Standing Meeting: GL-D and GS
September 29, 2021, 1300-1350

Previous minutes
Link to Discord
EGoT DC2 Test Plans
PEG Knowledge Share Spreadsheet

Attendees: Bass, Keene, Adham, Alsaid, Farooq, Spencer (out), Houlinhan

Agenda

Midrar

- State project objectives for the ~next two weeks:
  - Finish COP equation
  - Finish Temperature and EnergyTake equations
  - Outline HPWH source code in GL-D.
- The progress you've made since the last meeting
  - Mainly working on COP equations:
    - Created a HPWH model in python
    - For now the model only calculates the COP
    - Results of COP equation: share screen.
      - The COP equation is within internal tank temp
  - Finished EMCB paper outline.
    - I'll refer to Virtual Peaker website as a server.
- What do you need to do next?
  - Work on feedback (if any) on the COP equation.
  - Work on Temperature calculations.
  - Work on EnergyTake Calculations.
- Technical questions for the team:
  - Procedure:
    - Turn HPWH off
    - Run cold water into tank
    - Record, EnergyTake
    - Turn HPWH on
    - Measure power until HPWH reaches setpoint, EnergyTake = 0

      COP = (Energy Take Change)/(electrical energy usage)

      t = [start … finish]
      EnergyTake = [start … finish]

Power = [start … finish] x (delta time)
COP = [start … finish]

Sean

- State project objectives for the ~next two weeks:
  - Phase 2 (Input branch update w/ locational info and assignment)
    - MC Dev Roadmap
  - Rough out a “topology processor” class
- Testing Plan execution progress
  - None (Awaiting phase 2 testing)
- The progress you've made since the last meeting
  - ME Information Exchange (rough diagram):
    - https://miro.com/app/board/o9J_luL3bbE=/
  - Made block diagram of DER Registration Shell script
    - https://drive.google.com/file/d/126t23fzJwfdhYP-xCPu63U-bWz_9_anG/view?usp=sharing
- What do you need to do next?
  - Develop an EXTREMELY simple topology processor class
    - We already needed a function to add locational info to the measurements
    - A class will allow us to do that now, and will support more complex topological processing later without system redesign
    - Early tests will just use 1-to-1 bus to group designations in GO-GSP comms
    - Add DER-EMs to multiple buses
    - Update input branch to use location info
    - Put together assignment and association classes
- Technical questions for the team:
  - None at the moment

Mohamm

- State project objectives for the ~next two weeks:
  - Publish library done
  - Work on the control loop w/ Blue
  - Meet with Tylor and Blue to discuss the DCM code/presentation
  - Create a quick (interim) DCM
- Testing Plan execution progress
  - None
- The progress you've made since the last meeting
  - Working currently on the interim DCM
    - Involving Nicole good idea
- What do you need to do next?
  - Finish the DCM goals
- Technical questions for the team:
  - None

Umar

- State project objectives for the ~next two weeks:
  - Literature search for event detection.
  - Genetic algorithm based optimization techniques.
- The progress you've made since the last meeting
  - Studied Fresp Capstone project report from june 2021.
  - Studied Fresp Internship report from this summer 2021.
    - Ignore AI/LSTM aspects of the report
    - Algorithm is done and is described in the report.
    - Luke Tutino ← contact for slew rate detection algo
  - Read the underlying paper for the summer report part of whose work was implemented in summer internship.
  - Read the paper on unit optimization which you shared.
  - Did some literature search on event detection.
    - Genetic algo, see Emily Barrett Thesis
  - Had a brief meeting with Sean and Jacob yesterday.
- What do you need to do next?
  - Literature search on ML/DL approach for time series data analysis and event detection in power systems.
  - Learn about Genetic algorithm based optimization techniques, focus on Grey Wolf Optimization.
  - Question: What are the variables we need to optimize?
    - Slew rate detection algorithm - 4 variables. Chat w/ Luke.
    - Resides in the RTAC.
    - Review the performance criteria that the capstone team used to assess the ability of the algo to detect events.
- Technical questions for the team:
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Jacob

- State project objectives for the ~next two weeks:
  - Learning python
  - Familiarizing myself with the EGoT project
    - Read EGoT IP
    - Read ME IP
- The progress you've made since the last meeting
  - This is my first technical meeting
- What do you need to do next?
  - Following python tutorials and practicing in pycharm
  - Read the ME IP
  - Read other documents pertaining to the project
- Technical questions for the team:

- What other documents are there to start reading through?