

Brent Roman Sorted By Project

706005 - eDNA Grass Carp Sandusky

706008 - READI-Net

- Ordered Rock S 0 as possible alternative to Rock PI-S board (Week 2)
- Met with dev team to discuss radio communications approaches (Week 3)
 - Will investigate NB-IOT and making 2nd USB host port available (Week 3)
 - Wrote kernel module to allow interrupting USB host power to reset (hung) devices (Week 3)
- Recieved SIM cards for evaluating NB-IOT cell service (Week 4)
- Provided cell service for Dock Test (Week 9)
- Consulted with Scott Jensen on serial port options and Linux port naming (Week 9)
- Updated RockPi-S to use current version of u-boot (Week 43)

708143 - ECOHAB

708165 - NOAA-MERHAB-UW

- Contributing to ESP deployment manual (Week 4)
- Discussed pump and flow meter test procedure ideas with Stephanie Moore (Week 5)
- Configuring a new Linux laptop for Steph's lab at NWFSC (Week 16)
- Ongoing support (Week 23)
- Participated on call discussing how to add Iridium Next Satcomms capability to UW ESP moorings (Week 24)
- Investigating improved JPEG-XL image compression as a means of reducing satcoms costs in Iridium deployments (Week 36)
- Improving documentation of Elevator calibration (Week 37)
- Reworking/documenting 2G ESP Elevator calibration procedure (Week 38)
- Wrote greatly simplified ESP 2G Elevator calibration procedure (Week 39)
- Improved 2G's automatic carousel calibration utility (Week 39)
- Steph accepted rewrite of the procedure for calibration of the 2G ESP Elevator (Week 40)
- UW also tested improved 2G carousel calibration code (Week 40)
- Tested libjxl compressing representative images supplied by NOAA (Week 42)
 - Great results (700kB $\Rightarrow$ 6kB without visible artifacts) (Week 42)
 - Porting libjxl to a small ARM processor is going to be a challenge (Week 42)
- Looking into how to port libjxl to ESP ARM Linux (Week 44)
- Starting porting libjxl (jpeg successor) to ESP Linux (Week 46)

- Switching ESP from using TIFF to PNG images (to ultimately compress using cjxl) (Week 46)
- Customized dumplog with script for NW Fisheries to analyze their recent ESP logs (Week 48)

771131 - Great Lakes PCM/HAB

- Working with team to spec out the dual depth sampling scheme for this summer (Week 16)

901205 - ESP SURF Center

- Working with WHOI to fix a long-standing bug in ESP Ethernet cable Plug/Unplug event handling (Week 2)
 - Rewrote daemon to greatly simplify it. Seems to work. Testing continues... (Week 2)
- Found and fixed long standing bug in handling brief losses of Ethernet carrier (Week 3)
- Helped WHOI diagnose Ethernet hardware problem with one of their ESP carrier boards (Week 3)
- Worked with Preston to understand desired changes in cartridge locking behavior for new carts (Week 3)
- E-Waste bound iMac became the new “bufflehead” ESP lab server. (Week 3)
- Helping Nadia calibrate rebuilt ESPkoa (Week 4)
- Replaced CPU on ESPbruce with current hardware revision (Week 4)
- Moved ESPshore to server room to avoid service cut during recabling Bld A (Week 4)
- Continuing to help Nadia bring up the redesigned ESPkoa (Week 5)
- Prepared replacement ESPchris CPU board for shipment to Greg Doucette’s lab (Week 5)
- Packaged and Documented new ESP 2G MSP430 firmware programming dongle (Week 5)
- Found and fixed a long-standing bug in the ESP Linux networking scripts (Week 5)
- Implemented slow startup of 3G’s sampling pump to avoid stalls due to stiction (Week 9)
- Split config file into multiple so 3Gs don’t need to read 2G config items (Week 9)
- Fixed long-standing bug in 2G “long” mission skeleton (Week 9)
- Helping Nadia find source of pump pressure spikes (Week 12)
- Wrote scripts to mount NFS filesystems only when on the MBARI network. (Week 15)
 - No longer need to alter /etc/fstab depending on where the ESP is deployed (Week 15)
- Shipped WiFi dongles to GLERL (since they can’t seem to order the correct parts) (Week 16)
- Helping Nadia debug hardware issues on the new 3G (re-)builds (Week 16)
- With Scott’s help on-site, restated one of the ESP’s in Ohio (Week 23)
- Added support for a secondary “skimmer” external sampler (Week 23)
 - Including pressure monitoring and recovery from head pressure loss (Week 23)
- One of the ESP 2Gs locked up with I2C bus failure, requiring a restart (Week 24)

- Haven't seen this failure mode since last major firmware update (Week 24)
- Waiting for final hardware to test skimmer on ESPonu bound for Great Lakes (Week 24)
- Pressure sensors on Denmark ESPs drifted (Week 24)
 - Pushed out a one-liner sed script to allow taring despite the large bias drift. (Week 24)
- Working with Nadia to understand why sampling pump pressure sensor is sometimes failing to tare (Week 36)
- Helping to prepare 3G ESPs for Canon (Week 37)
- Updating all 3G ESPs firmware to correct a minor bug discovered just before I left for Japan (Week 39)
- Investigating Preson's proposed software changes for 3G ESPs. (Week 39)
- Continuing to work with Chris Preston to improve 3G cartridge testing and error recovery (Week 40)
- Investigating how to limit sampling durations during upcoming sampler bakeoff at MBA. (Week 42)
- Wrote 2G mission for upcoming sampler bakeoff at MBA (Week 44)
- Working with Bill Ussler to test and flash firmware and FPGAs on a batch of new SPR boards (Week 46)
- Helps support ESP ops at the sampler bake off at Aquarium (Week 46)

