



A full-blown software and hardware solution for electric charging station's star point controller that increases fleet management efficiency by 50%

Client Description

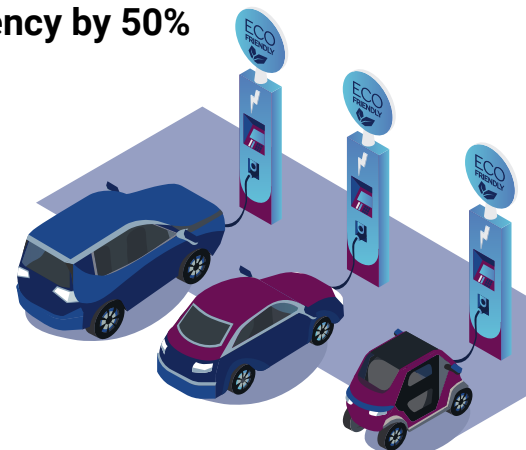
The client is a leading company in design and manufacture of zero – emission electric vehicles and vehicle technology solutions. The company designs and manufactures electric transit buses and electric charging systems.

Business Challenge

The client wanted to build a star point controller to facilitate charging of multiple electrical buses from a single charging station with minimal changes to the existing mechanical and software system.

What we did

Designed and built a software and hardware solution for electric charging stations operations and increased fleet management efficiency by 50%



Innominds developed a complete solution which include the software for the charging station's operations and the hardware. A star point controller controls the dispensing of power units and governs the rate of charging, the safety and the prioritization of charging. Innominds leveraged its expertise in connected devices to develop the controller hardware (ARM Cortex A5) and software (operating system, board support package (BSP)) to support the device hardware:



Built the hardware design for the controller and defined the software architecture



Developed a hardware agnostic software abstraction layer to provide LED access, digital and analog I/O



Leveraged a lightweight transport protocol for IoT—Message Queue Telemetry Transport (MQTT)—to send and receive data from AWS IoT client to end point



Defined the dispenser selection strategy, power on self- test and other configuration parameters using configuration manager. The selection strategy prioritizes the charging of multiple vehicles.



Included the monitoring of the health parameters of the dispenser and publishing the data to cloud



Enabled the remote control of the device by Star point administrators



Developed services like Logger services, Database services, Key Store Manager, notifications and dispenser alerts

Value Delivered



The charging station operations solution increases the efficiency of charging operations and fleet management by at least 50 percent



It helps in optimizing fleet management, improving utilization and saving costs, including installation costs.

Key Services

Product Engineering, H/w Development, Board Support Package Development, Factory test

Tools and Technologies

Linux, AWS IoT Client, QXDM, CPPUtest, Yocto build system, BSP bring up, MQTT, CradlePoint Router, Microcontroller programming, Embedded C

About Innominds

Innominds is an AI-first, platform-led digital transformation and full cycle product engineering services company headquartered in San Jose, CA. Innominds powers the Digital Next initiatives of global enterprises, software product companies, OEMs and ODMs with integrated expertise in devices and embedded engineering, software apps and product engineering, analytics and data engineering, quality engineering, and cloud and devops, security. It works with ISVs to build next-generation products, SaaSify, transform total experience, and add cognitive analytics to applications.