

Engineering Weekly Report 11/5/2020 - 11/12/2020

Executive Council Notes

- 901800 - LRAUV Development (Hobson)- Team LRAUV used their MicroROV seafloor recovery system to locate and recover some derelict fishing gear, which included two lost crab pots. The team tries to practice vehicle recoveries with this gear a couple of times per year, though they hope to never need it for an actual LRAUV recovery. This time we combined the exercise with a technical demonstration for Marine Life Studies, a cetacean focused non-profit organization that performs most of the whale entanglement responses here in the bay and are trying to build a program to find and remove entanglement hazards before the whales get stuck.

Individual Activities

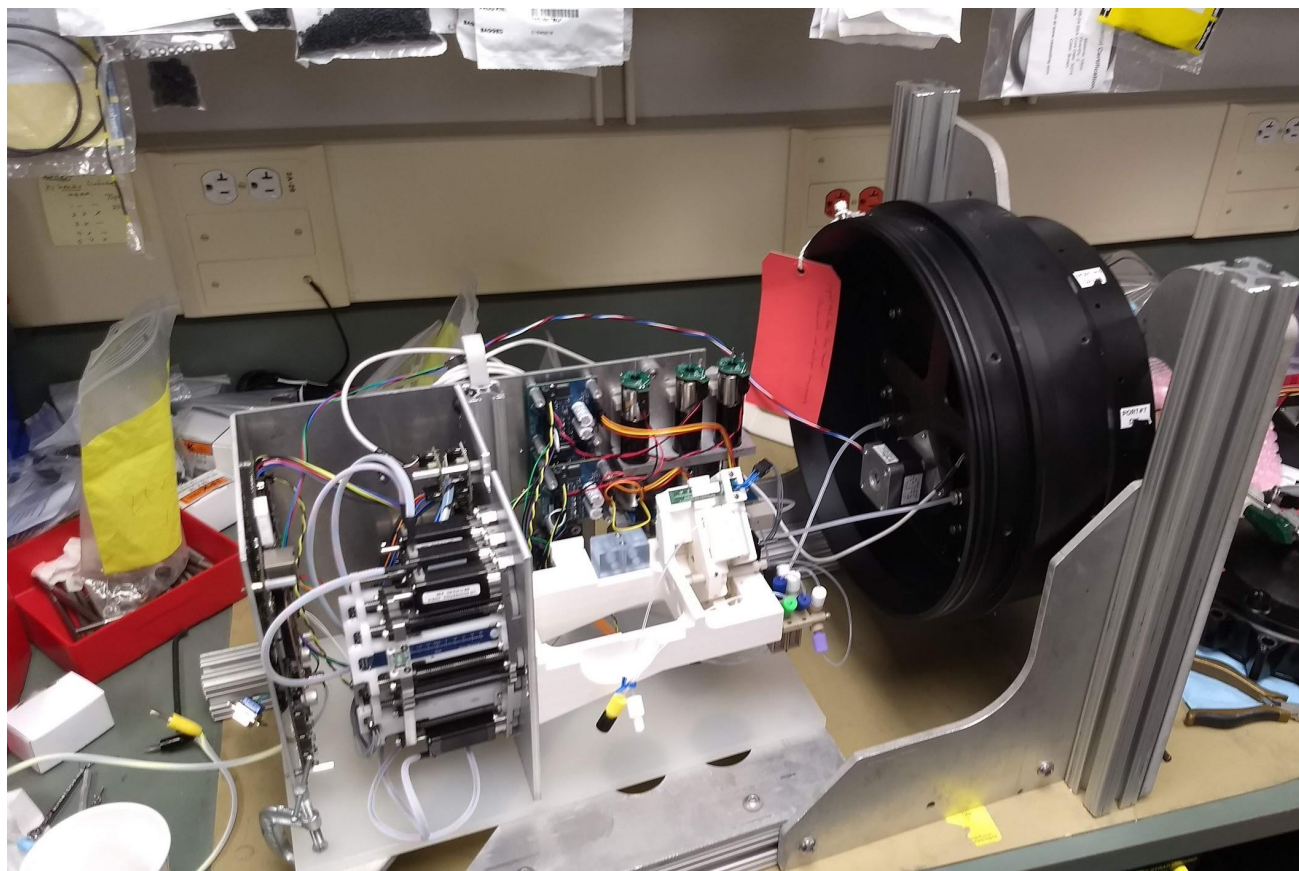
- Francois Cazenave
 - 901405 - PowerBuoy Development
 - I have been working on the capture mechanism for the LRAUV dock
 - Out of Office
 - I have been working at home for the last two weeks due to sick child
- Mark Chaffey
 - 902001.99 - 4K ROV Camera Development
 - Finished with design review materials and scheduled review for Nov. 20.
 - Completed final calibration plan for optical alignment.
 - Have been submitting parts to shop as drawings are complete and will accelerate this pace.
 - Completed the camera controller schematic and have kicked off to layout.
 - Made minor modifications to chassis to fit PCB.
 - DSP&L partner is now pressure testing a full dome & chassis assembly with shorter barrel. 500+ cycles to date. They perform high cycle tests to look for “nibbling”, creep and other subtle pressure effects on the mechanical dome mounting system. All good so far.
 - The Adapter optics are in assembly at Myriad Manufacturing with some delay after anodized parts came back with severe etching and pitting. Adapter metal parts are being re-manufactured.
- Danelle Cline
 - 901502 - Passive Acoustic Sensing
 - Finished metadata and upload scripts for AWS Open Data Sharing program initial 2.5 month data set. Upload of raw data underway. So far everything has worked well. Prototyped web design for communicating with ITD external web changes to serve data tutorials. John and I are working on prototyping notebooks in Colab and EC2 Jupyter stacks to demonstrate how to use the data.
 - Humpbacks have been busy singing in the evenings. Check-out the [live stream](#) if you need some relief from the chaos.
 - Call planned next week with folks at the Earth Species Project to discuss our plans for data sharing.
 - 902005 - VARS Annotation Assistance
 - Drafting documentation on JSON output for the team to work through VARS ingest issues.
 - Finishing up local mode SageMaker tests which has sped-up the debugging process considerably.

