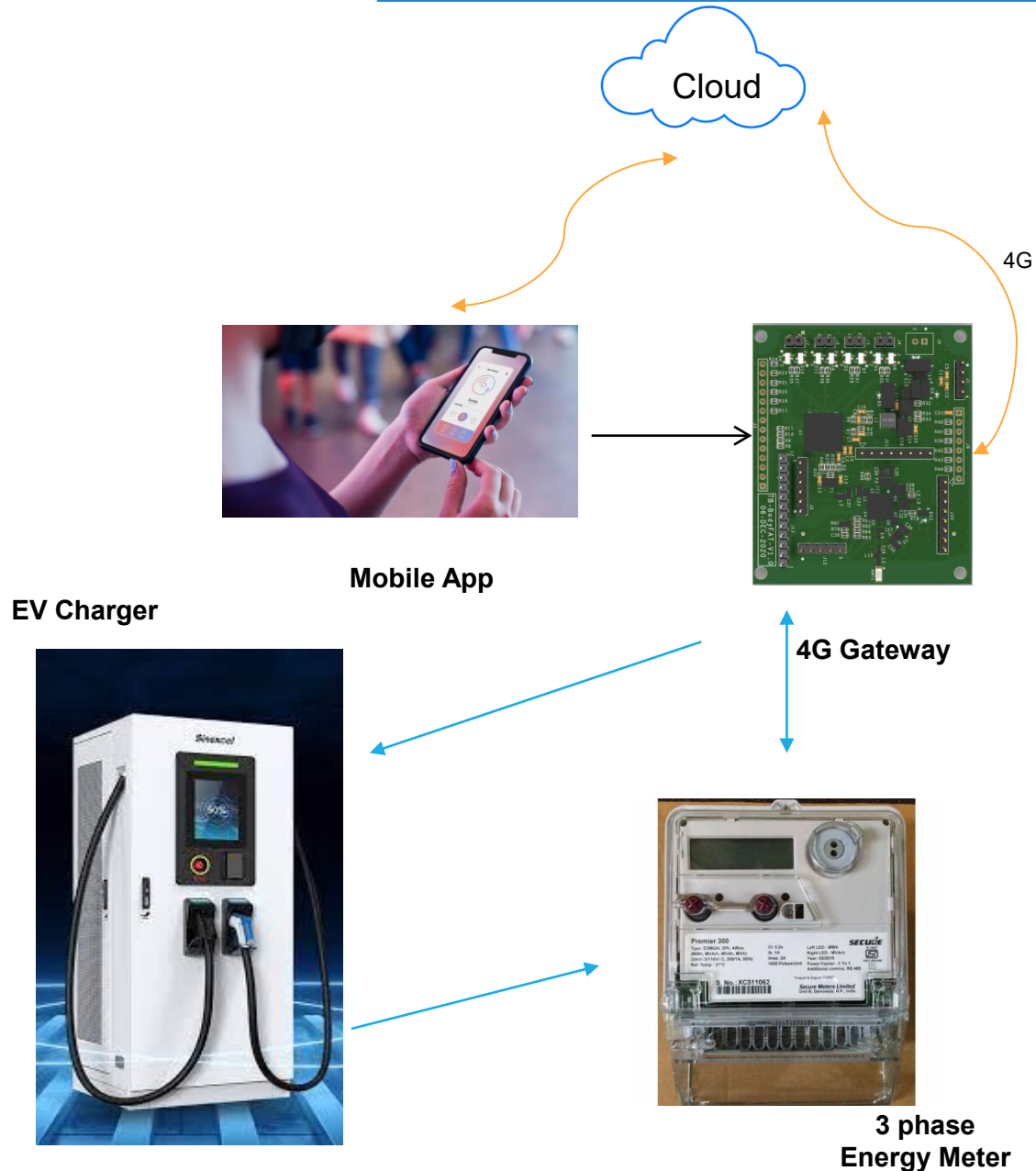
www.infiquity.com

- ❑ This integrated solution allows multiple users to manage EV Charging booking. Manual work is eliminated. The EV charger is remotely monitored an controlled.

- ❑ It provides a mobile app to schedule EV Charger booking and at the same time allow multiple users.

- ❑ It provides a web application to monitor charger health performance, energy consumption and diagnostics.

- ❑ Charger booking through mobile app.

- ❑ Instant QR and OTP verification.

- ❑ Charger data transmission through 4G Web socket communication.

- ❑ Energy meter reading through RS485 connectivity.

- ❑ Billing to end customer

- ❑ Payment gateway through RazarPay. UPI option provided.

- ❑ Remote connection and disconnection of Charger to Vehicle (4G)

- ❑ Website access to monitor Charger data and status.

- ❑ IP67 rated IOT Panel

- ❑ Charger monitoring through RS232 connectivity

- ❑ End to end solution to effectively use the chargers and bill the service providers.

