

Engineering Weekly Report 2/20 - 2/26

Executive Council Notes

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Individual Activities

- Francois Cazenave
 - 901405 - PowerBuoy Development
 - I helped stage the equipment for the external review
 - I am working on various tasks related to the upcoming deployment
 - I prepared a brainstorming session on the AUV cable dock.
 - 902000 - Multi-Spectral StealthCam
 - I am working on the design of the electronics housing
 - Overhead
 - I participated in a meeting with the external reviewers
- Mark Chaffey
 - 300082 - DMO Support - Wave Glider
 - Staged the second 1U HotSpot payload with tech support for final wiring.
 - 902001.99 - 4K ROV Camera Development
 - Built thermal model in excel that will be used to determine fan and heatsink requirements for chassis and housing. Verified with actual at-sea and design data from i2MAP.
 - Received Sony camera module and lens.
 - Loaded in camera 4K license package and color corrected camera output.
 - Measured camera power dissipation and thermal properties - good news, camera came in at less power than estimated. Makes heat load design easier.
 - Set-up baseline lens test in building G, will finish this testing Thursday.
 - Phone conferencing with DSP&L and the optical consulting engineer weekly.
- Danelle Cline
 - 901502 - Passive Acoustic Sensing
 - Instrumented [topic model](#) with wandb logging, ran two sweeps for K-means over different PCEN parameters, [first](#) broad then [fine](#). Next steps are to run full model sweeps with best PCEN parameters.
 - 902005 - VARS Annotation Assistance
 - Testing jupyter notebook with example benthic video processing pipelines using TensorFlow + MLFlow. A similar notebook will be developed for midwater. Ostensibly, the notebooks we are developing can also be adapted for Station M and drone still image processing. SageMaker has some great examples for those of you interested in this space. Please come talk to me or Duane Edgington for more details.
 - Spun up MLFlow in AWS for development testing
 - Added nose unit tests to tfrecord utility
 - Adding semantic versioning and bitbucket pipelines for automated releases
 - Working on system requirements
 - Sent out ideas to the team on user interface design and discussions with Carlos about design ideas
 - Overhead

- Attended ER meeting and tuned into presentations on bluejeans
 - Out of Office
 - Vacation day Monday 3/2.
- Duane Edgington
 - 901618 - Pelagic-Benthic Coupling
 - Assisted Paul McGill & Alana in capturing calibration images for DiSCO Coral Observatory Camera (to deploy next week)
 - 902005 - VARS Annotation Assistance
 - Continued work on implementing MLFlow workflow on SageMaker with Conda3 kernel jupyter notebook
 - Exploring SageMaker Studio and SageMaker Debugger (new AWS tools in Preview)
 - Overhead
 - Attended ER prep meeting
 - Attended ER presentations Weds Morning.
- Jon Erickson
 - 701145 - Penguin Hotspots
 - The EK-80 electronics chassis parts are in the shop queue.
 - 800139 - EyeRIS
 - Aaron pressure tested the modified (lengthened) Camera Case
 - 901405 - PowerBuoy Development
 - Gen parts are out for painting.
 - 901800 - LRAUV Payload & Support
 - Bracketry for a new TriTech altimeter.
 - 902010 - Mesopelagic LRAUV
 - Working on a set of Functional Requirements for the pressure tube. This would go to Amalga Composites for their N.R.E. work.
- Kevin Gomes
 - Overhead
 - All External Review all the time :)
 - Out of Office
 - Feb 18-20: Out sick
 - May 6-7: Vacation
- Andy Hamilton
- Kent Headley
- Rich Henthorn
 - Out of Office
 - Mon Mar 9 - Thu Mar 12: Vacation, VPN access, PST
- Brett Hobson
- Scott Jensen
 - 901205 - ESP SURF Center
 - Working on plans for an alternate light duty, terrain based instrument housing
 - 901405 - PowerBuoy Development
 - Finalizing plans to control capacitive inrush during transitions, hopefully
 - 901805 - Coastal Biogeochemical Sensing
 - Overseeing fabrication of revision D of MFET/MCAP
- Brent Jones
 - 901112 - Change in MB & CA Current
 - Begin preparation for CPF deployment. They havent been used in over a year so tank tests are in order this week
 - 901800.98 - Bioacoustic Payload

