

Attendees: Chad, Kayden, Hatem, Majed, Dr. Li, Dr. Johnson, Stephanie McDaid

Action Items For Review:

AI:42 Chad

Use SPI to read encoder. Isolate encoder and microprocessor voltages. Provide position and radial frequency to the PID algorithm. **In progress.** I haven't made progress on this as I am dealing with a mini-back crisis. Doc shot me with steroids and muscle relaxers (super strong ones, apparently) today, so hopefully I can get back to normal soon. 3/3/16 The majority of the action item was complete for the design review except the system did not work. Two suggestions were made. #1 make the microprocessor clock continuous and #2 Try pull up/pull down resistors on the CEREBOT developed clock. I am ready to test both of these this weekend. If neither work... I may have to buy different hardware. 3/10/16 I have tested both of the suggested fixes. Neither of them improved the encoder reading situation. I plan on trying to develop my own clock and read a input port as a final measure before ordering a new RS485 driver. 3/24 The encoder driver is working. The problem since before the design review was that the logic on the device enable is opposite of the logic on the read enable. I had programmed them to be the same.

AI:47 Kayden **Complete**

Send Stephanie the credentials for the team google page.

AI:48 Hatem **Complete**

Move all the google drive documents to the WIKI page.

AI:49 All **Drafts due April 7th!**

All supporting documents, like software, documentation, data sheets, needs to be compiled and provided as a project summary even if they don't end up on the WIKI page.

Lab Time Goals

Review goals for lab on Sunday Evening:

Chad

- Implement serial communication using only timer interrupts and port read/writes. **Complete**
- Calculate shaft RPM based upon encoder readings. **Complete**
- Get with Kayden and start designing the PID driver. **Not started**

Majed

- Work towards developing our finalized models. **Majed spoke to the Flash team about using their generator model so we have a standard model.**
- **Also, the VFD needs to be configured to run open loop so that they can calculate inertia on the system.**

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Hatem

- Inertia characterization and generator model.
- Work on updating the WIKI page.
- Refer to IEEE standard 115, esp section 4.4.9

Kayden

- Kayden will contact ABB technical support to ask for direction on a path forward. **Kayden emailed ABB but did not get a response yet.**

Goals for completion prior to Capstone

- I. Functional MODBUS
 - A. Write to fieldbus controller
 - B. Start and stop the system
- II. Read Encoder
 - A. Publish absolute encoder position
 - B. Publish shaft RPM in rad/sec
- III. Complete RSCAD tutorials
 - A. Run models from prior design team
 - B. Research book provided by Dr. Johnson to identify our model
- IV. Connect load to system
 - A. Switch in and out different loads
 - B. Collect data and publish on system response

Team discussed these as goals. No objections have been made. Will pursue these until decided otherwise.

New minutes:

Discuss final report content and timeline for getting it done. Rough draft is due April 07. There is an action item to track progress.

Discuss goals for completion prior to capstone day.

March 08:

DFMEA (Design Failure Mode Effective Analysis) Chad and Kayden

Log Books Individual

Portfolio Majed

Wiki page Hatem

Slides for the Poster Day to Kayden by Monday Night

Citizenship form Individual

3/10/16

Byte-Back Team Agenda / Minutes

RTDS needs an inertia measurement. Hatem and Majed will work on getting this done as well. Dr. Johnson looked up the appropriate IEEE standard for measuring system inertia. He went over how to download it with Majed and Hatem.

New AI's

AI:50 All

Picture and biography from everyone. Send to Hatem

AI:51 Hatem and Majed

Email me with any RPM, RPS or frequency calculations you need to collect

AI:52 Chad

Drive an output that will toggle on each zero crossing of the encoder.

Note: Team will get together on Sunday, 3/27, for completing the DFMEA.