

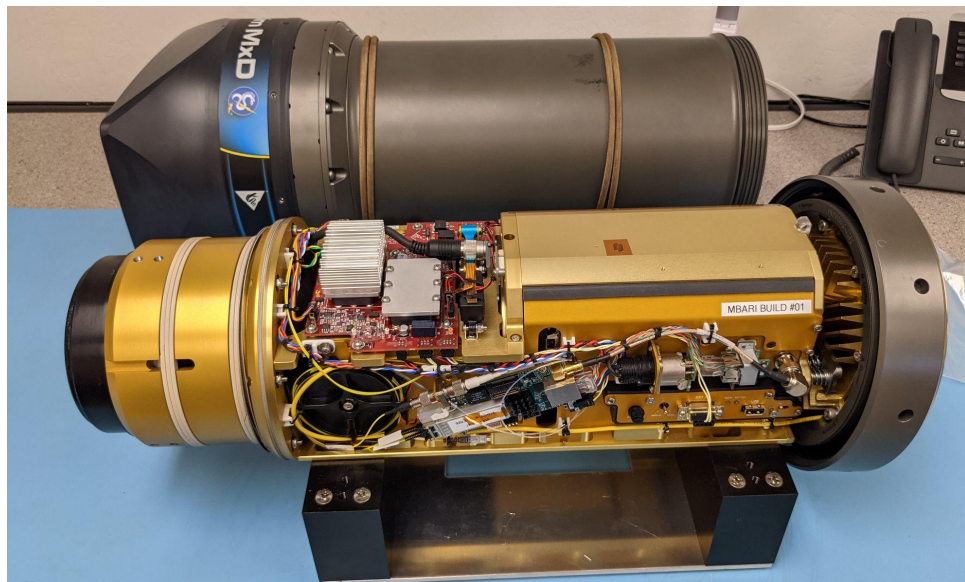
Engineering Weekly Report 8/5/2021 - 8/12/2021

Executive Council Notes

- LRAUV operations in the Great Lakes - LRAUV Brizo is running adaptive patch tracking missions in Western Lake Erie to monitor the a large Blue-green algae bloom that is generating HAB toxin Microsystis that are being measure in near real-time with the 3G ESP+SPR module. Brian and Yanwu extended Yanwu's patch tracking mission to automatically take ESP samples within a targeted Chlorophyll level and raw SPR results that Bill Ussler processes on shore to yield the toxin content. These HAB blooms are a major human health issue around Lake Erie. LRAUV Makai spent four days in Lake Erie, but is now in the middle of Lake Michigan to support USGS fisheries studies. Makai is collecting ESP archive samples for shore-side eDNA analysis in conjunction with trawl new tows and Saildrone-based bio-acoustic data.

Individual Activities

- Francois Cazenave
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Preparations for upcoming deployment
 - 901700 - Acoustical Ocean Ecology
 - Assembled electronics housing
 - 902106 - Niobicon-Based AUV Docking Development
 - Designing docking buoy for fall deployment
- Mark Chaffey
 - 902001.99 - 4K ROV Camera Development
 - Camera, lapbox and rack box hardware are all DONE!!!!
 - The full optical calibration work has been done and is complete.
 - In air optical testing is complete.
 - Software work is well along but not complete.
 - Tank testing of optical performance will take place as soon as the software control of the camera is ready





- Danelle Cline
- Duane Edgington
 - 901603 - Video TAG: Visualizing Ocean Change
 - Calls with AWS grant team Aug 11, Aug 5.
 - 901618 - Pelagic-Benthic Coupling
 - Our June 21 dive data is ready for Dan Davis for his analysis. I have emailed to set up a time to meet with him and pass over the data.
 - 902005 - VARS Annotation Assistance
 - Built AWS testuser group and user to test workflows we wish to release to users to ensure we have captured required permissions
 - Working meeting planned Aug 12
 - Overhead
 - Participating in Software Engineer candidate zoom calls
 - Listened in to some of the intern presentations Aug 11.
 - Out of Office
 - Aug 6. Vacation
 - IJCAI 2021 workshop on Long-tailed distribution learning, and on Continual semi-supervised learning, Aug 19-20. Conference Aug 21-26. Virtual (Montreal time)
- Jon Erickson
- Kevin Gomes
- Andy Hamilton
- Kent Headley
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Developing maintenance list for TRN codebase
 - Attended team meeting re TRN input architecture and data fusion methods
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs

