Remote Viewing within a High Voltage Apparatus

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**Schedule and Validation**

REVISION – Draft

24 September 2024

Schedule and Validation

for

Remote Viewing within High Voltage Apparatus

Schedule:

| Work | End date | Owner | Staus | Date Completed |
| --- | --- | --- | --- | --- |
| Concept of Operation | 9/15/2024 | All |  |  |
| Functional System Requirements | 9/26/2024 | All |  |  |
| IInterface Control Document | 9/26/2024 | All |  |  |
| Project Parts Ordered | 9/24/2024 | All |  |  |
| Microcontroller Intro Project | 9/30/2024 | Blake |  |  |
| PCB Design Intro Project | 9/30/2024 | Julia |  |  |
| Web Application Intro Project | 9/23/2024 | Erica |  |  |
| Web Application Structure + Set up Firebase Project | 9/25/2024 | Erica |  |  |
| Design Login page and implement Firebase Authentication | 9/30/2024 | Erica |  |  |
| Midterm Presentation | 9/30/2024 | All |  |  |
| Image Recognition Training Data | 10/7/2024 | Blake |  |  |
| Buck Converter Design and Simulation | 10/7/2024 | Julia |  |  |
| Initial Microcontroller Code |  | Blake |  |  |
| Initial PCB Designed and Ordered | 10/10/2024 | Julia |  |  |
| Build Homepage that Displays multiple Live Video Feeds | 10/11/2024 | Erica |  |  |
| Initial PCB Received | 10/17/2024 | Julia |  |  |
| Buck Converters Tested on Breadboard | 10/17/2024 | Julia |  |  |
| Image Recognition Complete | 10/21/2024 | Blake |  |  |
| Design +Implement backend integration for fetching video feeds | 10/21/2024 | Erica |  |  |
| Status Update Presentation | 10/23/2024 | All |  |  |
| Initial PCB Complete | 10/28/2024 | Julia |  |  |
| Switch-State Determination for Fixed Pixels | 10/28/2024 | Blake |  |  |
| Switch-State Determination Complete | 11/4/2024 | Blake |  |  |
| Build Separate Page to view Specific Video Feed | 11/4/2024 | Erica |  |  |
| Create ‘Open’/’Closed’ alerts on website | 11/11/2024 | Erica |  |  |
| Added website features for user convenience | 11/15/2024 | Erica |  |  |
| Image Recognition and Switch-State Determination working together | 11/11/2024 | Blake |  |  |
| Final PCB Complete | 11/15/2024 | Julia |  |  |
| Final Presentation | 11/20/2024 | All |  |  |
| Finish Subsystem Presentation | 11/24/2024 | All |  |  |
| Subsystem Demo | 11/26/2024 | All |  |  |
| Work on report | 11/30/2024 | All |  |  |
| Finish Final Report | 12/3/2024 | All |  |  |
| Final Report | 12/5/2024 | All |  |  |

| Subsystem | Task | Detail | Data | Pass/Fail |
| --- | --- | --- | --- | --- |
| Thermal Sensor (Julia) | Provide Power | Input Voltage reads ~3.7 V |  |  |
| Microcontroller turns on |  |  |
| Sensor turns on |  |  |
| Buck Converters | Output to VDDC reads ~1.26 V |  |  |
| Output to VDD reads ~2.88 V |  |  |
| Output to VDDIO reads ~3.1 V |  |  |
| Output to ESP32 reads ~3.6 V |  |  |
| Receiving signal from microcontroller |  |  |
| Sensor Sending Video | Signal is coming from output |  |  |
| Microcontroller  (Blake) | Image Recognition Accuracy (90%) | Close and centered switch |  |  |
| Far and centered switch |  |  |
| Close and uncentered switch |  |  |
| Far and uncentered switch |  |  |
| Switch-State Determination Accuracy (90%) | Close and centered switch |  |  |
| Far and centered switch |  |  |
| Close and uncentered switch |  |  |
| Far and uncentered switch |  |  |
| Receiving Video from Sensor |  |  |  |
| Sending Video to Website |  |  |  |
| Website Application  (Erica) | Receiving Video | If video is not fetched after 30 seconds, an error will appear |  |  |
| Video should output with no more than 5 second delay |  |  |
| Video should be of correct vertical tower |  |  |
| Login-in System | Login with correct credentials |  |  |
| Login with incorrect credentials |  |  |
| Search Bar | Search bar directs user to the proper video stream |  |  |
| Video Display Page | Overview Page that displays multiple video streams |  |  |
| Video streams in overview page are clickable to redirect user to zoomed in video feed on a different page |  |  |