901913 - Wet Wifi

- Shipped Modems back to Oceancomm for upgrade (Week 2)
- Helped LRAUV team access their AUV dock (Week 2)
 - Loaned them an OpenWRT router I'd configured with the needed port forwarding rules (Week 2)
- Working with OceanComm to refine can design to accommodate depth sensor on cap (Week 3)
- Verified that OceanComms modems revised end caps can be mounted in LRAUV and Waveglider (Week 4)
- OceanComms reports they will ship updated modems in a couple weeks (Week 5)
- Met with LRAUV and Wavegliders teams to plan for deployment in mid-March (Week 5)
- Upgraded modems should arrive Thursday. (Week 9)
- Replaced and updated routers on Waveglider and in deckbox (Week 12)
- Tank testing revealed latent networking bug on Galane (DHCP server being switched off) (Week 12)
- Working on 2025 proposal (Week 24)
- Incorporating MT feedback (Week 37)
- Arranged to repackage one of our H150 OceanComm's modems in 1km rated canister (Week 38)
 - For deployment on next month's MiniROV dives with Mola (Week 38)
 - Also will receive a pair of 1km range 50kb/sec modems to evaluate (Week 38)
- Working with MiniROV team to integrate a WetWiFi modem onto that platform (Week 39)

- Shipped our H150 modems back to OceanComm so one of them could be repackaged in a 1km depth rated housing. (Week 39)
- Johann Voiglander is constructing cables to deploy wetWiFi on miniROV (10/24) (Week 40)
- Fred Flores tasked with making bracketry (Week 40)
- OceanComm says they will ship the update modems back to us this week (Week 40)
- Had to return modems due to a loose transducer (Week 42)
- Should receive replacements before the 22nd for integration onto miniROV (Week 42)
- miniROV broadcast traffic is saturating the acoustic link (Week 42)
 - Exploring ways the Alana on how to limit this traffic (Week 42)
 - Found Linux based Wago PLC100 controller that can filter this traffic (Week 42)
 - However, no time to incorporate this for the Oct 28th test deployment. (Week 42)
- Purchased and configured Linux based Wago controller (Week 43)
 - Fixed a Wago bug preventing hostname from being sent to DHCP servers (Week 43)
- Arranged modem swap with Rachel Carson crew (Week 43)
- Negotiated miniROV dive sharing with Giancarlo (Week 43)
- Deployed on the miniROV Monday and Tuesday (Week 44)
 - High frequency modem works better than long range modem (Week 44)
 - Both struggling with acoustic interference (Week 44)
 - Likely from the USBL (Week 44)
- Working with DJ to test long-range modems on Ventana during MARS cable inspection dives. (Week 46)
- Finally finished the cable between the Ventana and H150 modem (Week 48)
- Hoping to test long-range H150 on Mars dives (Week 48)
- Working with DJ Osborne on reducing or eliminating subsea multicast traffic (Week 48)
 - As this overwhelms the limited modem bandwidth (Week 48)

DQ2232 - APL/NANOOS JdF

DQ2320 - McCloud River Salmon

- Purchased Pivotal's Iridium service with free incoming calls & installed rooftop antenna, only to discover that Pivotal's service was voice only, no data (despite their claims to the contrary) (Week 9)
- Ordered "open box" IP66 rated BGAN terminal – much faster than Iridium at similar cost (Week 9)
- Gave up on reusing our Iridium Satphones for comms (Week 12)
 - After discovering our "Free" incoming calls service does not handle data calls, only voice. (Week 12)
- Purchased a BGAN terminal (Explorer 540) off ebay. (Week 12)
- Chose a service provider that wasn't too overpriced (only \$4/MB) (Week 12)

- Worked hard to eliminate all unnecessary network traffic from expensive BGAN link. (Week 12)
 - Cached DNS aggressively (Week 12)
 - Tuned NTPd to update max of once every 30min (Week 12)
 - Ensured that Real-Time is set before Wireguard VPN connection attempted (Week 12)
 - Patch WireGuard kernel module to reduce its idle traffic >50% (Week 12)
- Ordered replacement for BGAN terminal accidentally fried by power wire slipping out of its screw terminal. (Week 15)
- Helped Scott configure the new terminal for 2nd try at installation on site tomorrow. (Week 15)
- BGAN sat comms works great (so far 😊) (Week 16)
- Supporting Jensen and Yamahara on two unscheduled service calls to the McCloud river (Week 16)
- Comms and ESP working perfectly. Boring. (Week 24)
- High temps (>42C) in can are a cause for concern. (Week 24)
- Running really well. Recovering scheduled for first week of October. (Week 39)
- Terminated BGAN satellite service (Week 43)

Just returned from 2mos vacation in Japan

Out of Office

- June 20 - June 31 (gunkholing in the Sacramento Delta)
- July 1 - Aug 31 (Vacation in Japan)

Overhead

- Configuring new Framework laptop (Week 16)