- Continue working on internal wiring schematic
 - Begin assembly of pressure case by installing bulkhead connectors. Prepping for pressure testing
 - 901805 - Coastal Biogeochemical Sensing
 - Standing 24/7 watch for deployed Spray
 - Out of Office
 - Vacation - feb 18-21
- Chad Key
 - 901704.99 - 8 Camera Obs Lander
 - Continuing work on the technical sections with Elena
 - 901713 - Nearshore FOCE
 - Received the wired up (new) micro node. Will install in lab test fixture..
 - Having Jose order 20 MpHOx boards and 20 MCAP boards for Durafet housings
 - Reconfigured wiring to accommodate the MpHOx boards
 - Updated cabling diagrams
 - 902000 - Multi-Spectral StealthCam
 - Finalized decision on housing arrangements
 - Gathered parts for external wiring.
 - Driver pcbs out for fab currently (parts have arrived)
- Brian Kieft
 - 708158 - DHS Y6
 - Added upward looking DVL interface
 - Troubleshooting network issues at WHOI
 - Lab testing with remote team
 - Meetings to prepare for March under ice demo in Lake Superior
 - Wrote summary of February under ice demo
 - 901009 - CANON
 - Tested DVL firmware fix on Pontus
 - Prepped vehicle software for launch tomorrow
 - Out of Office
 - Mar 2 - 10, Vacation, GMT -7
 - Mar 16-29 Michigan (NMU) under ice, EDT
 - July 18-31 Arctic, ADT
- Denis Klimov
 - 118000 - Safety Office - LSO activity
 - Revising laser safety protocol for RAMAN group to include tech level users in order to work on building DORISS II instrument
 - 901809 - Deep Sea Bioinspiration
 - Taking feedback and revising a report on chemical etching of fiber optic inserts.
 - Overhead
 - Revising schematic for bridge board for BEDs instrument
- Eric Martin
 - 901101 - Ocean Imaging
 - Efforts at sea last week have proven the light bar concept can produce great improvement in image quality. However difficulties with collecting data at depths greater than 1500 meters will need further investigation.

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- 901206 - Coastal Profiling Float
 - Met with Gene, building up battery packs with Ed.
- 901405 - PowerBuoy Development
 - Buoy controller rewiring is almost complete, I will need to check it out next week.
 - I'm working with Jose to route a board for breakout of the load cell amplifier.
 - First draft of the spring wiring in for review to Andy. I'll need to rework the spring controller for a few missed items in my BOM.
- 901807 - Next Gen Acoustic Dorado
 - System at sea this week, so far seems to have achieved its mission.
- 901911 - ROVVR
 - Met with Leila Takayama (UCSC) and are developing projects for her students to undertake that will accelerate our AR element generation.
- DQ1942 - Buoy Power Generation
 - Radar wiring was part of the controller wiring, we'll be able to test the system next week.
- Overhead
 - Participated in the breakout sessions for the ERC.
- Thom Maughan
 - 300083 - DMO Support - LRAUV
 - NTR
 - 901009 - CANON
 - Received MinION desktop DNA sequencer!
 - Found a procedure for ARMv8 / ThunderX2 build of BLAST.
 - Identified several source packages for GPU accelerated BLAST (server), selected one.
 - Met with Nate and Francisco to align on high level priorities and tasks. Working on a presentation to better educate on what HiPP entails from a hardware and software perspective.

- 'Big' literature search for genomic software tools used for sequence lookup in database for taxonomy id. Found some interesting papers, algorithms and benchmarks. Discussed with Nate who helped decode the lingo. Talked with Katy and Jacob about their tool usage - quite a diversity.
 - Email discussion with Mike Vella of NVidia on the approach for running taxonomy id tools on TX2/Xavier.
 - Working with Nate to get a benchmark fasta file that takes about an hour to process on the VM cluster with BLAST with the full genome database.
 - Working on project kickoff slides.
- 901805 - Coastal Biogeochemical Sensing
 - Talked to Brent, next Glider deployment is in April.
 - In progress on configurable status message protocol
- 902000 - Multi-Spectral StealthCam
 - pwm board bringup code. Simple protocol definition.
 - Added the sensor node firmware task this week. Four serial config'd and tested, only needed 2.
- 902004 - Planktivore
 - NTR
- 901713 - Nearshore FOCE
 - Added a delimiter to aid Labview message parsing. Scoped making a m2m protocol, but that's too much work for the near term. Dale is fine with what has been delivered
 - Getting Bridget setup with CCS and source code so she can get experience with MFET and Aanderaa sensors.
 - Comp=2.
- Out of Office
 - Mar 12 - Mar 30 Vacation (St. Helena with Georgia Aquarium)
- Mike McCann
 - 901009 - CANON
 - Fixed "404 Not Found [IP: 91.189.88.31 80]" Docker error by upgrading to ubuntu:19.10
 - Deployed 3D Curtain animation capability on 3 production STOQS servers
 - 901800 - LRAUV Payload & Support
 - On a journey to find and fix all the causes for missing ESP Cartridges from STOQS:
 - With Ben and Brent's help loaded new ones from a missing .dlist
 - Writing parser for syslogs vice using TethysDash to get ESP metadata
 - Expecting additional issues that will need resolution
 - Overhead
 - Participated in some External Review Committee activities
- Rob McEwen
 - 600034 - Control Tech - Rock
 - Assisting with debugging Replay
 - 901800 - LRAUV Payload & Support
 - Developing an OI Deltat simulation model for obstacle avoidance
 - Overhead
 - Developing a Deltat simulation model for Ocean Imaging
 - Out of Office
 - 27 Feb.
- Paul McGill
 - 701145 - Penguin Hotspots
 - Finalized electronics chassis layout with Jon E.
 - 901700 - 2017 Acoustical Ocean Eco