- Waiting for approval to use a bigger instance for model training from AWS.
 - Working on the integrated video inference and tracking code. So far so good.
- Duane Edgington
 - 901603 - Video TAG: Vis Ocean Chng
 - Reading through recent few-shot learning papers
 - LeCun and others are planning special issue on learning with fewer labels for IEEE PAMI
 - 901618 - Pelagic-Benthic Coupling
 - Paul is working on the benthic in-water checkerboard calibration frame grabs from recent station M cruise
 - Duane to run through Matlab vision toolbox calibration program when Paul has released the frame grabs.
 - Dan Davis has processed the in-air laser calibration images and reports that the calibration looks good.
 - Overhead
 - Group meeting Nov 9
 - Dept zoom meeting Nov 10
 - Out of Office
 - Out Weds Nov 11
 - Vacation Fri Nov 13.
- Jon Erickson
 - 800139 - EyeRIs
 - Finishing the light array assembly for the ROV model.
 - 901217 - Chemical Sensor Program
 - Ordered a mandrel and one composite tube for dimension checks and pressure testing.
 - New APEX float Spectrometer assembly parts are in the shop queue
 - 901809 - Deep Sea Bioinspiration
 - Still trying to select a motor gearbox assembly from Maxon for the particle injector pump.
- Kevin Gomes
 - 901009 - CANON
 - Working on migrations from CentOS 6 to CentOS 8 for all four ODSS servers
 - Shutdown canonfishvm
 - 901205 - ESP SURF Center
 - Migrated services.mbari.org and cut over to esp-portal
 - 901915 - Improving MBARI Data Impa
 - Catalog work
 - Overhead
 - AWS billing and management
 - SSDS hand holding to get AUV data processing through
 - Succession planning
 - Budget stuff
 - Revisiting docs.mbari.org/mkdocs for succession planning documentation
- Andy Hamilton
 - Out of Office
 - On vacation until October 26
- Kent Headley
 - 901803 - Carbon Wave Glider Development
 - Working on reference client design and related machine-machine interface updates.
 - Out of Office
 - Nov 30, Dec 16 : personal
- Rich Henthorn

