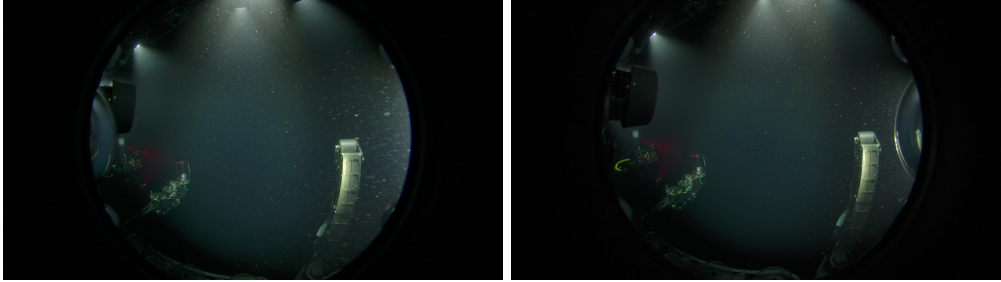


Engineering Weekly Report 8/20/2020 - 8/27/2020

Executive Council Notes

- 901911 ROVVR
 - The camera system is collecting data from its first deployment on the Robison cruise. This camera was delivered exactly the day before the COVID-19 shutdown in March. Here are a pair of grabs from the 4K imagers:



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- 902100 Telepresence
 - As part of the first cruise since the shutdown and shipyard, the Western Flyer is also embarked on its first telepresence-enabled cruise, providing a connection back to shore for Kakani Katija and her lab to support the first use of the EyeRIS camera.
- 901800 LRAUV
 - LRAUV Triton - Kelly and Chad will finally get to start testing the new bio-acoustic payload for Triton in the test tank. This new payload designed by Doug Pargett and Brent Jones features a unique passive orientation mechanism for the upward and downward-looking echo sounders.

Individual Activities

- Francois Cazenave
 - 901405 - PowerBuoy Development
 - Preparing PTO for deployment
 - Installed new switches on battery box
 - Ordering components for AUV dock test
 - Supervising fabrication of cable dock
 - 902000 - Multi-Spectral StealthCam
 - Continued work on the camera housing
- Mark Chaffey
 - 902001.99 - 4K ROV Camera Development
 - Added 2x extender actuation to mechanical design.
 - Prototyped telemetry system and confirmed that Sony camera control protocol works successfully over 5.4km of fiber. Discovered that vendor had delivered incorrect optical multiplexor part. Replacement due Sept. 10.
 - Review preparation.
- Danelle Cline
 - 901502 - Passive Acoustic Sensing
 - AWS data sharing program correspondence. Many thanks to Kevin Gomes and the IS department for their help as we forge into the great Cloud.

- Added coherence and VGGish embeddings plots of humpback topic model output. The dispersion of the VGGish embedding looks like a better discriminator than coherence for model optimization.
 - Blue whale A call predictions across the entire 5-year time-series produced >200K calls. Next week blue processing jobs for whale D call predictions will be put in the queue.
 - 902005 - VARS Annotation Assistance
 - After evaluating ML stacks project plans are to process collection of benthic dives for proof-of-concept. Training libraries will include Cal Poly and FathomNet labeled images for top species that we have enough localizations for.
 - Instrumenting TensorFlow 2 Retinanet module for Metaflow and midwater multiple object track tests.
 - Experimentation with [Cortex Machine Learning Stack](#)
 - Out of Office
 - Out of office Aug 24-28.
- Duane Edgington
 - 901603 - Video TAG: Vis Ocean Chng
 - Emails regarding phase 1 response
 - Attending targeted ECCV presentations, tutorials, workshops
 - 901618 - Pelagic-Benthic Coupling
 - Emails to Dan Davis and with Paul McGill
 - 902005 - VARS Annotation Assistance
 - Gearing up for Metaflow experiment
 - Reviewing AWS materials
 - Team meeting Aug 20 included phase 1 response discussion and preparation.
 - Overhead
 - Ken Johnson seminar, engineering telecom, group meeting
 - Out of Office
 - Aug 22 - 28. ECCV. Virtual conference. Workshops, tutorials and presentations.
- Jon Erickson
- Kevin Gomes
 - 300057 - Mooring Maint
 - Switched location beacon processing for M1 turn
 - Working on SSDS processing set up for M1 turn (mooring was deployed blind since no Mt. Toro)
 - 901205 - ESP SURF Center
 - Troubleshooting some portal issues
 - 901502 - Passive Acoustic Sensing
 - Created an AWS account and AWS connected the account to their data sharing organization where they will pay to host the Soundscape data for public consumption.
 - 901915 - Improving MBARI Data Impa
 - Finally getting back to catalog work in earnest. Was able to update extraction code to capture XMP tags from images from UAV for search in Elasticsearch.
 - Spinning up on GraphQL and looking to migrate catalog API
 - Working on authentication requirements and decision doc to get security decision done to start applying to catalog.
 - Overhead
 - Working on many things for AWS to ensure we are doing things in the most secure way.
- Andy Hamilton
- Kent Headley
 - 600034 - Control Tech - Rock

