

Engineering Weekly Report 6/18/2020 - 6/25/2020

Executive Council Notes

-

Individual Activities

- Francois Cazenave
 - Out of Office
 - Taking Friday off
- Mark Chaffey
- Danelle Cline
 - 901502 - Passive Acoustic Sensing
 - Humpback whale song topic model sweeps for Dirichlet hyperparameters: [gamma](#), [alpha/beta](#). Code for that is here: <https://bitbucket.org/mbari/soundscape-humpback-topicmodel>. Expect many more model sweeps in the coming weeks to fine-tune the final parameters. Looking at coherence in addition to perplexity as a measurement of quality.
 - Summer intern discussions on coherence, PCEN preprocessing etc.
 - Staged 5-year decimated data in AWS to share with collaborator Will Oestreich on Blue whale A/D call analysis. It was surprisingly fast to upload the entire 2kHz dataset.
 - Experimenting with prisma/graphql database with sound metadata.
 - 902005 - VARS Annotation Assistance
 - Summer intern discussions on track metrics using benthic/midwater test track data. Python metric tracking package is working on our test data and should address key ML performance questions. Work is progressing quite well with Peyton! Our focus will shift to creating a 2-hour test sequence shortly.
 - Setup CVAT and MLFlow development servers
 - Working on schema design and experimenting with [Cortex machine learning API](#) as a possible tool to simplify devops and compute scaling needs.
 - Discussion with UCSC Creative Coding lab scheduled for Tuesday June 30th.
 - Out of Office
 - Vacation day
- Duane Edgington
 - 901009 - CANON
 - Project meeting scheduled for June 25. Experiment in July...
 - 901603 - Video TAG: Vis Ocean Chng
 - Wrapped up CVPR. Lots of great work on advanced video processing systems to follow-up.
 - 902005 - VARS Annotation Assistance
 - Intern Peyton is making great progress!
 - Team meeting scheduled for June 25.
 - Out of Office
 - Vacation Monday June 22.
 - Vacation planned for Friday June 26.
 - June 14-19. CVPR. Virtual conference. Workshops, tutorials and presentations.
- Jon Erickson
- Kevin Gomes

- 901009 - CANON
 - Big overhaul of the ODSS. Move to Leaflet, bug fixes, new functionality. Although look has not changed much, bugs and functionality has.
 - Deployed to test and production
- 901205 - ESP SURF Center
 - More data migration from old to new server
- Overhead
 - Review panel
 - Starting on budget stuff
- Out of Office
 - Jun 26: Vacation
 - Jul 2-3: Vacation
 - Jul 29-31: Vacation
- Andy Hamilton
- Kent Headley
 - 600034 - Control Tech - Rock
 - Discussion of TRN updates w/ Rich
 - 901803 - Carbon Wave Glider Development
 - Testing/debugging feature for accessing text file regions (incl time search)
 - Working on scheme for external logging of ancillary licor data in lab
 - Drafting client software design
 - Overhead
 - Misc admin
- Rich Henthorn
 - 600034 - Control Tech - Rock
 - TRN replay utility bugfix
 - Replay data sources
 - 901405 - PowerBuoy Development
 - Enable processing on CANBus
 - Improve CANBus options
 - 901618 - Pelagic-Benthic Coupling
 - Detective work on last years SES mission failure
 - Implemented solutions, awaiting opportunity to test
 - Building utility to scan syslog for mission analysis
 - Out of Office
 - Beginning Friday!
 - June 26 - July 6, vacation
 - July 27 - July 31, vacation
- Brett Hobson
- Scott Jensen
 - 901205 - ESP SURF Center
 - One instrument suffered a sensor failure. The new sensor was calibrated and ready for installation.
 - Scott Creek power station has been recovered, ran for just over a year supply power to a locally deployed ESP instrument
 - Last minute Gulf of Mexico recovery scrub due to weather. Currently waiting for weather to improve
 - 901405 - PowerBuoy Development
 - Generator electronics have been proven out and will be able to exceed the needs of the system. The system quite happily generated 12kW.