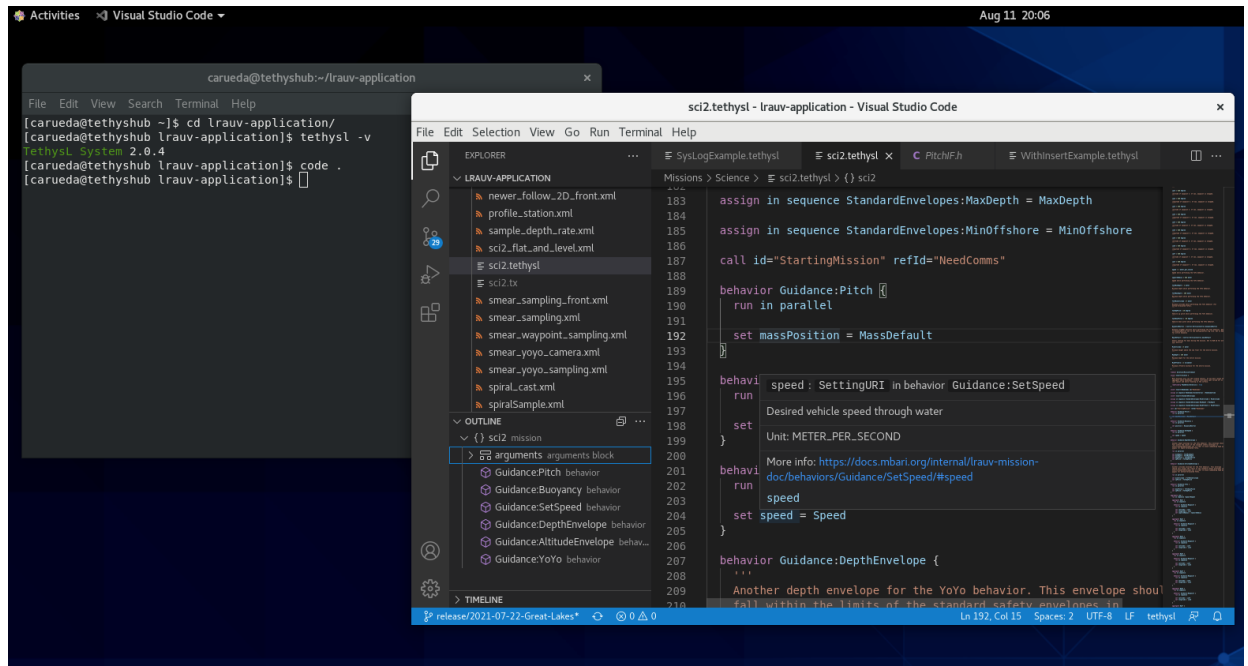
- TRN
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Preparing for deployment this month
 - IFCB review
 - Out of Office
 - Sept 24 - Oct 1, vacation
- Brett Hobson
- Scott Jensen
 - 901205 - ESP SURF Center
 - Evaluated replaced motor for possible failure, none found:(
 - Helped diagnose latest Wyoming deployment trouble
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Looking at ways to implement active battery balancing
 - 901805 - Coastal Biogeochemical Sensing
 - Trouble locating multiplexer for ISFET adapter. Current schedule is 11/6/2021
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Working on making release B which will include modifications to release A and clean-up
 - 902106 - Niobicon-Based AUV Docking Development
 - Located functional blocks for buoy power collection
 - Out of Office
 - September 13-17 vacation
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Recovered Daphne with all SIPPER samples. Had to troubleshoot new software involved in buoyancy depth holding
 - Designed Wire Walker XEOS beacon bracket
 - Testing new batteries for Wire Walker Cervelo. Murphy's engineering law #1 held true and the batteries were wired with reverse polarity from Manuf.
 - 901502 - Passive Acoustic Sensing
 - Processing massive click archive in search of echosounder clicks using a matched filter. Preliminary results look great
 - 901805 - Coastal Biogeochemical Sensing
 - Flying Spray 34 in support of Yui's experiments
- Chad Keczy
- Brian Kieft
 - Out of Office
 - Jun 28-30 (phoenix MST)
 - Jul 1-9 (vacation HST)
 - ~~Aug 5-6 (vacation)~~
 - Aug 1-11 (Great Lakes, Great LRAUVs EDT)
 - Aug 16-21 (Great Lakes, Great LRAUVs EDT)
 - Sep WHOI?
 - October 25-31 (PLOCAN glider school tentative GMT+1)
- Denis Klimov
- Diana LaScala-Gruenewald
 - 500055 - Video Annotation DM
 - Continuing to help with IM tape transfer
 - 901915 - Improving MBARI Data Impact
 - Background work to learn about some of the technologies involved
 - Overhead

