Individual Weekly Report

Name: Aysen De La Cruz
Team: Bray IIoT Smart Solution
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Current Status

1. What did you **personally** work on this past week?

Task	Status	Time Spent
Wrote the entire firmware for the project	Complete	8 Hours
I was able to verify that I received C02 data from the sensor on the gateway, after messing around with configurations	Complete	1.5 Hours

Include **screenshots/graphics** to illustrate what you did this past week:

```
*/
I2C1_Init();          // SEEPROM, BME, NFC

USART1_UART_Init();   // DEBUG
USART2_UART_Init();

Pygo_sensor_info_init();

NFC_task_init();
LoRaWAN_Init();
Uplink_task_init();

Usart_task_init(&huart1);

Usart_task_init(&huart2); // Now adding uart bus 2 for auxilary sensror

//Now will send functions to send calibration, and set mode of device to polling
set_mode_polling();
uint8_t rx_buffer_0 [20];
HAL_UART_Receive(&huart2, (uint8_t *)rx_buffer_0, sizeof(rx_buffer_0),1000);
set_zero_point_fresh_air();
uint8_t rx_buffer_1 [20];
HAL_UART_Receive(&huart2, (uint8_t *)rx_buffer_1, sizeof(rx_buffer_1),1000);
//printf("C02 Sensor Calibrated and set to polling\n");
```

```c
void Uplink_task(void){

    //char uplink_dbg_display[96];
    uint8_t lorawan_port;
    if(uplink_count < 12 && delayed_uplink_check_flag){

        delayed_uplink_check_flag = FALSE;
        Usart_chk_for_msg(&uplink_msg_buffer[0], uplink_count);
        lorawan_port = Uplink_determine_port(uplink_msg_buffer[PAYLOAD_CMD_INDEX]);
        lorawan_app_send(&uplink_msg_buffer[PAYLOAD_PAYLOAD_START_INDEX], uplink_msg_buffer[PAYLOAD_LEN_INDEX]+2, lorawan_port);
        UTIL_TIMER_SetPeriod(&Delayed_uplink_timer, 10000);
        UTIL_TIMER_Start(&Delayed_uplink_timer);
        uplink_count++;
    }
    else if(uplink_count >= 12){

        uplink_count = 0;
        //Going to make it so that after Sending Torque packets, we then retrieve C02 reading from sensor
        // and then uplink again
        uint8_t command[] = "Z\r\n";

        HAL_UART_Transmit(&huart2, (uint8_t *)command, strlen((char*)command),1000);
        uint8_t rx_buffer_reading [20];
        HAL_UART_Receive(&huart2, (uint8_t *)rx_buffer_reading, sizeof(rx_buffer_reading),1000);
        lorawan_app_send_aux(&rx_buffer_reading,sizeof(rx_buffer_reading) , 15);
        printf("\n");

    }
    /*uint8_t i;
```

```c
uint8_t lorawan_app_send_aux(uint8_t *p_msg_packed,uint8_t size,uint8_t port){

    uint8_t limit_check_status, i;
    uint8_t ret_value = TRUE;
        if(port == 15)
            limit_check_status = TRUE;

        if(limit_check_status == TRUE){
            LmHandlerSetTxDatarate(DR_3);
            AppData.Port = port;
            AppData.BufferSize = size;
            for(i=0;i<size;++i) AppData.Buffer[i] = *(p_msg_packed+i);
            ret_value = LmHandlerSend(&AppData, LORAWAN_DEFAULT_CONFIRMED_MSG_STATE, 0, false);
        }

        return(ret_value);
}
```

2. What problems did you run into? What is your plan for them?

No problems we've run into this week. In terms of what I need to do, I just need to refactor the code I wrote and switch over to helping Alex on the MQTT side of the project.

3. What is the current overall project status from your perspective?

We are behind, but as stated previously, we will be complete by the project showcases in the upcoming weeks.

4. How is your team functioning from your perspective?

Our team is functioning well, we just need a few members in our group to pick up the slack in terms of technical contribution.

5. What new ideas did you have or skills did you develop this week?

Well, I learned how to communicate with USART commands, and came up with a really easy and efficient way to tell the difference between C02 and torque sensor data, and this happens at the firmware level.

6. Who was your most awesome team member this week and why?

My most awesome teammate was Alex, who took initiative this week and wrote the required sections for the report.

Plans for Next Week

What are you going to work on this next week?

Im going to work on the MQQT side of things this week, and will start working on the presentation for the upcoming capstone showcases/reviews.