

Scott Jensen Sorted By Project

901204 - Enhancing Det Chemistries

901205 - ESP SURF Center

- Preparations for Gulf of Mexico deployment (Week 5)
- Preparation and packing for Gulf of Mexico deployment (Week 6)
- Working on plans for an alternate light duty, terrain based instrument housing (Week 9)
- Work with a Mechanical technician to identify the required elements for the ESP 2g terrestrial housing. (Week 10)
- Continued work on terrestrial housing as parts come available (Week 11)
- Attended a couple collaborator meetings (Week 11)
- Looking like the Harting connector is not going to be that wonderful, looking at a similar solution (Week 12)
- Mostly a meeting (Week 18)
- Beginning preparations for GoMex recovery. (Week 23)
- Set date for Scott Creek Power station retrieval (Week 23)
- One instrument suffered a sensor failure. The new sensor was calibrated and ready for installation. (Week 26)
- Scott Creek power station has been recovered, ran for just over a year supply power to a locally deployed ESP instrument (Week 26)
- Last minute Gulf of Mexico recovery scrub due to weather. Currently waiting for weather to improve (Week 26)
- Getting Scott Creek power station put away (Week 28)
- Put together test of power supply to be used on the SailDrone deployment (Week 33)
- Created drawings of the bulkhead connector pinouts that will be used with the Flower Pot instrument housing that will be deployed on SailDrone. (Week 33)
- Checked out power supply for SailDrone (Week 34)
- Completed drawings of cables for SailDrone (Week 34)
- Gathered material to send to SailDrone (Week 34)
- Traveled to move our recovery gear and then decommission ESP instrument and package everything to be shipped back to MBARI. (Week 37)
- Supporting Saildone effort (Week 38)
- Continuing to work on Elf failure. (Week 39)
- Uncovered a cold solder joint in one of the Elf boards for G3. This means all Elf are going to need to be inspected. (Week 40)
- Unpacking and putting away gear from Gulf of Mexico along with assisting with forensics. (Week 42)
- Supporting upcoming WF and SailDrone deployments (Week 43)
- Terrestrial housing lid has been machined and connectors potted. First pressure test showed a leak at the drum seam but a little grease seems to have sealed it. Next up is let it sit. (Week 45)
- Slow testing of the terrestrial housing is continuing. The connectors seem to seal but now onto all the little imperfection in an oil drum:) (Week 50)
- Most of the pressure sensors have been paired with a calibrated amplifier. (Week 50)
- Slow testing of the terrestrial housing is continuing. The connectors seem to seal but now onto all the little imperfection in an oil drum:) (Week 51)
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901405 - PowerBuoy Development

- Diagnosed transistor failure to capacitive inrush (Week 5)
- Waiting for parts to try and solve an over-current condition during bring up (Week 6)

- Finalizing plans to control capacitive inrush during transitions, hopefully (Week 9)
- Battery Contactor Control needed a design change to make it more robust and reliable. State diagram for the operation has been developed. (Week 10)
- Required parts were identified, and ordered. (Week 10)
- Worked on code for the battery Contact controller. (Week 11)
- Tried to get HV Bus and Bridge controller sent out, Jose was able to this week (Week 12)
- Investigate Battery options (Week 18)
- Battery Contactor Controller prototype has gone through the first round of testing successfully. (Week 23)
- Generator electronics have been proven out and will be able to exceed the needs of the system. The system quite happily generated 12kW. (Week 26)
- Took one step forward and two back with deployment hardware. It all mounts up nicely and ran well. Load dump needs to be tested and electrical adjustments made, if necessary. (Week 28)
- New set of power electronics are in and have been calibrated and tested. (Week 33)
- Working on the first revision of the Load Dump Switch that will deal with the inductance in the power delivery. (Week 33)
- Finished check out of new development PCB set (Week 34)
- Finished layout of new Load Dump Switch PCB (Week 34)
- Checked out the new set of deployment boards and then set them aside. Some more detailed work needed to be done on a few instabilities in the system and this kind of work should not be done on the deployment hardware. Settling time and some time constraints were the leading causes. With those cleared other items on the to do list are being addressed. (Week 35)
- An unstable operating point has been discovered, need to figure out the source. (Week 37)
- Cleaned up the bus voltage and current signals with a change in opamp performance. Which has reduced system noise by an order of magnitude. (Week 39)
- Uncovered an undocumented “feature” of the DSPic. Really it was a missed reality of the circuit but had a catastrophic effect. That has been cleared and the clunk is gone. (Week 40)
- Circuit changes have been made to deployment hardware. (Week 40)
- Investigations and prototyping of LRAUV dock concept (Week 42)
- Replacement batteries have been installed and now the entire bank is being charged and leveled. (Week 45)
- Deployment power unit is mounted on the lab MG setup. System characterization is taking place for modeling purposes. (Week 50)
- Deployment power unit is mounted on the lab MG setup. System characterization is taking place for modeling purposes. (Week 51)