- 901618 - Pelagic-Benthic Coupling
 - Post-cruise unloading and data analysis
 - 901800 - LRAUV Payload & Support
 - Obstacle Avoidance code merge
- Brett Hobson
- Scott Jensen
 - Out of Office
 - Current schedule is Monday-Wednesday
- Brent Jones
 - 901112 - Change in MB & CA Current
 - Flying LRAUV's in support of monthly MBTS run
 - Refactoring CPF netcdf file generation to properly interface with CF compliant software. Time problems with last CANON deployment are requiring hand editing of data!
 - 901805 - Coastal Biogeochemical Sensing
 - Ordering parts for next year. Preparing to install new O2/Opt Y cable which requires a hotdog splice in the shop.
 - Overhead
 - Mentoring CalPoly seniors
 - Meetings
- Chad Keycy
 - 901713 - Nearshore FOCE
 - Gathering parts for the Durafet housings (to give to Mike P).
 - 902000 - Multi-Spectral StealthCam
 - Beginning wiring of camera housing
 - Vicor pcb in shop for population
 - Overhead
 - Changing Ocean (Sudek) - Putting together a bench top set for LabView coding.
 - Hydrophone Pole Stabilization (Benoit-Bird) - Working on schematic for pcb.
 - Out of Office
 - Will be gone week of Turkey day.
- Brian Kieft
 - 300082 - DMO Support - Wave Glider
 - Covered some piloting for Station M return
 - 708158 - DHS Y7
 - Supporting docking tests in Buzzard's Bay
 - Wrapped up reverse thrust for undocking
 - 901009 - CANON
 - Supporting MBTS deployment
 - Out of Office
 - Work from home until PCR/Antigen tests return.
 - 11/19-11/27 (Thanksgiving w/ boys)
- Denis Klimov
 - 118000 - Safety Office - LSO activity
 - Working on a procedure on disinfecting optics and electronics.
 - 300083 - DMO Support - LRAUV
 - Upgrading 2 PAR sensors
 - 800139 - EyeRIS
 - Debugging thermal limiter on a potted LED cluster.
 - 901809 - Deep Sea Bioinspiration

- Working on a procedure on procedure on using DeepPIV on ship deck, integrating feedback from 2019 Falkor cruise.
 - 901903 - Bio Raman
 - Finalizing sample chamber retaining bracket.
- Eric Martin
 - 901101 - Ocean Imaging
 - End of year purchases underway
 - 901206 - Coastal Profiling Float
 - Bringing up the SN002
 - Writing calibration mode program
 - 901405 - PowerBuoy Development
 - Looking at radar data a little
 - 901807 - Next Gen Acoustic Dorado
 - Using echopype to generate ascii data
 - Out of Office
 - Tuesdays
 - Nov 1-7 Vacation upcoming
- Thom Maughan
 - 901009 - CANON
 - Refining and documenting install and setup procedure for XavierNX run of MinKNOW
 - Sent one of the XavierNX systems to JHU/APL for power and performance benchmarking of the final steps in the bio-informatic workflow.
 - Setup a XavierNX unit in the guest lab for Nate to use in a eDNA sequencing bake-off with the MinIT.
 - 901805 - Coastal Biogeochemical Sensing
 - Installed CCS v10.1, evaluating a move from CCS v7... "Houston, there are problems" in that projects error on import. Working with CCS team
 - Fetched MpHOx hardware to prep for possible travel quarantine
 - 902004 - Planktivore
 - Meetings on the housing design - it's moving forward nicely. First iteration will be LED flash on the inside of the faceplate.
 - Optical bench design and purchasing.
 - 901713 - Nearshore FOCE
 - Borrowed a cable for the Aandara conductivity sensor config.
 - Overhead
 - Was organizing for a trip to Cal Poly for deployment of Pier Peer camera system - this is now delayed by a week or more.
 - Out of Office
 - Working remote with regular access as needed at MBARI Tues,Wed,Thurs
- Mike McCann
 - 500055 - Video Annotation DM
 - Continuing to migrate vfcbydive to work with GraphicsMagick on expanse (CentOS 8)
 - 901009 - CANON
 - Continuing to reload last 3 years of CANON databases with newer LRAUV ESP processing
 - 901111 - AUV Infrastructure Supprt
 - Processed Dorado missions 2020.308.01 and 2020.314.01
 - 901800 - LRAUV Payload & Support
 - Implemented a outlier removal algorithm for LRAUV GPS data processing for STOQS
 - Overhead
 - Attending virtually the [Web3D Conference](#) and chairing the demo session at 5 am Thursday

