

Engineering Weekly Report 8/12/2021 - 8/19/2021

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 Microcystis 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
- Mark Chaffey
- Danelle Cline
- Duane Edgington
 - 901618 - Pelagic-Benthic Coupling
 - Met with Dan Davis. Passed over to him dive image data from 21Jun2021 for laser measure calibration work.
 - Working on renewal of collaborator agreement with Dan due Aug 22.
 - 902005 - VARS Annotation Assistance
 - AWS proposal meeting Aug 18
 - Working group session planned Aug 19.
 - Overhead
 - SE Info engineer zoom interviews
 - Group meeting Aug 16, 18
 - Out of Office
 - Tuesday Aug 24. 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
 - 701145 - Penguin Hotspots
 - Finished all the chassis assembly.
 - 901217 - Chemical Sensor Program
 - Pressure Testing the third item to failure.
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 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - 902010 - Mesopelagic LRAUV
 - Still working on weight and balance. Meansre-design on sub-assemblies that we did not want to change. Chassis, VB system, Drop weight...
- Kevin Gomes
- Andy Hamilton
- Kent Headley
 - 300057 - Mooring Maintenance

- Working with Jared to assess OASIS3 hardware inventory
 - Testing OASIS3 software tool chain
- Overhead
 - Phase 1 resource balancing
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - TRN meetings
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Preparing for Friday deployment
 - Getting spare main controller going after installed unit failed
 - 901618 - Pelagic-Benthic Coupling
 - Meetings
 - Out of Office
 - Sept 24 - Oct 1, vacation
- Brett Hobson
- Scott Jensen
 - Out of Office
 - September 13-17 vacation
- Brent Jones
 - 901009 - CANON
 - Continuing to design brackets for Wire Walker XEOS beacons.
 - 901502 - Passive Acoustic Sensing
 - Designed a match filter based on a known sperm whale click. Going to search the archive for more clicks
 - 901805 - Coastal Biogeochemical Sensing
 - Continuing to run Spray 34
 - Diagnosing problems with Spray 29 flurometer
- Chad Kechy
- Brian Kieft
 - DQ2025 - L. Erie HAB
 - Supporting Great Lakes Deployments in Lake Erie and Lake Michigan
 - DQ2029 - L Michigan
 - Supporting Great Lakes Deployments in Lake Erie and Lake Michigan
 - 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
 - 200103 - Core CTD Data - MDUC
 - QC flag requests
 - Updated and finalized sp for setting qc flags by a depth threshold
 - 500055 - Video Annotation DM
 - IMES tape transfer
 - 901915 - Improving MBARI Data Impact
 - Groundwork researching relevant technologies

- Overhead
 - Weekly meeting(s)
 - New hire interviews
- Out of Office
 - Aug. 30 & 31 - Backpacking, won't be reachable
- Eric Martin
 - Out of Office
 - July 19-Aug16 Pacific Northwest for Dorado support.
- Thom Maughan
 - 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
 - Developer experience is pretty good now in VS Code – closed [Issue 21](#)
 - Still trying to understand REST APIs – tracking development of api/v1 in [Issue 41](#)
 - 901111 - AUV Infrastructure Support
 - Watching LRAUV data flow into [stogs_lrauv_aug2021](#) from the Great Lakes
 - Overhead
 - New hire meetings
 - Out of Office
 - Vacation day: 19 August 2021
- Rob McEwen
 - 901405 - Wave-Energy Conversion for Oceanographic Applications
 - Received code from Umesh. Will convert to C.
 - 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Completed Part 107 License renewal.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Completed feedforward buoyancy control simulation.
 - Out of Office
 - 26 Aug - 8 Sept
- Paul McGill
- Ed Mellinger
- Tom O'Reilly
- Craig Okuda
 - 901007 - Benthic Biology and Ecology
 - Prep system for test deployment
 - Update documentation
 - 901803 - Carbon Wave Glider Development
 - Misc clean up
 - Out of Office
 - Vacation day
 - Overhead
 - Misc succession planning
- Doug Pargett
 - 901205 - ESP SURF Center
 - Rebuilt the FlowerPot pump housing with a polyurethane diaphragm and viton orings.
 - Installed the bulkhead valve assembly with the 3d printed frame onto FlowerPot.

