## Sep 27, 2023 | [Senior Design P50 Meeting](https://www.google.com/calendar/event?eid=NWdyamI4aHUxOHU2M29ydnQyamJqY2FyZTggcmFiYWlsZTNAbmNzdS5lZHU)

Attendees:

Present [Huangjie Gong](mailto:huangjie.gong@us.abb.com)

Present [Andrew Bailey](mailto:rabaile3@ncsu.edu)

Present [Manny Harris](mailto:erharris@ncsu.edu)

Present [Jeremy Edmondson](mailto:jedmond2@ncsu.edu)

Present [Labib Kasim](mailto:lkasim@ncsu.edu)

Present [Ralph Cullom](mailto:rmcullom@ncsu.edu)

Previous Action items:

* ~~Due 9/15 - Team - Complete product requirements and market summary~~
* ~~Obtain the testing hardware, one set of training hardware is already installed~~
* ~~Ralph (Meeting Scheduler) - Change Google meetings to Teams meetings~~

New Action Items:

* Set up github repo (Add access or clone for Huangjie) - add file hierarchy
* Research MQTT database storage and current setup for training data (links to resources at bottom of document)
* Explore options for data collection (small home, apartment, etc)

Agenda:

* **Previous Action Items**
* **Github repository (Mandatory)**
  + Repo is already create by senior design TA’s
* **Review System Architecture Diagram**
  + Assign subsystems (Primary Members / Secondary Members)
    - Wifi Communication / Data Storage (1P / 1B) Manny / Andrew
    - Machine Learning / Data Disaggregation / Data prep for machine learning (2P/ 2B) Labib & Andrew / Manny & Ralph
    - Website / User Interface (1P/ 1B) Ralph / Labib
    - (Low Priority / As needed) Device Hardware Improvements
* **PDR Scheduled for 10/5 at 1:30 PM (Team available 1:30 - 3:30 if time needs to change)**
  + PDR Presentation Responsibilities
    - Project Introduction
    - System Design
      * Subsystem slides - individual
    - Tech Demo Plans
    - Project Plan (Team Charter)
    - Mock-up demo (prototype)
      * Show existing project
      * Try to add google sheets communication before PDR
      * Show signals of training data
      * User interface design mockup
    - Potential Hardware Improvements
      * Removing noise in signal by measuring right at the appliance
    - MQTT
      * Current system: ESP32 exports MQTT messages, picked up raspberry pi (broker), pushed into database (influxDB possibly), Grafana could be used for plotting influxDB Data that has gone through ML process using python
* [InfluxDB](https://www.influxdata.com/products/influxdb/)
* [Getting MQTT Data into InfluxDB](https://fullstackenergy.com/mqtt-into-influx/)
* [Write CSV data to InfluxDB](https://docs.influxdata.com/influxdb/cloud/write-data/developer-tools/csv/)
* [Telegraf](https://www.influxdata.com/time-series-platform/telegraf/)
* [Grafana](https://grafana.com/)
* <https://mosquitto.org/>