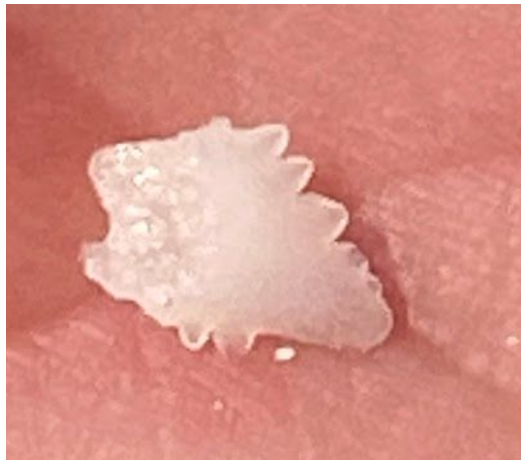


Engineering Weekly Report 8/27/2020 - 9/3/2020

Executive Council Notes

- 901800 LRAUV (Hobson)
 - LRAUV's Pontus and Tethys joined Daphne offshore on [Monday](#) for the following work:
 - Multi-vehicle navigation sharing - two vehicles flying near to each other while measuring and sharing (acoustic messaging) their relative range and bearing to each other.
 - Low-altitude flight - Pontus is logging data from a forward-looking multibeam obstacle avoidance sonar
 - Acoustic Communication Re-direct - Tethys will be holding station below WaveGlider Tiny above the DEIMOS echosounder at MARS. We will be testing the ability to command a new survey depth for Tethys from shore, based on analysis of DEIMOS data.
 - Water current measurement - We'll be testing the new ocean current measurement data product that will be available anytime a vehicle equipped with a DVL/ADCP is within acoustic range of the seafloor.
 - A new acoustic altimeter will be tested on Pontus.
 - Late summer offshore in Monterey bay tends to be kelpy, and sharky, which are both challenges for AUVs. Dorado and Pontus both became firmly wrapped in kelp this week, and LRAUV Tethys was again attacked by a great white shark which occurred on Wednesday, about 4.8 km north of Point Pinos. The shark tore the communication antenna off Tethys, and left the usual tooth calling card behind, embedded in the carbon fiber shell. We installed an expensive new antenna and Tethys was back to work in a few hours.



Individual Activities

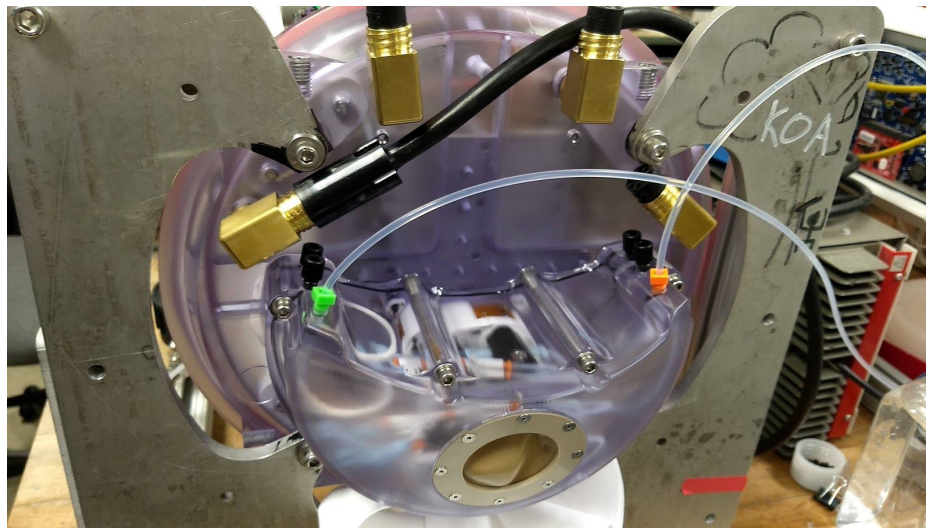
- Francois Cazenave
- Mark Chaffey
- Danelle Cline
 - 901502 - Passive Acoustic Sensing
 - Troubleshooting issues with streaming audio failure.
 - Trying to keep up with the AWS Data Sharing chatter
 - Blue whale D call predictions ready to process. Just need to free up GPU resources to start.
 - Discussion with Daniel DeLeon about inference tests results on Aria 10 FPGA and ideas for his masters studies.