- Finally found and corrected problem with MXNet installation on DeepDark and can now run neural nets with multiple GPUs.
 - 901904.99 - Coral Camera System
 - Tank tested camera overnight, and captured a bunch of calibration target pictures to try some new distortion removal software. Mobilizing for Mon cruise on Flyer.
 - Overhead
 - Attended Ocean Sciences meeting in San Diego last week
- Ed Mellinger
- Tom O'Reilly
- Craig Okuda
 - 901220 - Midwater Ecology
 - Assemble ADCP and camera mount
- Doug Pargett
 - 901205 - ESP SURF Center
 - Helping McLane rebuild 2G ESPs.
 - 901800.98 - Bioacoustic Payload
 - Pressure housing parts are here.
 - Building up test gimbal assembly.
 - Overhead
 - Reviewing pressure codes to help out Gene.
- Ben Raanan
 - 708158 - DHS Y6
 - Software updates for under-ice docking
 - Overhead
 - ER
- Mike Risi
 - 901101 - Ocean Imaging
 - Tested software changes and new strobe rotators at sea
 - 901809 - Deep Sea Bioinspiration
 - Helped prepare for an external review demonstration of mid-water tracking
 - Preparing MiniROV for next week's cruise series to test mid-water tracking
 - Out of Office
 - February 19-22: Ocean Imaging Cruise
 - March 9-12: Vacation
 - September 18-29: Ocean Imaging Cruise
 - September 30 - October 2: Vacation
- Brent Roman
 - 901205 - ESP SURF Center
 - Supporting McLane Labs visit
 - Converted a few more ESPs to new, more compact configuration file format
 - Characterizing 3G cartridge heater boards (this will be a slow process)
 - DQ1865 - Bryde Whale
 - Mooring appears to be collecting samples like clockwork
 - Comms cost is about \$5 per sample
 - DQ1904 - NOPP Saildrone
 - Upcoming kickoff visit in Alameda, March 6th
 - Out of Office
 - First week of April (college prospecting)
- Carlos Rueda
 - 708158 - DHS Y6

- Prepared and released dockerized TethysDash system [3.9.73](#). Successfully installed by WHOI, although discussions continue as they get to exercise the system.
- 901009 - CANON
 - MXM development, with various adjustments done to the TSAUV Front tracking implementation to reflect MXM provider interface changes.
- 901502 - Passive Acoustic Sensing
 - Looking into the segmentation file provided by John, with the idea of possibly “correlating” this information with the clustering exercises already performed, and maybe even somehow assisting some new clustering variation.
- 901800 - LRAUV Payload & Support
 - Couple of additions for Dash3, now [3.9.74](#).
- Overhead
 - SE IE Group meeting; Attendance to ER presentations.
- Out of Office
 - Feb 25: Sick
 - Feb 21, Mar 11-12, Apr 9: Vacation
- Karen Salamy
 - 704109 - NavDORISS
 - Attended kick off meeting for the project on Monday
 - Assembled the PC104 stack version for the Navy as well as computer peripherals to install the OS on later this week. I have been in brief discussions with Erik Marin on the OS install as well.
 - Overhead
 - Spent a little time this week updating certain aspects of the MBARI Precruise Web Form.
 - Next week there will be several miniROV dives. This will be a big test of the Postcruise web forms and database integration of the vehicle.
 - Attended the External Review Data-Related talks this morning. They were well done and very well coordinated. :)
 - Out of Office
 - March 30 - Apr 2: Vacation
- Brian Schlining
 - 500055 - Video Annotation DM
 - Met with CSUMB Capstone students
 - 902002 - Fathomnet Detect and Classify
 - Updated [FathomNet external repo doc](#) with User stories.
 - Started roughing out a data schema to meet user stories requirements.
<https://bitbucket.org/mbari/fathomnet>
 - 902005 - VARS Annotation Assistance
 - Created and implemented [a communication protocol for exchanging localization/bounding box information](#) between video player and external apps.
<https://mbari1.atlassian.net/browse/VAA-17>
 - Documented a workflow and API calls for loading VOC localizations of downloaded VARS framegrabs into M3/VARS. <https://mbari1.atlassian.net/browse/VAA-30>
 - Overhead
 - Attended external review talks and video lab demo
 - Out of Office
 - Apr 3 - 13: Vacation
- Rich Schramm
 - 200103 - Core CTD Data -MDUC
 - Lots of rovctd quality flags to set lately

- 200105 - Core Nav - MDUC
 - Continue navproc/datamanager work
- Overhead
 - External Review session
- Out of Office
 - Mar 20: Vacation
 - Mar 23 - 27: XOJO Developers Conference
- Alana Sherman