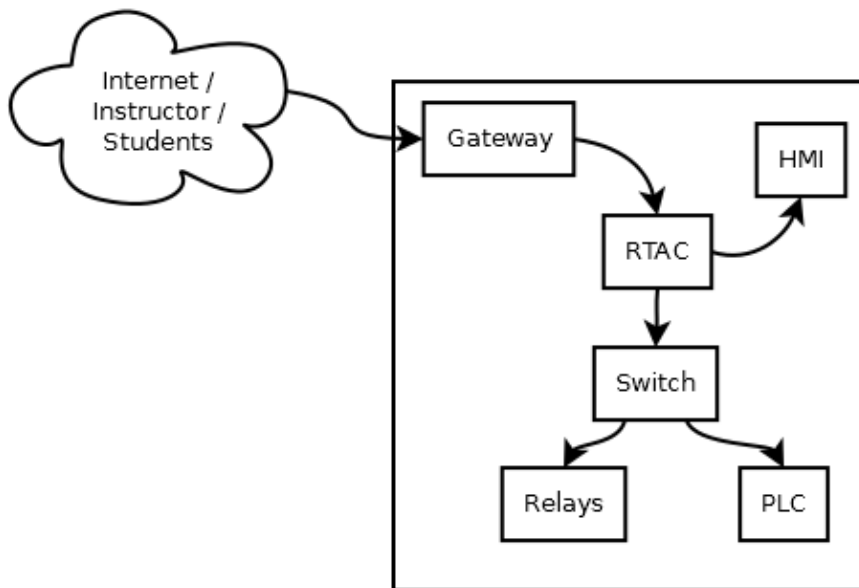


# Sep-17 Client Meeting

Thursday, September 17, 2015 3:21 PM

- Project is broad besides what is specified in diagram.
- Communications is most important (Ethernet).
- Wireshark will be useful for evaluating network information.
- 101 class is targeted at Political Science level technical knowledge...
- 201 class is targeted at Power Engineers
  
- Specific Physical limits: 60 lb max, single box.
  
- Documentation extremely important so that it can be replicated.
- Easily swap out hardware (Least amount of custom work).
- Third-party rackmount pelican cases do exist.
- Instructor is the only one interacting with the device.
- Follow up on jess email about HMI interface. Jess.smith.nerd@gmail.com
- Dr. Johnson has some extra hardware
- Follow up on list of scenarios
  - -theora rice masters thesis
  - -ryan bradetich thesis
  
- Take a look at shawnee sub data.
- Scope of the substation is limited to a standard, medium voltage substation
- -People that know cyber security: - Prof Haney, Idaho Falls campus; Jim Daniel in CS dept.



Here is the Dia file to edit if you want



SSIAB

# Sep-24 Meeting

Monday, September 21, 2015 8:49 PM

## Notes

- Wireshark: Ethernet packet sniffer. Copies data packets as they transferred.
- Case mounted display: LED vs LCD.
- Data transfer rate is not important with Ethernet
- RTAC controls only the SEL 2411 programmable automation controller, and SEL 751A relay.

## Tasks to Complete

- Need to get a locker
- Get keys for BEL G8
- Discussed upcoming due dates
  - Transcript
  - Requirements
    - Need to look over SELU course material
  - Contract
  - Snap shot

# Oct-8 Meeting

Thursday, October 8, 2015 2:51 PM

## Agenda

- Snapshot day #1 on Tuesday 10/13 in Power Lab.
- Plan future meeting times to work on project(Tuesdays at 1:30 pm)

## Notes

- Need to find a poster board for snapshot day
- Wear collared shirt for snapshot day
- Snapshot is poster + Q&A
- Team meetings on Tuesdays
- Agreed to do snapshot work over weekend
- Got key checkout forms signed by Dr. Johnson
- 

## Tasks to Complete

- Meet to complete snapshot day #1
- Get a locker
- Get keys for BEL G8

# Oct-22 Meeting

Thursday, October 22, 2015 3:44 PM

- Made some more detailed diagrams
- Made some progress getting into RTAC
- Dr. Li reviewed the snapshot poster
- Got new data from Jess, one-line diagram
- David got into 311L
- Discussed visualization options
- Need to do wiki page by next week
- Almost ready for preliminary design review

# Questions for Jess

Thursday, November 05, 2015 3:32 PM

## 1. Scenarios

- a. \*Denial of service
- b. \*Gateway misconfiguration
- c. Switch misconfiguration
- d. \*Encryption vs non-encrypted data
- e. \*Relays alert on logging vs not

# 11/10 Meeting w/ Jess

Tuesday, November 10, 2015 2:37 PM

- We are using DNP: be prepared for questions "Why DNP?". Research this.
- Doesn't matter what relay we use. 751A was merely a suggestion-- size can be a priority.
- HMI -> simple LED interface is ok. Jess is considering having a CS team revamp the HMI anyway for the following year. Our display does not have to be particularly verbose/complex.
- Do not be too concerned with strict budget. Don't worry about factoring relay into budget-- we should be able to get that without too much trouble.
- As of today, spec hardware for MODBUS instead of DNP3.
-

# Preliminary Design Review Nov-17

Saturday, November 21, 2015 12:33 PM

## Notes:

- Make sure SIAB is compatible with overseas power: 240V, 50 Hz, etc.
- Make sure visualization is visible from a distance, 20ft?(students observe from their desks).
- Relays have a longer lead time.

# 2/11 Meeting w/ Jess

Thursday, February 11, 2016 3:58 PM

- Have an HMI diagram written up before tomorrow and present it in the design review
- Mini substation in case and working by May
  - Order case
  - Does not have to be "pretty"
- Go for the GUI Visualization
  - Provide visualization diagram at Detailed Design Review
- Order: 2 Raspberry Pis, case, wireless keyboard and mouse
- Overseas power is important
- Where do we connect the HMI? Upstream from the gateway? Or connect it to the switch?



# 2/12 Detailed Design review

Sunday, March 6, 2016 4:59 PM

- Connect the HMI to the switch
  - Representing the substation
- Filtering: receive only what you want from the packet Sniffer
- Arm processor is the processor of the Raspberry Pi. Compatibility issues? There should be!
- No yellow visualization! That is the visualization should be appealing.
- At the end of the semester, get Jess all of the files: RTAC ACSELerator, Quickset, OneDrive, OneNote, etc.
- Fans (building automation) idea for PAC?
- Expo
  - Presentation during the morning
  - Booth during the day
- GJ01, Greg Clemousroon, has a label maker. He retires march 1<sup>st</sup>.
- Label the cables

# 3/10/16 Group Meeting

Tuesday, March 22, 2016 3:57 PM

- Attack that changes the PT ratio
- Old PT ratio:  $34\text{kV}/.120\text{kV} = 283.30$

# 4/7/16 Meeting w/ Jess

Thursday, April 7, 2016 3:50 PM

## Gateway Settings & Notes

- Push settings through back port.
- Install Enet port on box for instructor
- EthF Front port
- ETH 1 Subsquads subnetwork
- Eth2 Instructor Port
- Subnets for gateways:
  - Eth 2 10.10.10.254 (Instructor). Laptop is set to 10.10.10.10
    - NAT:
- PI2 IP Address reset to: 192.168.2.22

4/14/16

Thursday, April 14, 2016 4:03 PM

Today we discovered in order to connect a laptop to the Raspberry Pi through the gateway, the wifi must be disabled on the laptop.