- 902002 - Fathomnet Detect and Classify
 - Tested a few of the APIs. Had some difficulty fetching images. Tar of the archive would probably be easier.
- 902005 - VARS Annotation Assistance
 - Setup detection test for [NetFlex Metaflow with TensorFlow2 Retinanet](#). Metaflow works on laptop and local GPU. Next steps are to test in the Cloud.
 - Creating data registries for all available data for upcoming process tests. This versions the data for reproducibility and simplifies cloud testing.
 - <https://bitbucket.org/mbari/registry-benthic2017>
 - <https://bitbucket.org/mbari/registry-fathomnet>
 - <https://bitbucket.org/mbari/registry-i2map>
 - CalPoly is next.
- Duane Edgington
 - 901603 - Video TAG: Vis Ocean Chng
 - Participating in ECCV 2020 workshops and attending tutorials. Several were recorded but not available live, so watching those posted workshops this week.
 - Out of Office
 - Aug 22 - 28. ECCV. Virtual conference. Workshops, tutorials and presentations.
 - Sept 4. Vacation
- Jon Erickson
 - 800139 - EyeRIS
 - Still getting parts out of the shop for the EyeRis zoom camera.
 - 901800 - LRAUV Payload & Support
 - New larger fins for MAKAI.
 - 901809 - Deep Sea Bioinspiration
 - Still getting parts out of the shop. Assembling the Remote head assembly jig.
- Kevin Gomes
 - 300057 - Mooring Maint
 - Set up SSDS data processing pipeline for M1 turn
 - Troubleshooting M1 data flows and Mt. Toro went down again, Craig thinks it's the UPS and will replace next week.
 - 901009 - CANON
 - Starting up data catalog work again
 - Some support for ODSS
 - 901205 - ESP SURF Center
 - Helping with some requests for the ESP portal
 - 901502 - Passive Acoustic Sensing
 - Created an AWS account for the public data sharing, registered it with Amazon's Organization, created user and set up security policies to limit to S3 activities only.
 - Created S3 buckets using CloudFormation templates provided by the AWS data sharing team
 - 901915 - Improving MBARI Data Impa
 - Converting the API for data catalog to GraphQL and starting on VueJS app to facilitate API development.
 - Overhead
 - Phase 2 Resource Leveling and Review
 - Helping Jenny with a request for some data extractions from Samples DB for the rock samples that went to the Smithsonian.
 - Weekly sync meeting with Todd R.
 - Restarting services due to IS restart of Dione and server patching.
- Andy Hamilton

- Kent Headley
 - 901101 - Ocean Imaging
 - Providing remote software support for Axial Sentry cruise with Dave and Hans.
 - The ship is transiting and will arrive on site this afternoon
 - We've been busy with software updates and configuration/network checks
 - First Sentry dive Wed 0600-1800, an engineering dive, will collect some TRN data if all goes to plan, though TRN would not be connected to the Sentry control system
 - 901803 - Carbon Wave Glider Development
 - Working on hardware serialization scheme
 - Team decided to put a small EEPROM part, which will make it easier
 - Learned of a linker issue that may have been causing unpredictable behavior when accessing variables stored in flash. Updated tool chain may help
 - MPLAB (microchip IDE) became increasingly flaky, reinstalled. When their tools works they're good, but when they don't, they're a real time sink.
- Rich Henthorn
 - 901405 - PowerBuoy Development
 - Install updates on target and test
 - 901618 - Pelagic-Benthic Coupling
 - SES may have a clogged sediment trap as no apparent sediment is being collected
 - Continue to hold carousel in flow-thru position hoping clog will clear
 - 901800 - LRAUV Payload & Support
 - Supporting pontus obstacle avoidance mission
 - Out of Office
 - Sept 23 - 29 Vacation, MDT timezone, spotty email-only
 - Oct 27 to Nov 5: WF cruise to Sta. M
- Brett Hobson
- Scott Jensen
 - Out of Office
 - Current schedule is Sunday-Tuesday
- Brent Jones
 - 901112 - Change in MB & CA Current
 - Flew Daphne in support of mbts run. Collected 15 seawater samples with the SIPPER
 - 901800.98 - Bioacoustic Payload
 - First test tank test revealed noise issues. Working on it
 - Polishing up documentation (electrical drawings)
 - 901805 - Coastal Biogeochemical Sensing
 - Prepped spray 34 for deployment. Diagnosing an issue with pH sensor when it is submerged. Flying Spray 29 24/7
 - Overhead
 - meeting
- Chad Keczy
- Brian Kieft
 - 300082 - DMO Support - Wave Glider
 - A bit of piloting over the last 46 days. Congrats to Chris on a new record for MBARI! Damage is currently preventing Tiny from continuing to support the LRAUV engineering deployment.
 - 708158 - DHS Y7
 - Minor fixes in JIRA and weekly meeting
 - 901009 - CANON
 - Supported recent MBTS run with Daphne
 - 901800 - LRAUV Payload & Support

