Prepping Tasks

Tower Prep Checklist

- select correct DSM
  - check caps
  - mount on plate; add split link
  - duct seal cable holes
- configure Ubiquiti
  - update software
  - change password; set SSID; set WPA2 and password; set IP address; set name; set AP/SA PTMP
  - label with name and access point (and approximate compass bearing to access point?)
  - find the IP addresses in the networking spreadsheet
- select all sensors
  - mount sensor electronics on plate if needed; add split link
  - if EC100 used, check binary mode; set if necessary
  - if CSAT3A head, add ground strap
  - check DSM jumpers for RS232/485
  - if Li7500, make sure the DSM port has a 3A fuse
  - record all serial numbers
- select all cables
  - For tall towers, bring ethernet patch cord to connect to DTU Moxa system
- select booms; attach clamps & up-guys; add stop-screws
- pick out mote; check/tighten screw terminal block; check caps; record mote number
- select all cables
- assign a jug; power supply; power cord
- power up; pair to Bluetooth console or connect with ssh (IP address spreadsheet)
  - test Internet connection, using whichever option from the Network section below is available
    - ping the ubiquiti SA
    - with access point in ops center on, check if Ubiquiti LEDs show pairing; try to ping from outside?
    - ping the ubiquiti AP (ie, whatever AP the SA pairs with in the ops center, if available)
    - if this site is a ubiquiti relay, ping the local AP also
  - eolupdate (assuming it can reach the internet)
  - increase BT power: btrn -t 16 (use -b sec option if doing this through the BT connection, as per Gordon's bluetooth information below)
    - given that the DSM will be on a local network, it should be easy to ssh to the DSM from another laptop on the network
    - but it is still necessary to test the bluetooth console, especially after modifying the settings
  - ds
  - rs to each sensor (including rs G); CHECK DATA
  - lsu
  - cs

Bluetooth Radio Console

If you think the default Bluetooth transmit power may not be sufficient, such as for DSMs on a tower, use the btrn command to set the Bluetooth transmit power.

These commands can be used if you are logged in via ssh over the Ubiquiti link or ethernet. To show the current radio configuration:

```
sudo btrn -c
```

set transmit power to N in dBm (-12 to 16):

```
sudo btrn -t N
```

If you are logged in over the bluetooth console, then you must add a **-b sec** option, which gives you an immediate shell prompt, so that you can log out before the radio is queried or reconfigured. After **sec** have elapsed, **btrn** will run, sending its output and error messages to /tmp/btrn.log. Note this option is new, and has not been thoroughly tested. If you have an old version of btrn that does not support the -b option, run **eolupdate**.

```
sudo btrn -b 5 -t 12
# log out within 5 seconds
exit
```

Then log in again after 5 seconds, and check the contents of /tmp/btrn.log.

Networking and Internet Access for DSMs in the Staging Area

Options, in order of preference:

1. Point the Ubiquiti SA at the ops center outdoor AP (192.168.1.2). That way the DSM is on the net same as it will be at the tower. This also makes it possible to test data flow to the ustar server and look at staging data with cockpit.
2. Mount a Ubiquiti Nanobeam outside the ops center seatainer and point it at the ball room, as an alternative way for Ubiquiti tower SAs to attach to the tower network (192.168.1).
3. Run a cable from the Draytek router in the cafe to the backup Cisco router in the ops center, where the backup router is configured same as the production router, with a LAN of 192.168.1. That way DSMs and Ubiquiti APs can be plugged into the Cisco LAN and work same as if they were on the actual tower network.
4. Use something like a Cradlepoint with Wifi as WAN (WWAN) to connect to the public ops center wifi and provide wired connections to DSMs and Ubiquiti APs in the ops center ballroom.