

## CyWi: Open-Source Wireless Innovation Lab for Smart Ag, AR/VR, and Beyond

**Team Number:** sddec19-02

**Client:** Dr. Hongwei Zhang

**Faculty Advisor:** Dr. Hongwei Zhang

### Team Members

Chenye Lim                      Ryan Cullinan

Jian Chew                        Shay Willems

Pawel Darowski                Tyler Beder

### Dates

September 14 to September 27, 2019

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### Biweekly Summary

We continued fixing issues that we had last report with our server. After successfully getting Linux to install to the correct drive, we worked on configuring the server. The first step in this process was to get SSH and remote desktop installed. After that, we worked on getting our RAID setup working. From this point on, we'll be able to concentrate on implementing the open software Emulab.

We also figured out where the port on the TI motes for an attenuator is. In order to use it, we have to desolder on capacitor on the board, and resolder it another way, which will break the circuit to the onboard antenna. We are currently waiting for the cable to come.

We also performed a more detailed signal strength test of SDR with different distance on the grid to model real world situation. After that, we would be able to focus on having the feature of SDR being able to be controlled by the server.

### Accomplishments

- Successfully installed Linux onto the solid state drive that we will be using as our main OS drive
- Set up the remote desktop app Teamviewer to enable access to work on the server outside of the lab as well as established SSH remote access (within the ISU network)
- Set the RAID1 configuration on the server
- Obtain data on how distance changes the network performance of the SDR successfully

### Pending Issues

- TI antennas are still currently too strong

### Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Chenye Lim	Measured network performance with different distance on grid to model real world behavior. Configured ssh remote access on individual nodes. Ordered necessary kits for attenuator soldering.	8	53
Jian Chew	Measured network performance with different distance on grid to model real world behavior.	12	57
Pawel Darowski	Installed Linux on server, gained SSH remote access, and prepared for Emulab install	4	63
Ryan Cullinan	Fixed Linux install, set up remote desktop and RAID on server	8	37
Shay Willems	Searched datasheets for attenuator implementations	3	41
Tyler Beder	Searched datasheets for attenuator implementations	3	33

### Plan for Coming Week

- Unsolder and resolder capacitor on a TI, and test with an attenuator
- Install and begin configuring Emulab
- Connect SDR to the server
- Implement website for user to run lab experiment