- Currently involved in an engineering deployment with Pontus and Tethys to test a large merge and some acommms fixes.
 - Out of Office
 - Vacation 8/27-31
 - WFH this week. Got reapproved for entry following a backpacking trip. Will return onsite on my normally approved days.
- Denis Klimov
 - 118000 - Safety Office - LSO activity
 - Reviewing new laser wavelengths for the laser lab
 - 901800 - LRAUV Payload & Support
 - Working on wire entry into light-tight box for biolum setup
 - 901903 - Bio Raman
 - Working on the drawings for the mounting brackets for a sample chamber, to accomodate new jack from Thorlabs
- Eric Martin
 - Out of Office
 - I am at MBARI Mon, Tues, and Friday
 - Vacation days on thursday when available.
- Thom Maughan
 - 300083 - DMO Support - LRAUV
 - Buffered serial driver, extending to 7 UARTS
 - 901009 - CANON
 - Investigating board options for multi-core ARM (4 core min) with RAM > 8GB
 - 901805 - Coastal Biogeochemical Sensing
 - Went thru the reworked and broken MFET boards - delivered 6 partially tested boards to Joseph
 - 902004 - Planktivore
 - Working with Larry on Fluum motor upgrade for higher rpm and lower voltage (24v for safety). Researching flow indicators (glass beads, mica).
 - 901713 - Nearshore FOCE
 - Sent status.
 - MpHOx board checkout. Software mods for nsFOCE.
 - Overhead
 - Moving to new lab in building g, recovery from fire evac and rapid packing. Thanks to Josh for the help with airflow and Brett for making room.
 - Out of Office
 - Working remote with regular access to MBARI Tues,Wed,Thurs
- Mike McCann
 - 200109 - Core Mooring Data
 - Submitted Phase 2 response
 - 901111 - AUV Infrastructure Supprt
 - Attempted to track down missing sensor data for the last 4 Gulpers on 2016.307.00
 - Wrote script to correct system clock for 2017.284.00 to create 2020.297.00
 - Processed missions 2020.245.00 and 2020.246.01 separately in order to properly match up data to the Gulper firings
 - Looking at writing processing for new PAR sensor on CTD2 and new ecopuck instrument
 - 901800 - LRAUV Payload & Support
 - Monitoring https://tethysviz.shore.mbari.org/stoqs_lrauv_sep2020 for successful updates
 - 901221 - Midwater Time Series
 - Continuing to implement calibrate_align.py in the auv-python project
 - Overhead

- Working with Pat to get git working w/ ssdsadmin's ssh keys on an atlas home directory share
- Rob McEwen
- Paul McGill
 - 701145 - Penguin Hotspots
 - Worked with Chad in the lab to track down sources of noise in sonar. May be a power supply issue.
 - 901618 - Pelagic-Benthic Coupling
 - Troubleshoot power issues with SES on MARS.
 - 901700 - 2017 Acoustical Ocean Eco
 - Arranged for a Mathematica pre-release license so I can run latest version on Deepdark without buying another license. Researching methods of hyperparameter tuning for our neural network to improve accuracy above the current 75%.
 - 901803 - Carbon Wave Glider Development
 - Making doc to better understand LI-COR calibration in preparation for meeting with NOAA/PMEL on Friday.
 - 901904.99 - Coral Camera System
 - Helped Alana with concept review materials and attended review.
- Ed Mellinger
- Tom O'Reilly
 - 300082 - DMO Support - Wave Glider
 - Installed software on new "Hotspot-3" payload, testing modems; will proceed to full end-to-end test with payload integrated with Wave Glider *Hansen* in next several days.
 - 901618 - Pelagic-Benthic Coupling
 - Refining software and test plans for "loop and cross" technique for acoustic geolocation of Benthic Rover and other targets.
 - 901902 - Aerial Drones for Sci&MO
 - Held data processing preliminary design review, attended by MBARI engineers and several external collaborators. We received good suggestions on best practices for pre-flight image calibration, maximizing altimeter accuracy, use of standardized image "metadata" to improve interoperability of our data, and more
- Craig Okuda
 - Out of Office
 - Vacation day
- Doug Pargett
 - 901205 - ESP SURF Center
 - The MV1 instrument has been wrestled around a few times, but now has a drilled pressure sensor and a rebuilt pump. Initial high pressure tests show the drilled sensor is compensating to ambient.
 - MV1 is showing some cartridge seal leaks and those will need to be dealt with prior to deployment.
 - DQ1904 - NOPP Saildrone
 - After a couple more rebuilds and part changes, the Koa instrument is fully setup with the new acrylic dome housing. A few tweaks to wiring and circuits are being looked at.



