

Engineering Weekly Report 10/8/2020 - 10/15/2020

Executive Council Notes

-

Individual Activities

- Francois Cazenave
 - 901405 - PowerBuoy Development
 - I assembled the power transfer prototype and tested it successfully.
 - I am working on several designs of cable capture mechanisms
 - 902000 - Multi-Spectral StealthCam
 - I received parts from the machine shop and I am starting assembly
- Mark Chaffey
- Danelle Cline
- Duane Edgington
 - 901618 - Pelagic-Benthic Coupling
 - Green light to purchase MatLab Computer Vision Toolbox and maintenance ASAP to support analysis of recent dive footage
 - Plan to do analysis as soon as license is available.
 - 902005 - VARS Annotation Assistance
 - ~Daily work sessions with Danelle.
 - Running training jobs on AWS SageMaker Studio.
 - Coming up to speed on Spot instance use (saves cost, 70% in my experiment) for ML training.
 - Overhead
 - Group meeting Oct 12
 - Reviewed paper for *Fisheries Research*
 - Out of Office
 - Vacation Oct 16.
 - Oct 14. Watched webinar from RedHat on Containers, Kubernetes, Open Shift, Red Hat training opportunities. .
- Jon Erickson
 - 800139 - EyeRIs
 - Waiting on parts.
 - 901217 - Chemical Sensor Program
 - I'm ready to start putting parts in the shop queue for a prototype.
 - Have not yet received a quote from Amalga for the mandrel and tubes
 - 901809 - Deep Sea Bioinspiration
 - Have all the parts to test a new motor controller for PIV particle injector. This is Dales design, that Alana wants to use.
- Kevin Gomes
 - 901009 - CANON
 - Experiment support
 - Slack support
 - 901502 - Passive Acoustic Sensing
 - Helping with AWS related stuff

- 901915 - Improving MBARI Data Impa
 - Resurrected code that does metadata extraction from multiple system for model development around Activity concept
 - Data catalog API/GraphQL
- Overhead
 - Working on gaining familiarity with the Ship/ROV data processing
- Out of Office
 - Was on vacation last two days of last week (Oct 8/9)
- Andy Hamilton
 - 901101 - Ocean Imaging
 - Did some small cruise support
 - 901405 - PowerBuoy Development
 - Testing Power converter in lab in preparation to moving to Bldg D.
 - 902001.99 - 4K ROV Camera Development
 - Working with Mark on hardware specification for zoom/focus control
 - DQ1942 - Buoy Power Generation
 - Waiting on response from DOE, they're overdue.
 - Out of Office
 - On vacation until October 26
- Kent Headley
 - 600034 - Control Tech - Rock
 - Minor code review for Rich
 - 901803 - Carbon Wave Glider Development
 - coding/testing cron-like scheduler implementation
 - Doc edits
- Rich Henthorn
 - 600034 - Control Tech - Rock
 - Address issue with measT constructor that was causing memory allocation erros
 - 901221 - Midwater Time Series
 - Create the transects spreadsheet by processing the syslog and dvl.log files
 - 901618 - Pelagic-Benthic Coupling
 - SES prep for Sta.M deployment in 2 weeks.
 - Found source of poor SES images in the liquid solution between the lenses
 - Out of Office
 - Oct 27 to Nov 5: WF cruise to Sta. M
- Brett Hobson
- Scott Jensen
 - 901205 - ESP SURF Center
 - Unpacking and putting away gear from Gulf of Mexico along with assisting with forensics.
 - 901405 - PowerBuoy Development
 - Investigations and prototyping of LRAUV dock concept
 - 901805 - Coastal Biogeochemical Sensing
 - npHOx board has arrived and is nearly assembled. Current tests look promising as bard bring up continues
 - Overhead
 - Coordinating purchase of MBARI Wire Walker with RBR and Del Mar Oceanographic
 - meetings
 - Out of Office
 - Current schedule is Monday-Wednesday
- Brent Jones

