

FUEL DISPENSING SYSTEM

Datasheet

PROVIDING SOLUTIONS FOR TOMORROW - SINCE 1993

Project objective

Develop and flash the Fuel Dispensing System to be used within private fuel stations. It had to consist of the Fuel Pump Controller and the Control Pad communicating with each other and with the server. We need to "redevelop" the existing client's Fuel Dispensing System to expand its functionality, and reduce the cost of its components. It would have allowed the client to get rid of 3rd parties' hardware, get all the intellectual rights, and reduce the production cost.







Result

The client got 5 tested PoC hardware units for the Fuel Pump Controller and the Control Pad which can be controlled and updated remotely. The system was accompanied by documentation that allows for launch to mass production.

Scope of work

- Implement the HW for the Fuel Controller and provide communication with the Control Pad
- Oevelop FW for Linux-based CPU
- $\,\,$ Enable fuel pumps motor control, health tracking, and fuel level monitoring
- $\,$ $\,$ Integrate the Fuel Controller with the server backend
- Implement wireless (Bluetooth, WiFi) and cellular (4G) communication networks to provide remote control and updates
- Implement GPS navigation
- Implement the HW for the Control Pad
- 🚸 Develop FW for Bare-metal and Free-RTOS MCU
- 🚸 Add support for LCD display, keypad, keyboard, and LEDs matrix
- 🚸 Provide access control via iButton, Magnetic card, and RF tags
- 🚸 Develop and test the web configuration console
- 🚸 Add support of advanced technology in data management
- $\,$ Ensure backward compatibility with existing hardware and software

Activities

- Requirements definition
- Hardware components selection
- Schematics design
- PCB development
- 🕸 Enclosure design

- Firmware development and implementation
- 🚸 UI development
- Or Bring-up and testing of prototypes
- Product documentation
- Continuous support





About the project

Technologies

♦ C/C++

- 🚸 FreeRTOS
- 🚸 ARM
- 🚸 STM8

🚸 STM32

- IAR Embedded Workbench
- Ethernet, USB, HDMI, CAN, I2C, SPI
- 🚸 XML
- ♦ TCMP/IP
- 🚸 STM HAL

Project size

- 🚸 1 Technical Coordinator
- 🚸 1 Project Manager
- 🚸 1 Business Analyst
- 🚸 1 Hardware Engineer
- 3 Embedded Software Engineers
- 🚸 1 Technical Assistant

- ♦ STM32 USB
- 🚸 Libs
- ♦ LwIP
- CMSIS
- STM32CubeMX Code generator

Platforms

🚸 Embedded

Duration



17 months November 2018 – March 2020