Current V/s Proposed

Current	Proposed
Manual booking	Automated booking through mobile app
Manual diagnostics of EV charger	Online monitoring and quick alerts
Manual billing	Automated billing and transparent
Improper utilization of EV chargers through manual booking	Streamlined online calendar booking for efficient management of EV chargers.

System Architecture

Cloud

4G

Mobile App

4G Gateway

EV Charger

3 phase
Energy Meter

Features:
- IOT Gateway for 4G
- Google Firebase Connectivity
- Android and iOS (Flutter based) development
- E-SIM interface
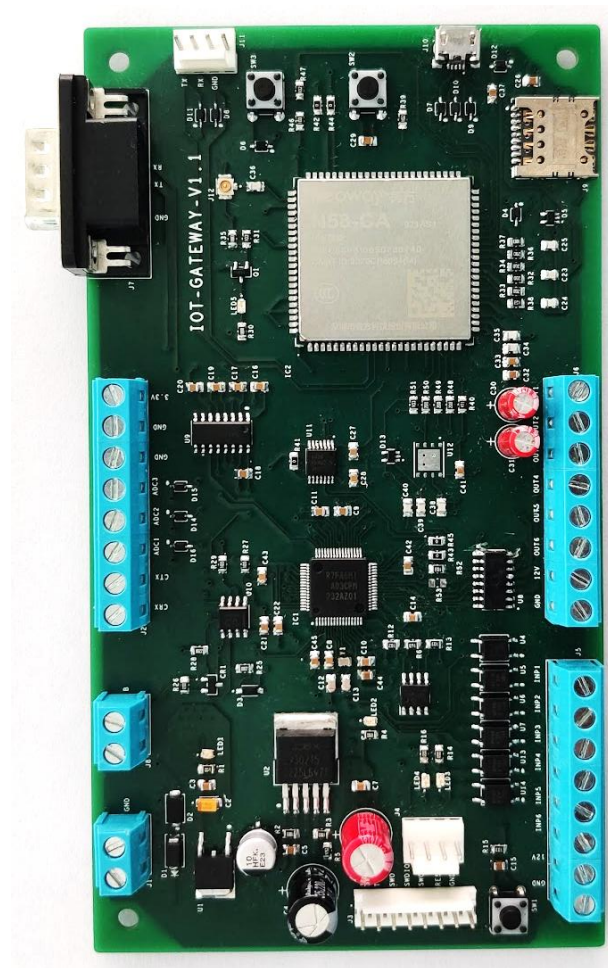- CT (Current Transformer) reading
- Energy Meter reading (RS 485)

Key Highlights
- End to End IoT solution
- Complex Hardware driver development
- Scalable and Module software architecture
- Third party device integration

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IOT Gateway Card

- Enables instant Cloud Connectivity
- Neoway N58 4G Controller
- Renesas 32-bit microcontroller for better computation
- Input Power – 12V
- Power Protection enabled
- Optimized current consumption
- ESIM enabled
- Manual SIM option
- ADCs x 3
- GPIOs x 12
- CAN Channel x 1
- UART x 2
- MODBUS x 1
- Can be used for wide range of applications
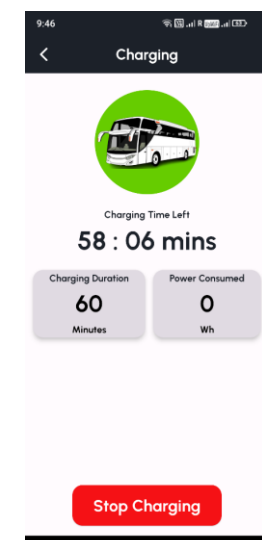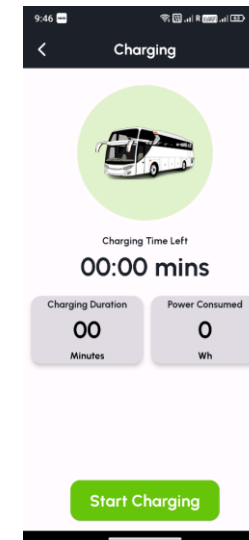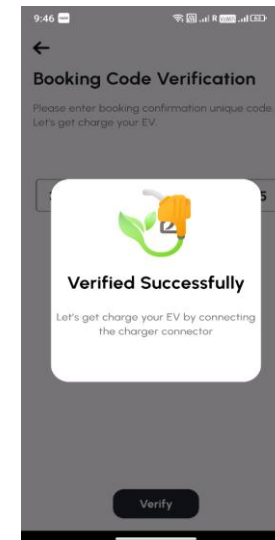
FEATURES

