

EE/CprE/SE 491 WEEKLY REPORT 5

Start Date – End Date: 10/10/2024 - 10/17/2024

Group number: 13

Project title: PTSD Detection Device

Client &/Advisor:

Advisor: Mohammed Selim

Mentors: Bae Systems - Alice Crutcher, Michael Goderre, Jennifer Plakyda, Ryan Littler

Client: America's VetDogs - Cheyenne Whitetree

Team Members/Role:

Justin Scherrman - Design Engineer - Communications and Sensors

Neil Prange - Software Engineer

Aidan Klimczak - Design Engineer - Microcontroller

Justin Jaeckel - Software Engineer

Ty Decker - Team stenographer

Katerina Zubic - Team organizer and sensor engineer

- **Weekly Summary**

This week we accomplished some milestones with research and project planning. The group decided on different equipment from the previous project that we are keeping. We then decided on whether our two devices would communicate with Bluetooth or radio frequency. We researched small microcontroller options for the dog's device. We also finalized the Gantt chart for the project scope for the semester. We also developed a block diagram of the project.

- **Past week accomplishments**

- Decided to do bluetooth.
- Found small microcontroller options for the dog.
- Gantt chart
- Task Decomposition document
- Introduction to design document

Neil Prange - Research

- Researched the MAX86150 sensor and started working towards getting it working

Aidan Klimczak - Research

- Researched a smaller microcontroller for the dog

Justin Scherrman - Research

- Researched RF communication versus Bluetooth between the wearable wrist and vibration devices inside the dog vest.

Justin Jaeckel - Research

- Researched the ESP32 microcontroller and how to program it

Ty Decker - Research

- Researched bluetooth vs radio and capabilities of ESP32 microcontroller.

Katerina Zubic - Research

- Looked into bluetooth functionality. Fixed gantt chart and work hours doc. Additionally looked into RF communication.

○ **Pending issues**

- Getting control data from VetDogs along with a prototype dog vest.

○ **Individual contributions**

<u>NAME</u>	<u>Individual Contributions</u> <i>(Quick list of contributions. This should be short.)</i>	<u>Hours this week</u>	<u>HOURS cumulative</u>
Neil Prange	Researched MAX86150 sensor module, started looking into getting it working.	3	27
Justin Scherrman	Researched and compared RF and Bluetooth communications.	4	28
Justin Jaeckel	Started research into software development for the ESP32 microcontroller	4	28

Aidan Klimczak	Researched the smaller microcontroller and continued looking at ways to continue the project	4	26
Katerina Zubic	corrected the gantt chart and the work hours chart per Dr. Selims criteria. Looked into bluetooth functionality. Weekly meetings with team and BAE	4	27
Ty Decker	Continued product research. Continued documenting meeting progress. Researched bluetooth and capabilities of ESP32 microcontroller.	3	27

○ **Plans for the upcoming week**

- Complete lightning talk presentation
- Continue research on the project
- Research communication protocols (Bluetooth)
- Find a PPG breakout board for purchase
- Figure out the microcontroller for the dog vest
- Continue research on Bluetooth and Bluetooth low-energy

○ **Summary of biweekly advisor meeting**

Did not have an advisor meeting this week.

<https://www.mouser.com/pdfdocs/MAX86150EVSYS.pdf>