Matthew Baker

Engineering Journal

Senior Design Capstone I – Fall 2023 Semester

**Date: 9/14/23**

**Type of Meeting: Class**

**Present? Yes**

**Discussion:** Selected Scrum Master (Michael Kisellus), presented with general, “starter” vision and backlog document, discussed basics of type of device and purposes. Set up team meeting with Dr. Brown for Friday (9/15/23) to discuss backlog and vision document as well as any materials and documentation from previous design groups. Setup GitHub repo and discord server communications as well as event invitation setup. I volunteered to handle documentation collation, editing, and processing.

**Date: 9/15/23**

**Type of Meeting: Meeting w/ Product Owner**

**Present? No**

**Discussion:** I was absent during this meeting due to a family emergency, however the group assured me that all details would be placed on the Discord and shared with me.

**Addendum:** Product backlog posted as ‘Issues’ in the GitHub repo.

**Date: 9/19/23**

**Type of Meeting: Class**

**Present? Yes**

**Discussion:** Received draft of backlog from Scrum Master, instructed to prioritize the backlog as to completion time and necessity for the system overall, completed same. I volunteered to be the main editor and collator for the different design and requirements documentations as well as assisting in the case design in terms of the cooling system of the unit. Also reviewed the nature of the SRS and SDD with the Scrum Master.

**Date: 9/21/23**

**Type of Meeting: Class**

**Present? Yes, remotely**

**Discussion:** Created a mock-up for the cooling system in FreeCAD, utilizing a piece of sheet metal attached to a pre-fabricated 80mm heatsink and fan (PDF exported image pushed to repo). Working on a more involved design involving a heatsink designed to extend outside the case.

**Date: 9/26/23**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Scrum Master presented us with what was needed for SRS and SDD, including detail work and parts lists for all components. Each member came in with their needs and ideas for what we are working on. Dimensions of parts and data sheets shared amongst the group. SRS and SDD opened on Google Docs for ease of editing.

90% Completed mockup of cooling system in FreeCAD, added cooling system section to SDD, changed cooling system design to a intake-exhaust tunnel design using sheet aluminum and the chosen fans.

**Date: 9/28/23**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Follow up on previous meeting, ensuring that we are on target for completion of SRS and SDD.

Completed temperature-fan curve chart and added to SDD. Updated parts list to include fan controllers to track multiple thermal zones within the unit/case.

**Date: 9/29/23**

**Type of Meeting: Remote**

**Members Present: All**

**Discussion:** Perfomed editing pass and proofread of SRS and SDD deliverables once all sections were completed by the team, uploaded same to GitHub and submitted links to Canvas.

**Date: 10/3/23**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Update on changes to design, informed that we need to take a group photo. Began work on first demo presentation as well as shoring up our diagrams. Uploaded sample data file from client to Repo.

**Date: 10/5/23**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Gave Sprint 1 Demo, received feedback

**Date: 10/10/23**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Continued work on refining design, identified what was and was not working and made plans to gather equipment from client.

**Date: 10/12/23**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Discussed product scope with TA, made appointment to meet with client on 10/18 @ 1300 to discuss project goals and potential pivot to using existing modules rather than building from scratch. Began work on test plan.

**Date: 10/17/23**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Discussed test plan with TA and SDD changes/revisions. Discussed need to sit down with client and understand how the test procedure works with the lab equipment and to request any potential documentation.

**Date: 10/19/23**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Plans for revisions of SRS/SDD, analysis of existing lab equipment.

**Date: 10/24/23**

**Type of Meeting: Class**

**Not Present**

**Discussion: Not present due to issues related to my disability**

**Date: 10/26/23**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Discussed upcoming SRS/SDD revision completion and Sprint Demo 2, changed design of cooling system to remove need for 3d printed fan shrouds, instead using aluminum to enclose and direct airflow. Also created mockup for capacitor mounting frame.

**Date: 10/31/23 & 11/2**

**Type of Meeting: Class**

Myself not present due to son’s surgery, updated my portion of Sprint 2 Demo with updated aluminum shroud for unit.

**Date: 11/7/23**

**Type of Meeting: Class**

**Members Present: All**

**Discussion:** Updating on current situation. My system unchanged.

**Date: 11/19/23**

Resolved Cooling System Issue on GitHub Repo.

**Date:** 11/28/23

Initiated RMA on cooling fans as they run purely on DC and do not provide a speed sensor feedback to the controller.