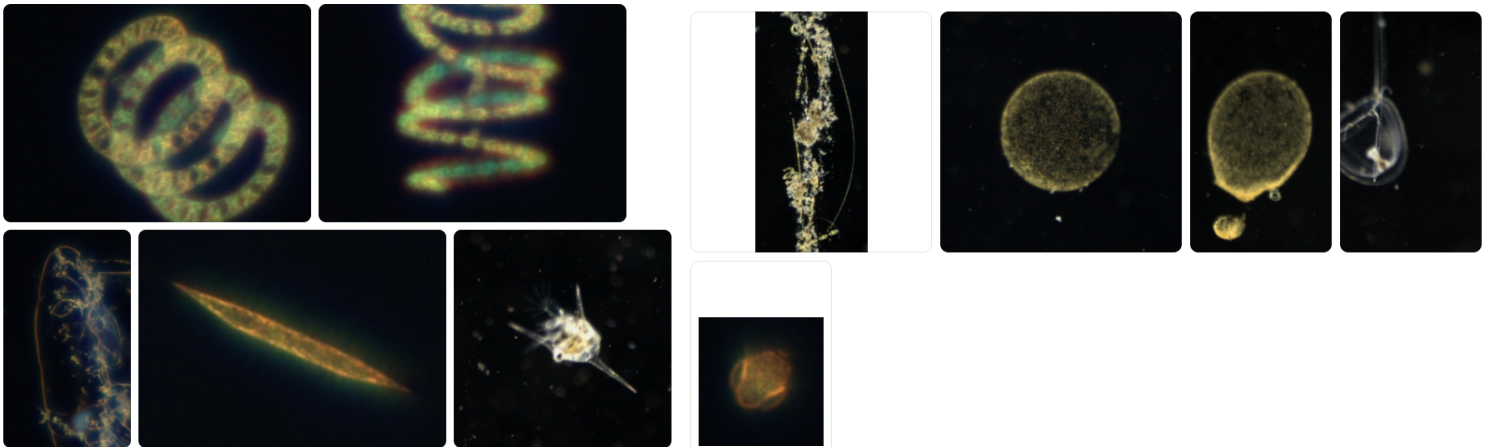
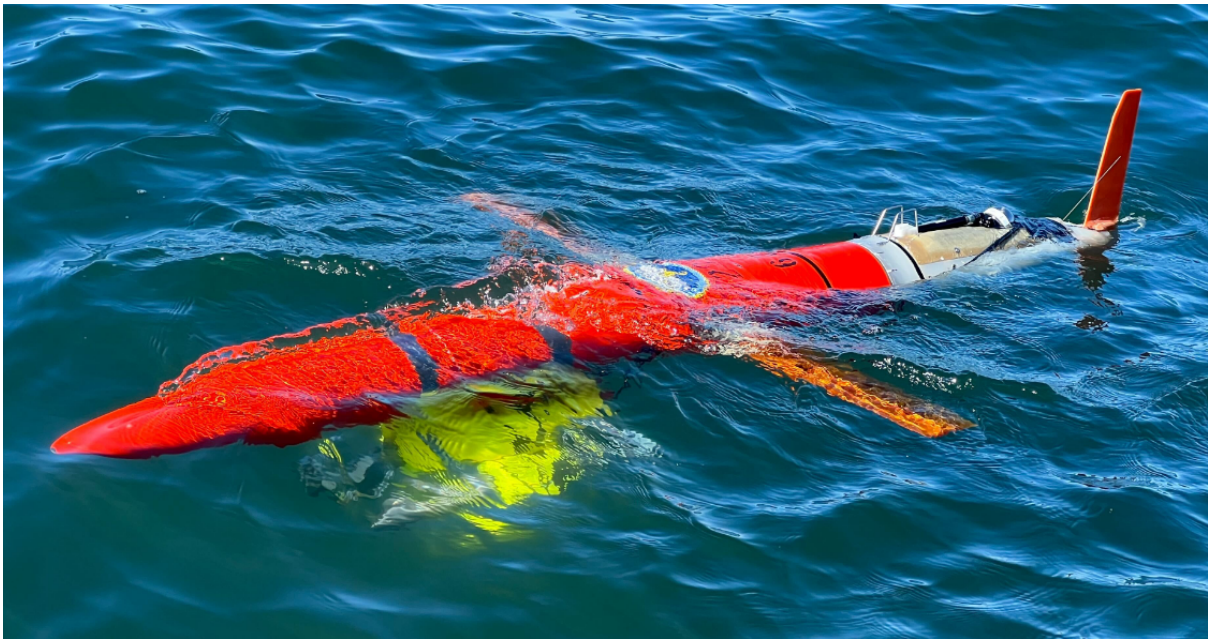