- Phase 2 proposal discussion
- 901101 - Ocean Imaging
 - Due to the fires interfering with quarantine, Dave will be unable to participate in the UNOLS Axial cruise. There is still a chance that we will be able to participate remotely, at least enough to run TRN on Sentry and collect some performance data. Even if it isn't possible to interface with the Sentry control system. Hans and Dave have prepared Sentry data-pod hardware/drives that ship this week to meet the WHOI team in Oregon. I have been finishing TRN client code for Sentry, updating and documenting configuration/operation procedures, and doing code review on MB-System code updates that Dave has been working on (renaming variables, file process error handling, new TRN reinit triggers).
- 901803 - Carbon Wave Glider Development
 - Working on a reliable scheme for serializing hardware
 - Board bringup
- Rich Henthorn
 - 901405 - PowerBuoy Development
 - Broadcasting logged controller data on LCM channels
 - Implementing some new commands
 - 901618 - Pelagic-Benthic Coupling
 - Variable speed SES carousel feature to minimize sample movement on the slide
 - SES doesn't seem to be collecting sediment at MARS - might be clogged
 - 901800 - LRAUV Payload & Support
 - Trying out the DeltaT logging application
 - Developing beamformer external control for enhanced configuration options
 - Out of Office
 - Sept 23 - 29 Vacation, MDT timezone, limited comms
 - Oct 27 to Nov 5: WF cruise to Sta. M
- Brett Hobson
 - 600034 - Control Tech - Rock
 - Completed the migration of Pontus' nose payload to the new titanium frame and prep'd her for a Wed deployment.
 - 708158 - DHS Y6
 - Supporting the new vehicle build by answering many questions, updating some part drawings and participated in group meeting
 - 800139 - EyeRIS
 - 901009 - CANON
- Scott Jensen
 - 901405 - PowerBuoy Development
 - 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.
 - 901805 - Coastal Biogeochemical Sensing
 - NanopHOx is ready to be sent out for fabrication.
 - 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.
 - Overhead
 - PCB training is coming along and I think my first board is ready for fabrication.
 - Out of Office

- Current schedule is Sunday-Tuesday
- Brent Jones
 - 901502 - Passive Acoustic Sensing
 - Running ML sperm detector on all clicks for a given month. Continuing to tune algorithm
 - Spun up virtual Linux machine for parallel processing hydrophone data
 - 901800.98 - Bioacoustic Payload
 - Final assembly of the elux and initial fit to Triton's nose
 - 901805 - Coastal Biogeochemical Sensing
 - Running Spray 29 on line 67
 - Recovered Spray 34 and beginning turnaround for next week's deployment
 - Overhead
 - Meetings
- Chad Kech
- Brian Kieft
- Denis Klimov
 - 901114 - E&D-Picophytoeukaryotes
 - Working on debugging a computer for a spare Chemostat in B232. Turned out it was working, all along but the monitor had issues. New monitor is mounted on the wall to allow more space for working with light-tight enclosure
 - 901800 - LRAUV Payload & Support
 - Working on cable entry into light-tight enclosure for low light testing
 - Overhead
 - Inventorying parts for BEDS instruments
- Eric Martin
 - 901101 - Ocean Imaging
 - Lidar Returned
 - Second strobe back from new bulkhead installed
 - Next steps are to build the sled up for a full tank calibration in the next two weeks.
 - 901206 - Coastal Profiling Float
 - Calibrated bellows on the buoyancy engine
 - 901405 - PowerBuoy Development
 - Fixed hardware/software issues on tophat controller, all functions are working now.
 - Closed tophat
 - Radar fix is next.
 - 901911 - ROVVR
 - Camera is at sea finally, hopefully collecting video as part of the Robison cruise
 - 901200 - Telepresence
 - Smith days were a bit of a bust due to Microwave issues due to the River Fire
 - VSAT on the Western Flyer is working well so far for Robison cruise. Webex proves to have a few glitches, but the most stable video solution at the best quality.
 - Onboarded Paul Group for a month of telepresence scheduled in September
 - Telepresence can be totally managed remotely from the shore side, demonstrated on the WF.
 - Modifying Prediver form with Karen Salamy
 - Phase 2 Responses
 - Out of Office
 - I am at MBARI Mon, Tues, and Friday
 - Vacation days on thursday when available.
- Thom Maughan
 - 901805 - Coastal Biogeochemical Sensing
 - MFET sleep issue on some boards resolved

