

EE 492 Biweekly Report 7

1/25/21 – 2/8/21

Group Number: SD May 21-43

Project Title: Emergency! Need backup!

Client/Advisor: Collins Aerospace / Andrew Bolstad

Team Members / Role:

James Curtis / Meeting Scribe

Caroline Easley / Meeting Facilitator

Marcelo Abrantes / Engineer (Power Systems)

Michael Kuehn / Communications Director

Benjamin Welte / Project Documentation

Abbey Wilder / Test Engineer

Stepan Zelenin / Engineer (Communication Systems)

Period Summary:

Since the start of the semester, our team has been working on ordering parts, distributing them to different team members, and testing the parts in order to begin assembling the functional units of the radio and begin unit testing. This has also entailed selecting various additional parts and finalizing our testing plan for the radio's various functional units. We have also been coordinating with our client in order to clarify their preferred implementation strategy for the SNMP control feature on the radio, and we have investigated possible laboratory spaces for testing the radio's upper and lower frequency bands.

Past Period Accomplishments:

- Researched Arduino documentation to identify pin and timing options for I2C communication with the local oscillator – Ben
- Developed & ran test software on the Arduino to verify correct operation – Ben
- Tested human voice filter, multiplexors, and other parts – Marcelo, Caroline, James
- Selected additional necessary parts (filters, adapters, etc.) – Stepan, Marcelo, Michael, Caroline, James
- Revised test plan for the receiver – Stepan
- Read through SNMP tutorials & sample programs – Abbey
- Organized in-person meetings to begin prototyping – Michael, Ben, Caroline, Marcelo
- Facilitated communication between the team, advisor, & clients – Michael

Pending Issues:

- Need to verify high-frequency test equipment will be available in Coover – Michael
- Waiting for ordered parts to begin testing – Abbey
- Investigate methods for having 2 devices with different VDDs communicate over I2C – Ben

Individual Contributions:

Name	Individual Contributions	Hours this period	Hours cumulative
James R.	<ul style="list-style-type: none">• Tested receiver parts• Selected additional parts	12	12
Caroline E.	<ul style="list-style-type: none">• Tested transmitter parts• Selected additional parts	12	12
Marcelo A.	<ul style="list-style-type: none">• Tested transmitter parts• Selected additional parts	16	16

	<ul style="list-style-type: none"> • Distributed received parts to the team 		
Michael K.	<ul style="list-style-type: none"> • Selected additional parts • Created plans to begin prototyping <ul style="list-style-type: none"> • Facilitated communication between team, advisor, & clients 	12	12
Ben W.	<ul style="list-style-type: none"> • Read Arduino Documentation • Tested Arduino • Began I2C software 	13	13
Abbey W.	<ul style="list-style-type: none"> • SNMP Tutorials 	12	12
Stepan Z.	<ul style="list-style-type: none"> • Revised receiver test plan • Additional part selection & market research 	13	13

Plans for the Upcoming Period:

During the upcoming work period, we plan to finish testing our parts to verify that they work as expected before assembling the parts into individual functional units in order to begin unit testing. We are planning on using the TLA to test the radio's lower frequency band. We also hope to make progress in developing the software for the microcontroller to communicate with the local oscillator via I2C and with the computer using SNMP commands.

Advisor Meeting Summary:

During our meeting with Dr. Bolstad, we verified that our project is progressing at an acceptable pace and also discussed the best lab space to use to begin implementing our project. We verified that the project is progressing at a reasonable pace and decided that the TLA represents our best

option to test our project at lower frequencies. Another lab will need to be identified once high-frequency testing becomes necessary.