Engineering Weekly Report 5/5/2022 - 5/12/2022

Executive Council Notes

- 902004 - Planktivore In-Situ Microscope integrated on Spray Glider.
 - The Planktivore microscope instrument was deployed for its first sea trial Wed May, 11th on a Spray Glider. The first mission dove once to 50m depth and then surfaced. During the 20 minute mission with each of the two cameras running at 10 frames per second, ~24,000 images (100 GB) were processed by computer vision software running in Planktivore's compute housing. This resulted in ~171,000 'region of interest' images saved, totalling ~1.2GB. A random sample of images from the low magnification, 100 micron to 2 cm, and high magnification, 20 micron to 200 micron, microscopes are shown below.



Individual Activities

- Kevin Barnard
 - 701139 - ML Tracking
 - Started generating visualizations of May 2021 deployment data
 - 902002 - FathomNet
 - Implemented [keras-model-client](#), a Python client for running images through a remote FastAPI model server
 - Deployed FathomNet Twitter bot on Eione
 - 902005 - VARS Annotation Assistance
 - Completed BoxJelly/Cthulhu integration
- Francois Cazenave
 - Out of Office
 - One day of vacation
- Danelle Cline
 - 901502 - Soundscape Research and Education
 - Completed setup and deployment of AWS Athena queries for our [Pacific Sound opendata](#) use. Queries revealed in April, 2022, our sound data is being used in 5 countries, with our raw 256kHz recordings from 2020 being the most accessed with 1 Petabyte of downloads in April.
 - Discussions with the team about the upcoming blog for World Oceans Day on June 8th.
 - 901603 - Video TAG
 - Finished draft of abstract for Marine Imaging Workshop and initial cut at a graphic.
 - 902005 - VARS Annotation Assistance
 - Automated deployment of backend/frontend code using Ansible now in place.
 - Working on adding supporting code for batch processing to the Dockerized deployment of the video processing pipeline
 - Overhead
 - Discussion with Giancarlo about cloud best practices and emerging technologies
- Duane Edgington
 - 902005 - VARS Annotation Assistance
 - Continue VAA project work. Updates to inference script processor.
 - Overhead
 - Viewed recording of 2023 Project Proposal workshop
 - Viewing some DockerCon 2022 presentations
- Jon Erickson

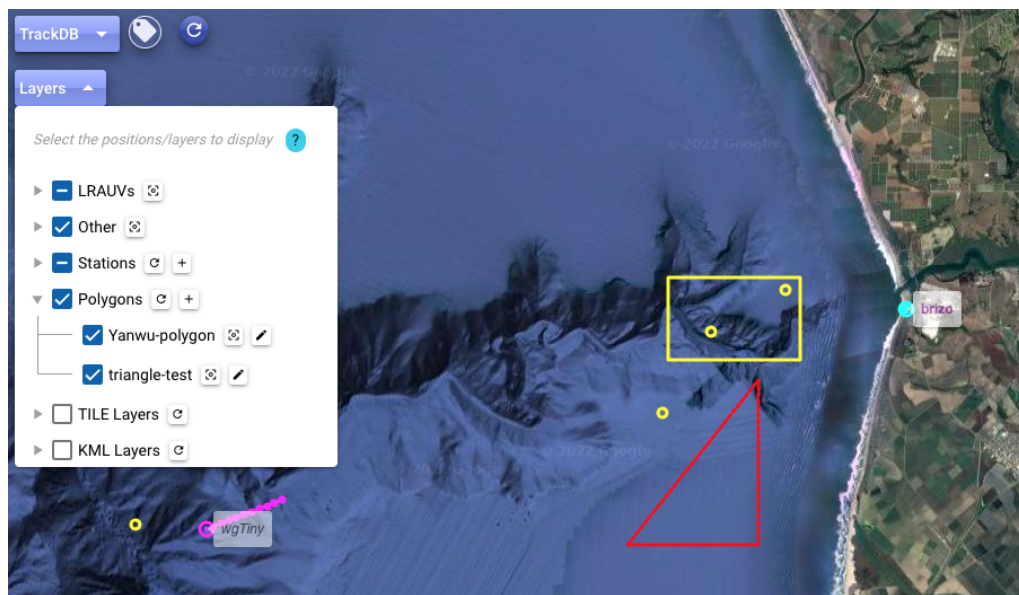
Still working with and advising Quest Institute. Mostly about their MARS experiment. All day yesterday in the test tank for Thursdays deployment.
- Ben Erwin
 - Out of Office
 - Vacation 2/12-2/20
- Kevin Gomes
 - 300070 - DMO Support - Ventana
 - A little help with the Focal problems they were having with Ventana
 - Starting to scope work for an upgrade for the ROV DiveLog app for both ventana and Ricketts.
 - 901009 - CANON
 - ODSS outage that was related to Atlas share access after OS patch. Found workaround, but still no understanding of why what was working before the patch stopped working after. Was related to AD permissions on the share through NFS/Podman.