- 902000 - Multi-Spectral StealthCam
 - Attended meeting
- 902004 - Planktivore
 - Have received solidworks files for ZooCam from Scripps via Paul R. and Francisco.
- Overhead
 - Moved most of the MBARI equipment to MBARI on Friday, evacuated with the remainder.
 - Affected by Carmel and River Fires, evacuated and now returned. Much better now.
- Out of Office
 - Working remote with regular access to MBARI planned Tues,Wed,Thurs for a lab in bldg g
- Mike McCann
 - Out of Office
 - Vacation days Monday & Tuesday 17-18 August 2020
- Rob McEwen
- Paul McGill
 - 701145 - Penguin Hotspots
 - Did power supply noise testing in lab with Chad. Getting some interference from DC-DC converter, working on solutions.
 - 901618 - Pelagic-Benthic Coupling
 - Post-cruise cleanup and data analysis. Tracked down cause of RF beacon failure on elevator.
 - Moved a metric craption of lithium batteries from garage to Rover lab.
 - 901700 - 2017 Acoustical Ocean Eco
 - Working on hyperparameter tuning code for sonar neural network.
 - 901803 - Carbon Wave Glider Development
 - Responded to Phase 1 feedback
 - 901904.99 - Coral Camera System
 - Working on code to adapt Okuda's pump controller to flash lasers on coral camera. Having trouble getting programmer to recognize PIC on board.
- Ed Mellinger
- Tom O'Reilly
- Craig Okuda
 - 901007 - Benthic Biology & Ecology
 - Rev valve actuator design
 - 901803 - Carbon Wave Glider Development
 - Edit and submit drawings to shop
 - Out of Office
 - Vacation day
- Doug Pargett
 - 901205 - ESP SURF Center
 - We're trying to rebuild the MV-1 instrument for the coming canon cruise. MV-1 had many issues with pressure sensors in the last deployment, and we are digging deeper and deeper into the instrument. We will be testing a drill modified pressure sensor tomorrow.
 - DQ1904 - NOPP Saildrone
 - This last week I have been building, rebuilding, and rebuilding again the G3 ESP in the acrylic housing for saildrone. Issues with the pressure sensors may be fixed now. (testing tomorrow)
- Ben Raanan
- Mike Risi
 - 600034 - Control Tech - Rock
 - Continued adding user interface commands to the generic ROV control system
 - 701127 - MARS O&M III
 - Working on test software to verify the node power controller ADC boards

- 901101 - Ocean Imaging
 - Starting way-point and scripting changes to Ocean Imaging control systems for the October 12th cruise
- 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
 - Heater board calibration in LRAUV chassis ESPhonu
 - Helping with bring up of first flower pot ESP
 - Working with APL on integration of new Telit ME910 modem for comms test deployment
 - Updated ESPrush and ESPniagara at GLERL
 - Discovered and Documented ESP2 manipulator wiring working connector out of its socket
 - 901913 - Wet Wifi
 - Project approved for 2021 with very minor labor tweaks
 - Out of Office
 - At MBARI Tuesdays after 2PM
- Carlos Rueda
 - 901009 - CANON
 - Some MXM work
 - 901800 - LRAUV Payload & Support
 - Advancing 'Command' tab re-implementation in Dash3, one of the pending items toward usability improvements in [version 4](#).
 - Overhead
 - IE and Eng meetings
 - ESIP: minor COR maintenance; discussion with collaborator.
- Karen Salamy
 - 704109 - NavDORISS
 - Spent a little time looking over the NavDORISS target image. Found a few issues that still need fixing.
 - 901200 - Telepresence
 - Spent several days last week diving into modifications on the Precruise Web Form to add Telepresence to the form. Chatted briefly with Eric Martin to determine the best approach on linking in Telepresence requests to the Web Form. I currently have a test link for others on the project to provide feedback on the first set of changes (which were extensive to implement).
 - Overhead
 - Attended online group meetings, Engineering Meeting, etc.
 - Out of Office
 - Will be working on MBARI campus ONLY on Tuesdays until further notice.
- Brian Schlining
 - 500055 - Video Annotation DM
 - [Migrated all remaining supporting applications from](#) VARS to M3/VARS and moved them off seaspray.shore.mbari.org which is being retired in September. Docker apps were moved to expanse.shore.mbari.org. Non-docker apps were moved to quasar.shore.mbari.org.
 - As part of the tape-to-videofile migration, discussing with the video lab how to manage timecode resets and jumps that occur [mid-tape](#) or [during a dive](#).

- 902002 - Fathomnet Detect and Classify
 - [Deep dive into OAuth 2.0](#). Working out how to implement authentication and security for FathomNet. Wrote some prototypes against [Okta](#) and [Firebase Authentication](#).
 - Started work on a minimal UI to enable authentication.
 - FathomNet supports different taxa providers, currently [MBAR's VARS knowledgebase](#) and [WoRMs](#). Had discussions with WoRMs developers about adding additional REST API features to better support FathomNet's needs.
- Overhead
 - Involved in telepresence discussions. Met with Paull's group to discuss using VARS as part of telepresence.
 - [Attended eDSBS meeting](#)
- Rich Schramm
 - 200103 - Core CTD Data -MDUC
 - Research and respond to minirov data issue for Haddock lab
 - Catch up on ROVCTD O2 flags going back to 1/20 for both vehicles
 - Overhead
 - Deal with lots of little stuff from being on vacation.
 - Tested changes made by IS to coredata8 as part of CENTOS8 upgrade
 - Out of Office
 - Aug-10 -21 Vacation
- Alana Sherman
 - 901809 - Deep Sea Bioinspiration
 - Fixed a couple bugs in the code
 - 901904.99 - Coral Camera System
 - Working on system block diagram
 - Out of Office
 - Friday Aug 21- Tuesday Aug 25