EE/CprE/SE 491 WEEKLY REPORT 7

March 7 - April 2

Group number: 9

Project title: Arinc429 Portable Receiver APP and Firmware

Client &/Advisor: Colin Cox & Daji Qiao, Mathew Wymore

Team Members: Eduardo Contreras, Riley Millam, Nicholas Morgan, Jared Staskal, Nate Trotter

- **Weekly Summary** *This week the firmware team continued to make progress in becoming comfortable and familiar with the hardware and the software that will be used to run and write the firmware. The Flutter team continued to familiarize themselves with the Flutter environment as well as beginning to prototype the application. Additionally, we've continued to research BLE communication, and the Arinc429 communication standard.*

- **Past week accomplishments**
    - Getting familiar with the Hardware from the client - All
        - Now that we've received the hardware we have started to test things with it to get more comfortable thinking about developing with it.
        - Have attempted some ESP32 IDF firmware programming starter examples to familiarize ourselves with different ESP32-S3 functionality and hardware pin layout.
    - Getting familiar with ESP32 development environment
        - Experimenting with the development tools and available framework
    - Getting familiar with the Flutter development environment
        - Exploring the features and abilities of Flutter
    - Worked on a variety of design components of the project for our design document
        - We now have a gantt chart with an estimated time of hours/week it will take to implement software functionality.

o **Individual contributions**

NAME	Individual Contributions *(Quick list of contributions. This should be short.)*	Hours this week	HOURS cumulative
Eduardo Contreras	● Experimented with ESP32 DevKit and tried programming some starter examples in ESP-IDF ● Researched and started BLE API documentation	13	49
Riley Millam	● Has been in charge of communication with the client and advisors. ● ESP32 programming	15	52
Nicholas Morgan	● Went over BLE modules and protocols ● Experimented with ESP32	11	51
Jared Staskal	● Researched Bluetooth Low Energy technology ● Began prototyping Flutter app	18	59
Nate Trotter	● Familiarized, researched, experimented, with new hardware ● Researched BLE more in depth	17	59

o **Plans for the upcoming week**

Next week we intend to expand on the Flutter application prototype as well as begin exploring ESP32's capabilities for BLE communication as we get closer to a prototype. We intend to have a meeting with our client to further discuss implementing BLE communication.

Below are some theorized sprints for progressing development as well as a Gantt chart showing the timeline.

Each Sprint is Around 2 Weeks

Sprint 1 - BLE on Flutter App, BLE on ESP32S3, Converter

Sprint 2 - Sending Data on ESP32S3, Label Creator, Display Functions

Sprint 3 - Sending Data on ESP32S3, Label Creator

Sprint 4 - Receiving Data on ESP32S3, Data Handler

Sprint 5 - Receiving Data on ESP32S3, Storage Handler

Sprint 6 - Finish Debugging on ESP32S3, Label Handler

Sprint 7 - Debugging entire project, wrap everything up

	AUG	SEP	OCT	NOV
FLUTTER APPLICATION		8/21 - 11/26		
CONVERTER	8/21-8/27			
LABEL CREATOR		8/28-9/24		
DATA HANDLER		9/18-10/1		
DISPLAY FUNCTIONS			10/2-10/22	
LABEL STORAGE				10/23-11/12
LABEL HANDLER				11/13-11/26
ESP32-S3		8/21 - 11/26		
BLE	8/21-9/17			
SENDING DATA			9/18-10/22	
RECEIVING DATA				10/23-11/26