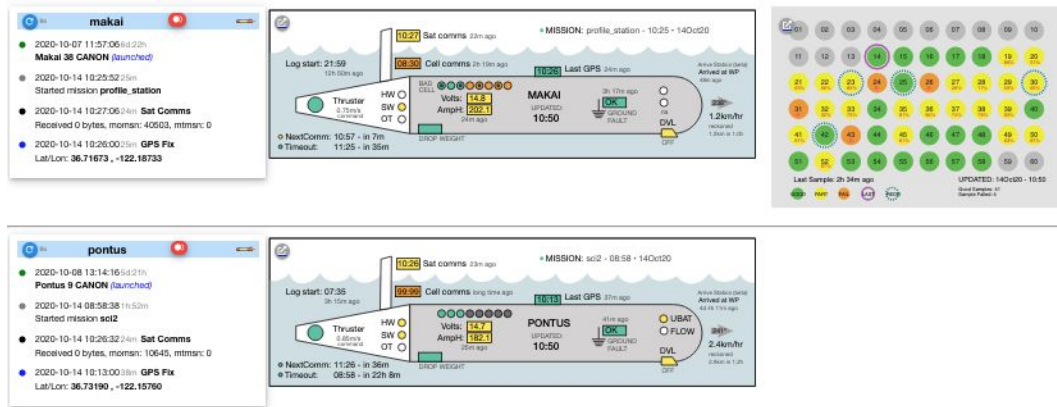
- 901112 - Change in MB & CA Current
 - Prepped, deployed, recovered, re-deployed CPF's in support of CANON
- 901502 - Passive Acoustic Sensing
 - Uploading odontecete click data to AWS
- 901805 - Coastal Biogeochemical Sensing
 - Prepped, deployed, and am flying two sprays in support of CANON
- Chad Keczy
- Brian Kieft
 - 300083 - DMO Support - LRAUV
 - Assisting CANON operations
 - 600034 - Control Tech - Rock
 - Reviewing data from last TRN run
 - 708158 - DHS Y7
 - Working on reverse thrust and various JIRA issues in preparation for the next docking deployment
 - Debugging issues with the bootloader. Working with phytec to figure out a file size discrepancy between online binaries and those built from source.
 - 901009 - CANON
 - Participating in the Fall CANON campaign with Makai/Pontus. So far it's going quite well and the team has, for the first time ever, taken both ESP and sipper samples at the same time from the same vehicle.
 - Out of Office
 - 10/19 - Monday
- Denis Klimov
 - 118000 - Safety Office - LSO activity
 - Reviewing action items for lab A283 conversion into Class 4
 - 800139 - EyeRIS
 - Preliminary design review for LRAUV integration
 - 901809 - Deep Sea Bioinspiration
 - Revising fiber optic penetrator assembly report; new laser targets are ready for black anodizing
 - 901903 - Bio Raman
 - Parts for sample chamber are ready for black anodizing
- Eric Martin
 - Out of Office
 - Tuesdays until 2:30PM
- Thom Maughan
 - 901009 - CANON
 - Learning how to operate the MinIT for DNA sequencing. Coming up with procedures that can be used to verify operation of the MinION. Ran minimap2 benchmark on MinIT.
 - Xavier NX. Software forensics on the MinIT to determine what packages are installed by Oxford Nanopore. Working to install / rebuild source packages from the ubuntu 16.04 MinIT to 18.04 on the XavierNX. Plan is to use wireshark to try and snoop the commands sent by the remote GUI via wireless as a guide to writing scripts that do the same thing for a headless system.
 - Coming up to speed on the many command line options for Guppy. Latest version has a more advanced LSTM neural net that improves the insert/delete (indel) errors by a couple percent.
 - Worked a plan B approach on a Jetson TX2 running Ubuntu 16.04 in case the XavierNX effort gets stuck in the ubuntu up-port mud.
 - 901805 - Coastal Biogeochemical Sensing

- nanoFET board is in assembly, scheduling board bringup for next week, possibly the following.
- 902004 - Planktivore
 - Project management, budgets, spend plan.
 - Board slides, board bullets.
 - Ordering cameras, compute, fast ssd, etc.
 - Larry Bird has the requirements and guidance for the first iteration on housing. He will be working on it when back from vacation and in 2 week quarantine.
 - Met with Annette Stahl of NTNU on lighting options for LAUV plankton microscope.
- Overhead
 - Met with Gabe Santos on the Pier Peer project for counting pinnipeds at the Cal Poly Pier. He has raspberry pi interfaced and streaming video through cell modem. He is working on tensorflow lite for identification. No EE student takers on the solar battery so Gabe is moving ahead with his own design. Also attended Gabe's Cal Poly techfest session.
- Out of Office
 - Working remote with regular access as needed at MBARI Tues,Wed,Thurs
- Mike McCann
 - 901009 - CANON
 - Seeing that data continue to flow into [stogs_canon_october2020](#)
 - 901111 - AUV Infrastructure Supprt
 - Processed Dorado missions 2020.282.01 and 2020.286.00
 - 901800 - LRAUV Payload & Support
 - Monique reported a problem with LRAUV section plots in the STOQS UI
 - Rolled out temporary fix where only temperature and chlorophyll are loaded
 - Out of Office
 - Vacation: 19-23 October 2020
- Rob McEwen
 - 901800 - LRAUV Payload & Support
 - Transferring obstacle avoidance code from Dorado to LR backseat.
 - Exploring the feasibility of linking Octree code into Matlab.
- Paul McGill
 - 901618 - Pelagic-Benthic Coupling
 - Reconfigured SES from MARS operation to autonomous mode for Station M. Troubleshoot imaging issue with SES camera. Disassembled, cleaned, and reassembled camera imaging chamber with Johnny and Rich.
 - 901700 - 2017 Acoustical Ocean Eco
 - Ordering materials and tools for sonar Faraday cage. Designing power input filter circuit.
 - 901904.99 - Coral Camera System
 - Working with Alana and Electrochem engineer to design battery for Coral Macro Camera.
- Ed Mellinger
 - Out of Office
 - Scheduled in-office days Tuesday, Friday
- Tom O'Reilly
 - 300082 - DMO Support - Wave Glider
 - Integrated and tested Iridium modem into MBARI's network, allowing easier remote access to Hotspot and other assets.
 - 901009 - CANON
 - Working with Carlos Rueda to refine and test mission execution manager service, which is intended to allow easier coordination of diverse robotic vehicle types (e.g. Wave Gliders, AUVs,