- 901805 - Coastal Biogeochemical Sensing
 - MpHOx boards have been checked out and ready to go to large build.
 - 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
- Overhead
 - Figuring a way within Orcad and its Variant mode how to capture configuration jumpers settings.
- Out of Office
 - Current schedule is Sunday-Tuesday
- Brent Jones
- Chad Keczy
- Brian Kieft
 - 708158 - DHS Y6
 - Working through JIRA issues
 - 901800 - LRAUV Payload & Support
 - Acomms testing
 - Reviewed deployment data
 - 902009 - AUV UI
 - Met with team to review progress and prepare for proposal
 - Overhead
 - Meetings for work on UX and ROS proposals
 - Out of Office
 - 7/20-24 tentative
- Denis Klimov
- Eric Martin
 - 901101 - Ocean Imaging
 - Working with intern
 - Strobos have been modified, waiting for bulkhead replacements
 - 901206 - Coastal Profiling Float
 - Filling with oil this week.
 - 901405 - PowerBuoy Development
 - Testing top hat electronics, working so far, small adjustments necessary.
 - 901807 - Next Gen Acoustic Dorado
 - Proposal discussion for 2020
 - Back at sea this week, in full control of DMO at this point.
 - 901911 - ROVVR
 - Discussing a new PC for better control room integration.
 - DQ1942 - Buoy Power Generation
 - Finally got data from the radar last week
 - Preparing for paragon test.
 - 901200 - Telepresence
 - Preparing discretionary request
 - Out of Office
 - I am at MBARI Mon, Tues, and Friday
- Thom Maughan
 - 901009 - CANON
 - Starting minimap2 and cudamapper install on embedded arm+gpu
 - 901805 - Coastal Biogeochemical Sensing

- Primary focus has been on MPHOX to gate the assembly of 38 boards. MPHOX board bringup is complete (yeah!) and no issues found with pcb/layout or design. We had some issues arise during integration test that turned out to be a tiny component installed backwards - the little things can bite.
 - Scotts trip was delayed, so he took over the integration test and noise analysis for the pump-isfet interaction.
 - Reviewing bug and feature list.
- 902000 - Multi-Spectral StealthCam
 - Working on wiring JTAG connection to TagConnect to flash bootloader
- 902004 - Planktivore
 - Working to get quote on housing for CENCOOS funding. This has been challenging as there are a number of details that need to be figured out before getting a firm quote. Working with a good candidate though.
- 901713 - Nearshore FOCE
 - Sent email for the meeting giving status on MPHOX
- Overhead
 - Working with Gabe and Tatjana to get Techfest board and parts ordering complete.
- Out of Office
 - Vacation Plan is June 30 to July 21, driving to Colorado to help out family. Revised: Plan is to work for 1 to 3 days per week remote from Colorado as it is unrealistic to get Proposal materials complete before departure. Several projects are easily transportable. (4.5 comp).
- Mike McCann
- Rob McEwen
 - 901800 - LRAUV Payload & Support
 - Analyzing data to breakdown power usage between components. Hampered by each variable having its own time axis, which requires interpolation to do any computation involving more than one variable.
 - Will refine thruster drag estimates tomorrow when I have access to my office library.
- Paul McGill
- Ed Mellinger
- Tom O'Reilly
 - 901101 - Ocean Imaging
 - Refining MB-System+ bathymetry grid viewer prototype
 - Preparing preliminary design review for MB-System+ upgrade; PDR will be held on Friday 6/26 at 9:00 PDT
 - 901800 - LRAUV Payload & Support
 - Conducted cpu load balance tests of latest "backseat driver" middleware/messaging software on LRAUV vehicle in test tank; discussed results with team
- Craig Okuda
 - 901007 - Benthic Biology & Ecology
 - Test chamber valve linear actuator
 - Update isfet interface board
 - 901803 - Carbon Wave Glider Development
 - SV3 payload box integration
- Doug Pargett
 - 901205 - ESP SURF Center
 - Replaced the pump and oil dome on MV1. It's ready for testing.
 - Redesigning the TV array for the new cartridges.
 - Flower pot housing needs mods before 3d Printing. Some more issues found with our in-house printer.

