

708184 - ESP Monitoring PNW

Week 50

1. Brent Roman
 - a. Provided a bit of help to Steph's lab debugging ESP 2G gripper issue

Week 47

1. Brent Roman
 - a. Steph discovered that the ESPfriday's gripper was failing to stop at it closed position
 - i. Which explains the trouble we were having late in the last deployment

Week 46

1. Brent Roman
 - a. Cell modem test rig I help develop a few weeks ago was deployed to compare two different modems performance while ship loitered around the ESP mooring site
 - i. I spent a couple hours yesterday monitoring it and playing with modem configuration.

Week 43

1. Brent Roman
 - a. Added signal quality logging to cell modem tester shipped to APL last week.

Week 42

1. Brent Roman
 - a. Shipped kit of parts for cell modem tester to APL Engineer who mounted them into a deckbox
 - i. For testing alternative cell modems off La Push, WA

Week 41

1. Brent Roman
 - a. ESPfriday finally seems to have dropped a sampling puck due to a gripper failure. Not recoverable, but only after processing 170ish of 192 pucks. Not bad.

Week 39

1. Brent Roman
 - a. Working with Tina's lab to determine cause of occasional camera overexposures

Week 37

1. Brent Roman
 - a. Review of debug log info indicates that 2G ESP camera is not very linear
 - i. Tweaked autoexposure algorithm on deployed ESPfriday to better cope with this

Week 35

1. Brent Roman
 - a. Added debugging output to try to understand occasional camera autoexposure errors
 - i. No failures since debugging output added (figures 😊)

Week 33

1. Brent Roman
 - a. ESPfriday continues sampling using Certus for comms

Week 31

1. Brent Roman
 - a. Carried cannibalized ESP 2G elevator to Steph Moore's lab and helped them repair ESPfriday with it.
 - i. ESPfriday deployed with Iridium Certus 100 satellite communications.

Week 28

1. Brent Roman
 - a. Testing and tuning Certus satellite comms with ESP on NOAA's roof.
 - b. Helped APL debug their current limiting power supply

Week 26

1. Brent Roman
 - a. Testing updated telebuoy power supply
 - i. But, still seeing undervoltage failures
 - b. ESPeddie over half through its samples
 - i. But, its Forearm is suffering from a bad case of cage creep
 1. Often needs manual intervention to get bearings aligned

Week 22

1. Brent Roman
 - a. Patched deployed ESPeddie to better recover from Forearm cage creep

Week 20

1. Brent Roman
 - a. ESP deployed off La Push continues sampling once every other day
 - b. Working with APL electrical engineer to debug power supply issues
 - i. Certus modem inrush current requires buffering with a large cap and slow-start circuit

Week 19

1. Brent Roman
 - a. ESPeddie deployed w/o satcomms
 - b. Testing satcomms on roof of NOAA Office

Week 18

1. Brent Roman
 - a. NWFSC Deployed one ESP off La Push. Not using Certus yet.

Week 14

1. Brent Roman
 - a. Some stress at NOAA early in the week due to a software bug in the rewritten ESP camera driver in the Linux kernel.
 - i. Needed to run on newer kernels, but “best practices” broke driver on older ones!
 - ii. Took 2 days to find and fix with conditional #defines depending on kernel version

Week 13

1. Brent Roman
 - a. Discovered timing bug in low-light camera Linux kernel driver
 - i. Due to using new “approved” user mem copy functions for newer kernels
 1. Believe “Fixed” by *only* using those functions in newer kernels!
 - b. Certus modem quit working after shipment to PNW
 - i. But started again after a issuing a firmware “factory_reset”
 - c. Decided to deploy without Satcoms in April, with in August
 - i. Not enough time to test.

Week 12

1. Brent Roman
 - a. Shipped back Certus modem after completing testing with it on Bld B roof
 - b. Altered log level of a few recurring kernel and daemon warnings
 - i. Reduce the size of the logs uploaded via the expensive Certus link
 - c. Remotely updated both of their ESPs
 - d. Determined how to run JXL decompression on their Windows laptops 😞

Week 11

1. Brent Roman
 - a. Testing, debugging and enhancing Certus/Cell comms mooring

Week 9

1. Brent Roman
 - a. Test and Debug of Cell/Sat/WiFi comms fallback logic in SatComms ESP mooring

Week 7

1. Brent Roman
 - a. Wrote scripts to reroute between cell and sat comms depending on service availability

Week 6

1. Brent Roman
 - a. Testing wireguard timing adjustments to save satellite link bandwidth

Week 4

1. Brent Roman
 - a. Wrote Ruby code to provide optional cjxl compression for puck images

Week 3

1. Brent Roman
 - a. Got PPP connection scripts working reliably with retries in chat scripts
 - b. Added a big capacitor to the telebuoy to deal with modem inrush
 - c. Discussed with UW how to incorporate this into the actual telebuoy