- Weekly meeting(s)
 - Training - oceanhackweek
 - New hire meet-and-greet interviews
- Out of Office
 - Aug 3-6 - Oceanhackweek (virtual)
 1. [Hackweek project repo](#)
 - Aug. 30 & 31 - Backpacking, won't be reachable
- Eric Martin
 - 901101 - Seafloor Mapping
 - Assembling parts for sled prep next week.
 - 901206 - Coastal Profiling Float
 - Reviewing state of CPF003
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Troubleshooting cell data issues
 - Checking on Spot tracker install
 - Provided drawing for tether hookup
 - 901911 - ROVVR
 - New headset on WF for testing
 - 902100 - Telepresence on MBARI Research Vessels
 - Supporting operations for the Paull PNW cruise.
 - 368000 - DMO AUV
 - Back from 3 week expedition, we collected 7 good surveys despite technical issues and terrible weather conditions.
 - Out of Office
 - July 19-Aug16 Pacific Northwest for Dorado support.
- Thom Maughan
 - 300070 - DMO Support Ventana
 - Assembled development Wago stack. Thanks to Dale for exchanging some of the wago modules that were incorrectly purchased
 - 901805 - Coastal Biogeochemical Sensing
 - Tried Jira and Backlog, both nice bug trackers, but not a fit (yet) for the team. Accepting bugs into a shared google doc, by email and slack. The 'filing of a bug' is more important than the bug tracking system.
 - Implemented features from review on 30 Jun and have completed all the bug fixes
 - Testing, testing, testing. MpHOx, MFET and nanoFET.
 - Released pHFET-SOS v3.8.9 for lab testing on 5 Aug, planning final release Aug 19. Sixteen boards have been programmed
 - First proto of Instrument Simulator for CTD (MicroCAT), Aanderaa 5860 and Aanderaa Optode.
 - Handed off QA box and cable kit to Joseph. James is trained and can update firmware and checkout boards also.
 - 901713 - Nearshore FOCE
 - James is using the QA box to program mphox boards for nsFOCE. Providing support.
 - 902004 - Planktivore
 - Working on task list and priorities.
 - Maintenance and update of dev environment laptop
 - Out of Office
 - Vacation Aug 19
 - Vacation last week in Aug for memorial and family reunion. 25 Aug to 3 Sep.
- Mike McCann
 - 901101 - Seafloor Mapping

- Got [pytest unit tests working in VS Code](#)
 - Got GitHub Actions working – nice to see those green checkmarks on the Pull Requests!
 - Spending time learning Django REST Framework while adding tests
 - Working on getting GitHub version control to work in VS Code: [Issue 33](#)
- Overhead
 - Prepared some videos for SIGGRAPH Carto and Web3D Birds of a Feather sessions
- Rob McEwen
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Discussing next steps for Trn.
 - 708167 - WEC Dynamics and Control
 - Sent a package of code and instructions to Umesh, so that he can prepare his wave-prediction Matlab algorithm for conversion to C/Matlab API.
 - Will convert this to C and test in Matlab when he responds
 - 902101 - LRAUV Technology Development and Fleet Operations
 - The command generator fix removed the buoyancy-control overshoot for Daphne in the tank. But awaiting data from lake Erie to determine if further work is needed. That vehicle is larger and heavier.
 - Developed candidate feed-forward control, and made a few more Simulink improvements.
 - Will put this on hold until Makai/Brizo data is available
 - Out of Office
 - 26 Aug - 8 Sept
- Paul McGill
 - 300070 - DMO Support Ventana
 - Met with Jose and DJ at Ventana to plan physical layout of ground-fault isolator board
 - 701145 - Penguin Hotspots
 - Working with James M. to get 3 more WBT Mini Faraday Shields built
 - 901618 - Pelagic-Benthic Coupling
 - Took used Rover batteries to e-waste.
 - Working with Benthos to get quote for new MF modem.
 - 901700 - Acoustical Ocean Ecology
 - Tested current regulator for MARS Echosounder but it didn't work well so am building a different version
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Collecting parts for wiring of Deep Sea Data Connect
- Ed Mellinger
- Tom O'Reilly
 - 901112 - Monterey Bay Time Series
 - Prepared and held Imaging Flow Cytobot (IFCB) readiness review in preparation for upcoming IFCB integration and deployment on MBARI's power buoy.
- Craig Okuda
 - 901007 - Benthic Biology and Ecology
 - Assemble new battery system
 - Service chamber rack
 - New config and scripts
 - Prep for test deployment
 - 901803 - Carbon Wave Glider Development
 - Misc admin overhead
 - Out of Office
 - Out sick one day
 - Overhead