- Ben Raanan
- Mike Risi
 - 600034 - Control Tech - Rock
 - Testing of mid-water tracking control system with Steve Rock in test tank
 - 901809 - Deep Sea Bioinspiration
 - Working on GUI mid-water tracking control system
 - Camera testing and calibration of mid-water tracking cameras
 - Out of Office
 - February 19-22: Ocean Imaging Cruise
 - March 9-12: Vacation
 - May 26-29: Vacation
 - June 29 - July 1: Vacation
 - September 30 - October 2: Vacation
 - October 12-17: Ocean Imaging Cruise
- Brent Roman
 - 901205 - ESP SURF Center
 - While setting up Scott Jensen's new env chamber for ESP 3G heater board calibration, we discovered the board bracket was holding it upside down. Paul Coenen fabricated a new bracket.
 - While updating ESP linux from 2.6.33 → 3.14.30, found and fixed an old bug in NXP's SPI driver that was causing all devices to run at the slowest's rate.
 - Linux used to take 15sec to load from SPI flash. Reduced this to 2.5sec!
 - DQ1865 - Bryde Whale
 - Recovery delayed for weather
 - DQ1904 - NOPP Saildrone
 - Finally heard back from their lead software engineer.
 - Out of Office
 - At MBARI Tuesdays after 4PM
- Carlos Rueda
 - 901502 - Passive Acoustic Sensing
 - Meeting
 - 901800 - LRAUV Payload & Support
 - Dash3: First phase of an overhauled document handling implementation is almost complete. The new Dash3 version is [v3.9.87](#). Along with various general UX improvements, this should also fix some of the issues with the traditional UI, and provide a much better basis for other possible enhancements: <https://bitbucket.org/mbari/lrauv-dash/issues/62>
 - Overhead
 - Continued dealing with crashes in my macbook. Among several measures, it seems like disabling SEP is helping make my computer behave normally again. We will see how this goes for 1-2 more days to determine next steps. Thanks Doug for all the help.
 - ESIP Semantic Tech meeting. Did a fix to issue involving resolution of SWEET ontology terms.
 - Out of Office
 - Jun 19: vacation
- Karen Salamy
 - 704109 - NavDORISS
 - Met with Ed Peltzer last week to go over Laser Lab safety protocols for the NavDORISS project. Received a key for future testing purposes.
 - Worked on campus yesterday and built the Embedded OS and installed the newest version of Holograms onto the system (4.2.0.10). I will need to touch base with the team in the near future

to determine if they require me to have the newer software incorporated into the Embedded disk image that we deliver to the Navy.

- Overhead
 - Spent a bit of time catching up on older emails.
 - Worked on the Docker build I have been building at home.
- Out of Office
 - Will be working on MBARI campus ONLY on Tuesdays until further notice.
- Brian Schlining
 - 500055 - Video Annotation DM
 - Many bug fixes and feature releases this week in the microservices and vars-annotation.
 - 901221 - Midwater Time Series
 - Running an analysis to look at variations between annotators for the same transects.
 - 902002 - Fathomnet Detect and Classify
 - Weekly meetings
 - Started some courses on implementing CQRS, which could be used to track change history in FathomNet.
 - Overhead
 - Working with CSIRO to package VARS UI Apps with Oracle drivers. Oracle drivers do not play well with [jlink](#).
 - Virtual meeting with interns
 - Out of Office
 - Jun 30 - Jul 3 [Vacation](#)
- Rich Schramm
 - Overhead
 - Writing documentation for the Pilots DiveLog application and database.
 - Out of Office
 - Jun 29 - 3-Jul Vacation
 - ~~Jul 30 - 3-Aug Vacation - cancel~~
 - Aug-10 -21 Vacation
- Alana Sherman
 - 300080 - DMO Support-Mini ROV
 - Ordered parts to supply power to new wireless bellypack.
 - 901618 - Pelagic-Benthic Coupling
 - Reviewed proposal draft and battery spreadsheet for October's cruise
 - Tested son-of-snappy, Rich updated the software. Still have a list of things to test with actual hardware but only discovered one issue with reading the battery voltage.
 - 901809 - Deep Sea Bioinspiration
 - Fixed a couple bugs in the laser control software in both the old and new versions of the code.
 - 901904.99 - Coral Camera System
 - Collected pieces to do comparative camera tests between the sony a7s and a7r. Took a while to find the right connectors, software, etc. but have everything ready for my next visit to the lab.