901706 - Fault Prognostication

901805 - Coastal Biogeochemical Sensing

- Completed first draft of schematic for nano-pHOx (Week 5)
- Layout beginning for MphOx (Week 6)
- Overseeing fabrication of revision D of MFET/MCAP (Week 9)
- Entered pin assignments for Nano pHOx (Week 11)
- Found a very low power solutions for the hibernate feature on NpHOx (Week 17)
- Started the layout of NpHOx (Week 17)
- Figured out a very low power design for Wake and Hibernate circuits of NanopHOx (Week 19)
- Tested 5 reworked MFETs, all failed. Jose was able to salvage one. Others will need the same work. (Week 23)
- MpHOx boards have been checked out and ready to go to large build. (Week 26)
- MCAP suffered noise while operated near a Seabird 5P pump. Noise source was tracked to the pumps lack of common mode noise suppression capacitors. Addition of capacitor eliminates noise from MCAP. Some more diagnosis is needed to determine the noise vulnerability within the MCAP system (Week 26)
- Sent out for a fabrication build of 38 MpHOxs. (Week 28)

- npHOx is slowly taking shape with a first layout going into review. (Week 33)
- Put together history of MFET and MCAP (Week 34)
- Finished layout of nanopHOx (Week 34)
- NanopHOx is ready to be sent out for fabrication. (Week 35)
- Defined and of MFET/MCAP development with transition to distributable version (Week 37)
- Discussions around bringing the MFET/MCAP design to a stable release version and clearing various revisions. (Week 38)
- npHOx board has arrived and is nearly assembled. Current tests look promising as board bring up continues (Week 42)
- npHOx checkout is continuing. A poor choice in amplifier is causing some consternation and in search of an alternative. (Week 43)
- Failure analysis on a few MFET's are not turning up common problems. (Week 43)
- npHOx new FET bias configuration seems to work. Although, it does need op amps that can handle the higher common mode it imposes. The processor and ADC have been installed so that code can begin to be developed for it. (Week 45)
- Beginning work on a big order of MFETs. (Week 45)
- Big order to start standard stock of MCAP and MFET is underway (Week 47)
- MFET/MCAP has been sent out for fabrication and assembly. (Week 50)
- MFET/MCAP has been sent out for fabrication and assembly. (Week 51)

901909 - NH4- & DIC-Digiscan

DQ1870 - NOAA Merhab

DQ1904 - NOPP Saildrone

- The sample pressure sensor currently installed in instrument Koa has too much offset. This usually means the sensor has been damaged. Drawings for bulkhead connectors have been delivered along with parts. (Week 35)

DQ1942 - Buoy Power Generation

LRAUV Thruster Drive prototype has run the motor in the lab connected to the dynamometer. Efficiency numbers need to be compared to current implementation. It is a sensorless chip and seems to be able to start the motor and keep it spinning. A windmilling test needs to be performed. Discussions are starting about how the final device will interface and mount in the vehicle.

Out of Office

- Current schedule is Sunday-Tuesday
- Because of work related travel I will not be on site due to MBARI's policy which will be a minimum of September 17.
- Current schedule is Monday-Wednesday
- Quarantine due to travel until November 30. Working at home.
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Overhead

- Started Orcad PCB Editor training (Week 17)

- Orcad PCB training (Week 18)
- Worked on back to work plan (Week 19)
- Completed PCB training (Week 19)
- Looking into solidworks training in July during my post-travel quarantine. (Week 23)
- Figuring a way within Orcad and its Variant mode how to capture configuration jumpers settings. (Week 26)
- Used training from earlier this year to layout a PCB using PCB editor. Our resident expert says a few more boards and I might be proficient:) (Week 33)
- PCB training is coming along and I think my first board is ready for fabrication. (Week 35)
- Working with Orcad vault system, EDM, to figure out how it works and how EE's may best implement its use. (Week 38)
- Really getting a handle on the EDM software. About ready to bring in a few people to test setup and get feedback. (Week 39)
- Continued learning the EDM system for Orcad. We have almost all corners explored and the major functions operational. There are however a few details that need to be understood. (Week 40)
- Coordinating purchase of MBARI Wire Walker with RBR and Del Mar Oceanographic (Week 42)
- meetings (Week 42)
- Getting reacquainted with embedded programming with the development of a lower quiescent power motor drive for the thruster. (Week 45)
- Started roll out of Schematic version control system. (Week 45)
- Got the LRAUV thruster motor spinning using the driver IC being evaluated. (Week 47)
- LRAUV Thruster Drive prototype has run the motor in the lab connected to the dynamometer. Efficiency numbers need to be compared to current implementation. It is a sensorless chip and seems to be able to start the motor and keep it spinning. A windmilling test needs to be performed. Discussions are starting about how the final device will interface and mount in the vehicle. (Week 51)