- Misc lab clean up
 - planning
- Doug Pargett
 - 708146 - NOPP Saildrone
 - Started cleaning and doing post deployment inspection of Koa.
 - EPDM oil comp diaphragm lost flexibility and EPDM o'rings may also have suffered. Planning to test polyurethane and some other rubber materials for oil comp diaphragm.
 - 881135 - 3G ESP Cartridge Redesign
 - Vacuum testing of V2.2 cartridges with Nadia
 - Dropped off the Stumpy ESP Instrument and equipment at Function's Palo Alto office.
 - 901205 - ESP SURF Center
 - Setting up to test the old 4km ESP style pulse suppressor in the Koa instrument.
- Ben Raanan
 - Out of Office
 - June 8-22
- Mike Risi
 - Out of Office
 - April 26-30: Ocean Imaging Cruise
 - May 3-7: Vacation
 - June 4-11: Vacation
 - June 28-July 2: Vacation
 - August 30-September 14: Ocean Imaging Cruise
 - September 14-17: Vacation
 - Vacation on alternate Fridays
- Brent Roman
 - Out of Office
 - August 23 - September 10
- Carlos Rueda
 - 708168 - DHS Y7
 - Webex session with Nathan and Adarsh to address some questions re LRAUV simulator.
 - Exchanges with WHOI team during ongoing Polaris deployment.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Worked with Brian, Joe, and others toward circumventing the "imposition" from Tmobile about flagging emails from tethysadmin@mbari.org -- new tethysdash@mbari.org address created and now used for all outbound emails from TethysDash, except those going to Iridium as we then realized Iridium will reply to the sender and TethysDash can only handle a single inbox for incoming emails. I implemented a solution for this (thanks, Ben, for the testing).
 - Some monitoring of ongoing Great Lakes vehicle deployments.
 - More documentation updates.

- TethysL is now [2.0.4](#). Great testing with Linux binary on tethyshub, also including use of the language server and the VSCode extension there.



- Overhead
 - Software Engineer candidate zoom calls
 - Attended couple of Intern presentations
- Out of Office
 - Aug 27: Drs. appt. (mid morning).
- Karen Salamy
 - 300057 - Mooring Maintenance
 - Performed a few minor updates to files this week. Otherwise, all seems to be functioning well currently.
 - 704109 - NavDORISS
 - Spending a little more time with the system to set it up the way Bill would like (visually).
 - 901101 - Seafloor Mapping
 - Spent some time looking at and familiarizing myself with Visual Studio Code for the project after speaking with Mike last week.
 - Overhead
 - Participating in the new SE hire interviewing process. I have really enjoyed meeting and speaking with the candidates over the last week.
- Brian Schlining
 - 500055 - Video Annotation DM
 - Cleaning up dive info and Importing ~4800 video files from Iron Mountain's latest video drop.
 - Improvements to [tapemigration](#) code to better handle time-code resets during dives.
 - CSIRO was running into issues with building VARS. To resolve the problem, I updated the VARS Application builds to deal with [bintray's shutdown](#).
 - 902002 - Fathomnet Detect and Classify
 - Split mono-repo into individual projects and moved code to private repos under <https://github.com/fathomnet>
 - Added developer documentation
 - Working on improvements for the September 30th release date.
 - Overhead
 - Interviewing SE candidates
 - Investigated issue with [Grib files in nctoolbox](#)

- Watching intern presentations
- Out of Office
 - Aug 30 - Sep 10 - Vacation
- Rich Schramm
 - Out of Office
 - 7/1 - 8/30 Vacation
 - 8/31 last day
- Alana Sherman
 - 901809 - Deep Sea Bioinspiration
 - Tried to help gather things for Falkor cruise
 - Overhead
 - Proposal review follow up
 - MiniROV position hiring activities
 - Out of Office
 - On vacation Wednesday