

Attendees: Kayden Chad Hatem Majed

### Action Items For Review: (15 min)

AI:21 Chad

Build a unit for synchronizing the power system in the advanced power lab to the Avista system. This action item is going to change to configuring a SEL-351 so that it can be used to synchronize the system. I plan to get a copy of the 351 documentation at work. (10/16)  
Due 11/15

AI:26 Kayden Due 11/06

Kayden will talk to JJ about installing WEBEX software for "all users" onto the conference room computer for meetings with Stephanie. 10/30 In progress.

AI:27 Kayden Due 11/06

Figure out how to print the Gantt chart for the next meeting with Stephanie. 10/30 Still need to figure out how to print only the Gantt chart.

AI:28 Hatem Due 10/30 **Complete. The frame is ready for Dr. Li to review.**

Attend senior design next week dedicated to the WIKI page development. The first WIKI page review is next Friday. Hatem will be making sure the WIKI frame is up and ready to review. 10/30 Dr. Li gave us feedback in the meeting. He said it looks good, just add more information. Like the planning, background, and further information available.

AI:29 ALL Due 10/30

We will spend the meeting of the 30th to plan our design review and decide on a date for presentation.

## New Agenda Items

Review goals for lab on Sunday Evening:

Chad

- Get the cerebot talking to the encoder
  - I spoke to Dr. Santora about my first attempt. He made two recommendations, verify the part number on the encoder and reduce the frequency.
  - Ongoing issue -- encoder signals have not been easy to sample. Also, cable from encoder was suspected to be not wired correctly.
  - Also had to make a modification to his explorer board.
  - In the end, was able to see changing encoder signals from encoder successfully.

Majed

- Conduct one of the tests, it has not been picked yet
  - Windage loss, friction loss,  $I^2 R$  losses and ID Run
- Hoping to get the hardest one out of the way
- Work on the RSCAD tutorial
  - We started the tutorial on RSCAD and made some good progress on learning that.
  - Started friction and windage losses test and the supply voltages are not sufficient. Dr. Hess has been asked for advice, still awaiting a response. Maybe Dr. Johnson would have ideas as well.

#### Hatem

- Hook the load bank directly to the machine
  - Hooked the load bank up to the Model Power System
  - Andy went over the connection to the model power system, the load bank connections, and RSCAD tutorial/documentation.

#### Kayden

- Put on paper the connections to the VFD and the board. Create a list of registers that would be nice to see written to. (Change reference or increase/decrease speed).
- Mostly planning research, probably not too much hands on.
  - Kayden worked on researching the communication protocol.
  - The protocol is MODBUS and Kayden has worked with that at work. (Good news for us).
  - Set up a test and development environment at home.
- Filmography

Kayden has an updated Gantt chart that includes items from Majed and Hatem. We will review the Gantt if there is time and start talking about time in the power lab each week.

Team is waiting on feedback from Dr. Johnson regarding the client interview transcript.

Dr. Johnson completed his review of the client interview and signed an edited copy. Majed incorporated those edits with the copy on the team google drive.

Majed and Hatem will be working with Andy opportunistically throughout the semester for learning.

## New Minutes

Majed had the following questions for Dr. Johnson et al the experts.

1. We have to decouple the machine, who do we need to talk to regarding the decoupling?
  - a. According to Dr. Hess, we can simply loosen the couplers and slide them back. I will bring tools to lab Sunday.

2. Blocked rotor test, who do we need to talk to about blocking the rotor?
  - a. According to Dr. Hess, the start up torque is fairly low. We can put a rag over the shaft and clamp vise-grips onto it. The pliers should be placed against something to prevent rotation.
3. Is the temperature important for testing? According to the IEEE standard 112 - ? Standard Test Procedure for Polyphase Induction Motors and Generators, it is important.
4. Can we input parameters into the VFD? Or is our job to measure the parameters and insert them into the RSCAD model?
  - a. This is a good question for Dr. Johnson.
  - b. Majed is planning to speak to Michael West as well.

Dr. Li talked about what is coming up soon. The WIKI page is due 10/30. Also, preliminary design reviews will be done the first three weeks of November. We should try to get the design review done earlier than later, since the Master Thesis Defense will be in about the third week of November so the professors will have a hard time attending.

Stephanie asked about the Snapshot day. Kayden gave a nice overview. Generally, the discussions were mostly with engineering types, so we got good feedback, but we didn't get a chance to sell our project to non-technical types of people. Dr. Li, from an outside observer point of view felt like the slides looked really good. Also, Dr. Hess gave us some advice on how to get the voltage levels down to a manageable level so we could measure zero crossings with the microprocessors.

Dr. Li advised us to think about how we would explain our project to a high school student.

Dr. Li clarified that our initial design review may not have a lot of specific information in it. Currently, we have more questions than answers.

Dr. Li suggested we might want to conduct our design review at SEL rather than here on campus. Either way, we should try to get Dr. Fischer at the meeting. I will speak with Stephanie about the venue and I will also speak to Dr. Fischer about his availability.

We will also need to ask Dr. Johnson about the major outcomes of the project. Especially the challenges we are having around getting the IEEE tests complete.

AI:30 Chad Vorse 11/3

Communicate a date for the design review. This date will be the best for Dr. Fischer, Dr. Johnson and the team arriving. Cancel Friday meeting, 11/6, with Stephanie.

AI:31 Chad Vorse 11/2

Review the motors text book to assist with understanding the test we are doing from the IEEE standard and any work arounds that will be needed in the lab.

AI:32 Chad Vorse 11/6

10/30/2015

Byte-Back Team Agenda / Minutes

Download the template for the design review from the WIKI page.

AI:33 All 11/6

Everyone will spend another Friday morning working on the design review. We should have a date, some answers to our questions, and we will attempt to make some slides.

AI:34 Majed Hatem 11/6

Work on developing a good slide or two regarding the RSCAD model and the work you plan to do.

AI:35 Majed Hatem 11/6

Develop a list of questions for Dr. Johnson (input voltage caps too low, temperature of the motor, what to do with the model and what parameters in the VFD can we adjust, what about the ID RUN option in the VFD, other...)