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- Ben Raanan
- Mike Risi
 - 701127 - MARS O&M III
 - Working on test software to verify the node power controller ADC boards
 - 901101 - Ocean Imaging
 - Working on way-point and scripting changes for Ocean Imaging control systems
 - 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
 - September 30 - October 2: Vacation
 - October 12-17: Ocean Imaging Cruise
- Brent Roman
 - 901205 - ESP SURF Center
 - Testing Linux 3.18 Kernel with all our modem variants.
 - 901913 - Wet Wifi
 - M-team's recommended phase I labor adjustments made
 - DQ1865 - Bryde Whale
 - Mooring recovered. Surface expression was submerged. ESP seems intact, but somewhat corroded to prolonged high humidity in the can.
 - DQ1870 - NOAA Merhab
 - Worked a couple feverish days with UW/APL to recover from a fried CPU board they intend to deploy this week.
 - Out of Office
 - At MBARI Tuesdays after 2PM
- Carlos Rueda
 - 901800 - LRAUV Payload & Support
 - Dash: new [Command tab](#) interface implementation completed and enabled. Should be fully functional already but, as a next step of course, testing by operators is needed. Starting to look into the Mission tab, where some pieces from the Command tab implementation as well as from the MXM frontend will be leveraged.
 - Overhead
 - Daphne watchstanding shift.
 - Monthly ESIP COR meeting.

- Starting to review a significant contribution ([PR](#)) to my *tscfg* tool.
 - Out of Office
 - Sep 4: vacation
- Karen Salamy
 - 901200 - Telepresence
 - Working with Eric M. and Mike K. to integrate telepresence functionality into the MBARI Precruise web form. Currently chasing a bug.
 - Overhead
 - I have been asked to add the ability to search on the R/V Kilo Moana for miniROV dives from the MBARI Postcruise web form and will do this as soon as I complete the incorporation of telepresence in the Precruise web form.
 - I will also need to test the Precruise web form functionality following a IIS server upgrade by Mike M. and IS this week. Teresa C. has been having some issues with Precruises propagating to the EXPD. This may be related to these upgrades but I need to dig deeper.
 - Out of Office
 - Will be working on MBARI campus ONLY on Tuesdays until further notice.
- Brian Schlining
 - 500055 - Video Annotation DM
 - Completed migration of all support applications off of Seaspray to Expanse and Quasar
 - Started prototyping a web based query app. Added additional APIs to the knowledgebase to support this.
 - 902002 - Fathomnet Detect and Classify
 - Added authentication via Google's firebase
 - Created a web interface for FathomNet.
 - Working on supporting services for FathomNet (validating images submitted, archiving original uploads of bounding boxes, user management, additional download formats)
 - Overhead
 - One of my laptops had a hard disk issue. I had to wipe the disk and reinstall the OS
 - Working with IS to resolve issues introduced by the latest round of server patches.
- Rich Schramm
 - 200103 - Core CTD Data -MDUC
 - Assist Haddock Lab getting Hawaii minirov data into Expd
 - Document procedures for creating non-mbari ship expeditions in Expd database
 - 300057 - Mooring Maint
 - Assist Jared getting data out of recovered M1 can
 - Overhead
 - Continue testing Centos8 conversion
 - Out of Office
 - Aug-10 -21 Vacation
- Alana Sherman
 - 901904.99 - Coral Camera System
 - Held a concept design review
 - Worked on system block diagram and sorted out some details on remote communications
 - Looking into alternate lighting options
 - Overhead
 - Still refining allocations for 2021, this was a hard year to balance labor requests but we are almost there.
 - Out of Office
 - Friday Aug 21- Tuesday Aug 25