- Setup the MV-3 instrument to be in the FlowerPot housing. ESP Koa will get rebuilt to use the new Function design cartridges.
- Ben Raanan
 - Out of Office
 - June 8-22
- Mike Risi
 - 901101 - Seafloor Mapping
 - Working on sled prep and checkout for PACNW cruise in September
 - 902001.99 - 4K ROV Camera Development
 - Worked on a little SPI debugging
 - 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
 - 708165 - NOAA-MERHAB
 - ESP deployed with APL's new FlowController board that regulates external pump flow rate
 1. Failed within 30 minutes due to processor oscillator drift in the cold water :-)
 2. I used a new Linux kernel API to request a non-standard baud rate of 10400 baud
 - Joy! (as long as the ESP temperature remains stable :-)
 - 901205 - ESP SURF Center
 - Updating development machines from Debian Stretch to Bullseye
 - 901913 - Demonstrating high-speed communication with a submerged AUV
 - WG Tiny is touring the Monterey Bay with the USB cell modem we intend to use for modem test
 1. Uploading data on this cell link at 700KB/s to 1.5MB/s
 - DQ2025 - L. Erie HAB
 - Last minute features added just before deployment (predictably) necessitated a couple patches to ESP Ruby while deployed on the LRAUV. Only lost 2 of sixty cartridges due to software.
 - Out of Office
 - August 25 - September 17
- Carlos Rueda
 - 708168 - DHS Y7
 - Some exchanges with WHOI (Adarsh, Ryan,...) re dockerized LRAUV simulator.
 - 901009 - CANON
 - Review of MXM code continues.
 - 901502 - Passive Acoustic Sensing
 - Put together a notebook that applies NOAA and Google's Humpback Whale song detector model on Soundscape files retrieved from AWS. Good discussion.
<https://colab.research.google.com/drive/1FgB0fxMnMPczgSjFqyOaiWvsWuYxxZzX>
 - 901513 - Targeted Sampling by AUVs
 - Tom reports that the new hotspot SMC has Python3 installed - good news.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Monitoring of vehicle deployments in the Great Lakes
 - TethysL: Only for demo purposes, set up a [gitpod](#) that allows to exercise TethysL on the lrauv-mission repo completely online (no need to install anything).

- Overhead
 - Assisted Danelle toward enabling Python3.7/Miniconda on the doc generation machine (docs). Further updates needed in a couple of specific sites.
 - Software Engineer candidates: zoom call / discussions
- Out of Office
 - Aug 18, 27: Drs. appts. (mid morning).
- Karen Salamy
- Brian Schlining
 - 500055 - Video Annotation DM
 - Completed import of most recent Iron Mountain video drop into M3/VARS
 - Addressing build issues with vars-kb and vars-query that CSIRO reported. Testing build with latest Oracle DB driver.
 - Added user docs for scripts that support the Iron Mountain video imports at <https://docs.mbari.org/internal/tapemigration/scripts/>
 - Investigating podman issues.
 - 902002 - Fathomnet Detect and Classify
 - Working on a final round of issues and testing before releasing FathomNet on September 30th.
 - Fighting
 - Overhead
 - Attended a seminar on how to integrate <https://www.testcontainers.org/> into a build.
 - Working with Kevin to shoehorn 2022's project requests hours into actual do-able hours.
 - Out of Office
 - Aug 30 - Sep 10 - Vacation
- Rich Schramm
 - Out of Office
 - 7/1 - 8/30 Vacation
 - 8/31 last day
- Alana Sherman
 - 300080 - DMO Support Mini ROV
 - Doing schematics for new benthic epod
 - 901904 - Deep-Sea Coral-Sponge Community Observatory
 - Started setting up the close-up coral camera and discovered a slew of small issues I am working through: small reprogramming of Snappy controller, program of the strobe, random Sony camera issues, reloading software after a laptop failure, etc.
 - Overhead
 - Followed up on half a dozen things as part of the phase 1 feedback.
 - Attended last supervisors meeting to review allocations and feedback