Cloud Services

- Google Cloud Platform – Hosting Server

- MongoDB - Database

- Terraform – Infrastructure

- Docker - Containerization & Orchestration

- Microservices for Mobile & Web application integration

Mobile Application

- Features Booking & Charging session
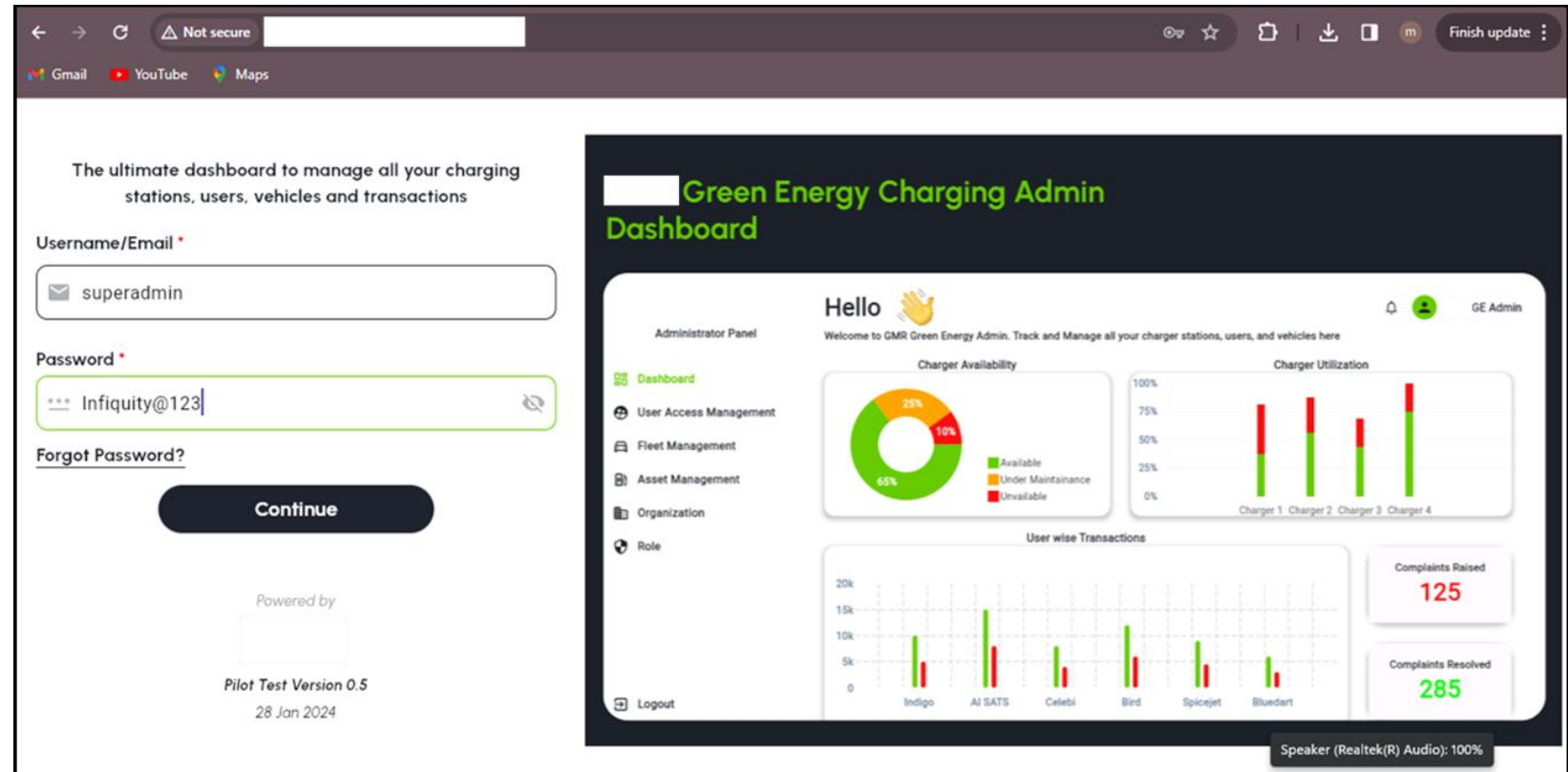
- Flutter – Frontend

- Backend – Node.Js

EV Charging Gateway Features

Web Application

- Access Management
  - ❖ User
  - ❖ Organization
  - ❖ Vehicle
  - ❖ Charger
- Charger Management
  - ❖ IoT/ Charger Status
  - ❖ Fault Historian
- Charging Session
  - ❖ Booking Details
  - ❖ Billing Details
- Complaint Management
  - ❖ Raise Ticket
  - ❖ Ongoing Faults
  - ❖ Tickets Closed

This web application enables live streaming of Charger Data and Control Panel Data. The data captured is then utilized for data analytics. This application is catered to different users for different access controls and data management.