UAVs, etc) through a variety of user interfaces developed at MBARI and elsewhere. Integrating University of Porto's Neptus planning software as a test case.

- 901101 - Ocean Imaging
 - Helping Caress prepare code release of latest MB-System GUI prototype. Like the rest of MB-System the system must be easily built and installed on a variety of operating systems, including Linux and MacOS
- 901809 - Deep Sea Bioinspiration
 - Collaborating with WHOI's Dana Yoerger to define acoustic protocols between MesoBot and other vehicles such as MBARI's Wave Glider hotspot. Eventually we want to send MesoBot camera images over the acoustic link so that human operators are aware of science targets and can modify MesoBot's mission over the acoustic link.
- Out of Office
 - Was on vacation last week
- Craig Okuda
 - Out of Office
 - Vacation days
- Doug Pargett
 - Out of Office
 - A few more leave hours
- Ben Raanan
- Mike Risi
 - Out of Office
 - February 19-22: Ocean Imaging Cruise
 - March 9-12: Vacation
 - May 26-29: Vacation
 - June 29 - July 1: Vacation
 - September 7 - September 11: Vacation
 - October 12-17: Ocean Imaging Cruise
 - October 19-23: Vacation
- Brent Roman
 - Out of Office
 - At MBARI Tuesdays after 2PM
- Carlos Rueda
 - 901009 - CANON
 - MXM: some assistance to Tom regarding his Netpus adapter.
 - 901101 - Ocean Imaging
 - Replied to Dave's email regarding questions about automated builds at Docker Hub.
 - 901502 - Passive Acoustic Sensing
 - Met with John to catch up with status and start preparing ASA poster.
 - 901800 - LRAUV Payload & Support

- Dash4, now [4.1.4](#), with various adjustments, now including Steve's ESP status widget. Also some fixes as operators provide feedback during ongoing CANON.



- TethysDash backend (both regular and dockerized) now running on Tomcat 8.5.58.
- Doing some preparations for a proper WebSocket server in TethysDash and corresponding connection from Dash4 clients. Good preliminary results. General idea is to lessen, and even eventually remove, dependency on the external service for asynchronous notifications.
- WHOI Dash upgraded to 4.1.1.
- Overhead
 - IE meeting. Software licensing discussion.
 - docs.mbari: adjusted TethysDash and TethysL webhooks so they now use HTTPS access.
- Out of Office
 - Oct 15-16: vacation (I had previously entered Oct 22-23 by mistake)
- Karen Salamy
 - 704109 - NavDORISS
 - Still waiting for the team to confirm that the mechanical build is complete prior to testing the OS image on the PC104 stack SSD.
 - 901200 - Telepresence
 - Also, still awaiting to hear from DMO or management on when to make these changes live on the MBARI Precruise web form.
 - Overhead
 - Working to help Duane E. acquire a new quote for Computer Vision Toolbox for his Matlab license in order to use for the Pelagic-Benthic Coupling Project. I have not heard back from my MatLab contact yet but will forward the quote on as soon as it is received.
 - Working to build Apache Superset on a CentOS 8 system. Definitely not as simple as with a Debian OS.
 - Out of Office
 - Will be working on MBARI campus ONLY on Tuesdays until further notice.
- Brian Schlining
 - Out of Office
 - Oct 12-16
- Rich Schramm
 - 200103 - Core CTD Data -MDUC
 - Knowledge transfer on rovctd reprocessing and QC Flags to Kevin
 - 200105 - Core Nav - MDUC
 - Resume navproc work with M.Risi
 - 300070 - DMO Support- Ventana
 - Ventana Ground fault testing support
- Alana Sherman

- 901904.99 - Coral Camera System
 - Had Teleconference between Electrochem and Paul M and I to discuss battery pack design.
 - Planned with Paul how to tackle current limiting, looking into an available solutions that I can test with a strobe I am borrowing.
 - Started testing new Sony a7r3, battery error message does not seem to be an issue, I am modifying our Snappy code to allow for a more graceful shutdown
 - Making test cable from SeaStrobe
- Out of Office
 - Back in the office this week :)