

**Subject: Enable BLE Connectivity for ELCO25**

**Goal:**

The purpose of the internship is to make the ELCO25 BLE capable by adding a BLE coprocessor that communicates with ELCO25 using serial communication.

**Technologies / Tools:**

ELCO25 (TM4C1294), TI-RTOS, CC2652 (or CC1352) BLE5 UART

Code Composer Studio, Debug probes, BTool, ..

**Required Skills:**

Basic understanding of embedded systems

Proficient level of C programming

(Dhafer)



**Subject: Integrate ModbusTcp (Slave) for the ELCO 25**

**Goal:**

The purpose of the internship is to integrate(implement) the ModbusTcp(Slave) protocol.

A ModbusTcp(Master) should be able to read data from the board (registers should be mapped to memory locations)

**Technologies / Tools:**

ELCO25 (TM4C1294), TI-RTOS, lwip, TCP/IP, ModbusTCP

Code Composer Studio, Debug probes, …

**Required Skills:**

Basic understanding of embedded systems

Proficient level of C programming

(Ahmed)



**Subject: Implementing an IOT application on a customized linux image**

**Goal:**

The purpose of the internship is to create a customized linux image including support for:

* Temperature & humidity sensor driver
* systemd
* libmodbus
* A modbus slave application collecting the sensor’s data (AHT10 RH/TEMP Sensor) and sending them to a modbus master.

Target:

* AM335X based board.

**Technologies / Tools:**

* Linux/kernel
* Yocto
* Modbus
* C programming

**Required Skills:**

* Linux basics
* C programming

(Abdelaziz and Kamel)



**Subject: BLE Test API**

**Goal:**

The goal of the internship is to develop an APIs to communicate with BLE board and send basic HCI command.

* Implement generic uart interface.
* Implement basic HCI command (scan, connect, discover services, …)

**Technologies / Tools:**

CC2653, BLE5, UART

C#/C++

Visual studio, BTool

….

**Required Skills:**

Basic understanding of embedded systems

Proficient level of C#/C++ programming

(Radhwen and Abdelbasset)