- Rob McEwen
 - 901800 - LRAUV Payload & Support
 - Finished porting Dorado OA code to LR standalone app. Now the debugging starts.
 - Ran a Dorado sim with a single Imagenex mounted at 45 degrees. We have a unit test that will play this data back through the stand-alone app to test it.
 - 901101 - Ocean Imaging
 - Completed kinematic computation and plots for Andy's radar data.
 - Out of Office
 - WFH on Thursday and Friday.
- Paul McGill
- Ed Mellinger
 - Out of Office
 - Scheduled in-office days Tuesday, Friday
 - Minor family medical issues will affect my availability for the next 2-3 weeks.
- Tom O'Reilly
 - 901618 - Pelagic-Benthic Coupling
 - Refined and tested "loop-and-cross" Wave Glider Hotspott algorithm to geolocate Benthic Rover at Station M. Will compare accuracy and efficiency of loop-and-cross with "autoranging" script results, which was also run.
 - 901809 - Deep Sea Bioinspiration
 - Discussing BioBot acoustic comm software options with LRAUV team and Dana Yoerger. Dana is interested to use relevant LRAUV acomm software/formats for BioBot.
 - Out of Office
 - Was on vacation last week
- Craig Okuda
 - 901007 - Benthic Biology & Ecology
 - Build prototype valve actuator
 - Update valve internal parts
 - 901803 - Carbon Wave Glider Development
 - Update dririte box design
 - Finalize sheet metal parts and send for quote
 - Spec hardware and misc parts
 - Out of Office
 - Vacation days
 - Out sick
- Doug Pargett
 - 901205 - ESP SURF Center
 - FrankenTower, a high pressure capable bench ESP, is mostly complete. Some electrical upgrades and calibration are needed prior to pump installation and testing.



- Zoom meeting to start phase 3 of cartridge redesign.
- Overhead
 - Engineering meeting
 - Setting up new computer, files, and remote desktop software.
- 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
 - 901205 - ESP SURF Center
 - Fixed bug Chris Preston identified in ESP 3G puck heating code.
 - Patched bug WHOI found with DA protocol
 - Investigating bug GLERL identified in microcontroller initialization sequence.
 - Used Kevan's old HP48GX calculator to reprogram memory cards for the ESP group's Saigene processors.
- Carlos Rueda
 - Out of Office
 - Nov 4: VueConf Toronto (virtual)
 - Nov 11: vacation
 - Nov 12-13: Scale by the Bay (virtual)
 - Dec 9: ASA Conference (virtual)
- Karen Salamy

- Out of Office
 - Out of Office this whole week due to a Family Medical Emergency. I may have to extend this through next week as well.
 - Will be working on MBARI campus ONLY on Tuesdays until further notice.
- Brian Schlining
 - 500055 - Video Annotation DM
 - Hardware encoder support for AV1 is being released. Starting discussion on codecs for working with 4K video.
 - 902002 - Fathomnet Detect and Classify
 - Continuing development of fathomnet web interface.
 - The evolving web interface is at <http://fathomnet.org>
 - Overhead
 - Working with Kakani's group on integrating DeepPIV and stereo camera data into VARS.
 - Out of Office
 - Attending [Scale by the Bay](#) on Thu and Fri
- Rich Schramm
 - 300070 - DMO Support- Ventana
 - Mods and documentation to Ground Fault Tester app. Its now in bit bucket
 - Overhead
 - Continue Centos8 conversion. Oasis3 downloads still not right...
 - Out of Office
 - 11/10-27 Vacation
- Alana Sherman
 - 300080 - DMO Support-Mini ROV
 - Helped demob Fulmar after multi-week deployments
 - 901618 - Pelagic-Benthic Coupling
 - Helped demob Flyer after Sta. M cruise
 - Provided shore support as needed (not much this time)
 - 901904.99 - Coral Camera System
 - Spent week testing new DSP&L SeaStrobe with our Snappy controller and Sony a7RIII. Good news is that our planned cap charging circuit worked well, but there were issues with the strobe. The manufactures were able to recreate our issue and are sending a firmware fix. Moving forward ...slowly