## Sep 12, 2023 | [Senior Design Team 50 Biweekly Meeting](https://www.google.com/calendar/event?eid=MnBuOTRzNTVvNDJwOW4xN240NmhmZG1pYWpfMjAyMzA5MTJUMTMwMDAwWiByYWJhaWxlM0BuY3N1LmVkdQ)

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 9/7 - Ralph (Meeting Scheduler) - Set up recurring Google Meets invite every other week on Tuesdays from 9-10AM. First meeting 9/12~~

New 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

Agenda:

* **Action Items**
* **Project Requirements**
  + Align with sponsor on specific requirements to be met
    - Assumptions about the end user
    - Core requirements
    - Hardware
      * Look into improvements for both the training device and final sensing device
        + Assign priority to which improvements are most time sensitive (likely improving training device)
        + Assign long term goals to improve design for both
    - Software requirements
      * Power disaggregation
        + Separate power into categories

Lighting

HVAC

Water Heater

Washer

Dryer

Other

* + - * ML Training input
        + Based on shape of the signal, which is scalable
        + LSTM model
      * Accuracy
        + Use mean square error

Below 50% is acceptable

* + - * User Interface (Web)
        + Power profile for daily usage (Power / Time)
        + Weekly, monthly, and annual power sum
        + Power usage by device (D/W/M/Y)
      * Data storage
        + Data can transmit wirelessly from device to the computer

Stored as excel files

* + - * + Keep all data permanently
      * Mobile application (If time allows)
        + Display user interface in a mobile form
      * Resolution
        + 1 minute intervals for data storage
* **Questions/Concerns**

Random Notes:

* Don’t worry as much about accuracy on the graph, randomness will happen
  + Making sure we can record and send values is important
* More CT’s as needed for training module