- 901915 - Improving the Impact of MBARI's Data
 - Worked through a mapping exercise to come up with a first crack at a 'data' template for the new website.
- 902012 - Telepresence on MBARI Research Vessels
 - More changes to the deployed web application
- 902202 - MBARI Cloud Integration Exploration
 - Had re-sync meeting with AWS representative to talk about steps moving forward and roadmap planning. Set up standing monthly meeting.
 - Working with AWS to understand Control Tower and the correct account structure for MBARI. Will be setting it up so that each project that wants cloud resources will have its own account to easier handle billing and guardrail management.
- Overhead
 - Worked on updates to Challenge #3 for strategic roadmap and met with larger group to discuss. Target is to have finished up by next Tuesday AM.
- Out of Office
 - 6/20: Vacation
 - 8/1-8/5: Vacation
 - 10/3-10/6: Vacation
- Andy Hamilton
- Kent Headley
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - Finished initial round of post-cruise updates to ROV TRN middleware
 - Produced some test data for validation
 - Added new logging/playback features to TRN core (pending review)
 - 901101 - Seafloor Mapping
 - Working with Dave to plan ROV TRN activities for June Ocean Imaging cruise
 - Planning TRN for Sentry cruise
 - 902204 - Scalable Marine Robotics Foundations
 - Scoping eval of ZCM interprocess communication middleware
 - Scoping driver development for
 - Overhead
 - SRSC committee: working on text board meeting material
 - DEI committee: worked with group on recruitment specialist job description
 - EE Hiring committee: job description review
 - Proposals (getting started)
 - Developing 2023 budget
 - Project resourcing/staffing
 - Carbon Waveglider transfer
 - Misc Admin
 - Out of Office
 -
- Rich Henthorn
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - TRN for ROV and LRAUV
 - 800139 - EyeRIS (Remote Imaging System)
 - EyeRIS-LRAUV Interface ramping back up
 - Serial comms to camera controller
 - 901101 - Seafloor Mapping
 - Proposal items
 - 901405 - Wave-Energy Conversion for Oceanographic Applications

- Monitoring buoy system
 - Working around spotty comms to heave cone
- 901618 - Pelagic-Benthic Coupling and the Carbon Cycle
 - Proposal items
 - Weekly meeting
- 902101 - LRAUV Technology Development and Fleet Operations
 - Co-Navigation project
- Out of Office
 - May 16 - next Monday, WFH
 - July 4 - 18, WFH and vacation time, email, phone, zoom OK
 - Aug 30 - Sep 16, vacation in Europe, email
 - Sep 21 - 30, Sta.M Cruise (final scheduled cruise of the Western Flyer)
- Brett Hobson
- Scott Jensen
 - 708146 - Saildrone
 - Supported troubles with instrument slated for next deployment.
 - 901205 - SURF Center
 - Work on Sample prototype continues. Moving axis with candidate stepper drive. Assembled carousel encoder and accuracy seems very reasonable.
 - Preparing drawings for third terrestrial housing.
 - 902106 - Niobicon-Based AUV Docking Development
 - Test of Blue robotics tether comms was inconclusive when applied to dock mock up. Communications were very capable but it was not clear that the actual communications were happening across the dock. EMI shields are being fabricated to see if the actual path can be controlled.
 - DQ2113 - Tidal Turbine
 - Pulling together system to be tested at APL. Some of which is working out who has what equipment and how will they connect.
- Brent Jones
 - 902004 - Planktivore
 - Installed planktivore on spray and successfully ballasted in test tank
 - Deployed Spray+Planktivore offshore and successfully completed 1 dive to 40 m
 - Digesting engineering data from first real dive
- Chad Keczy
- Brian Kieft
 - Out of Office
 - 05/15 - 06/04 (EcoHAB PDT)
 - 07/02 - 07/09 (HST - vacation)
 - 07/13 - 07/22 (AKDT)
 - 08/01 - 09/03 (EDT)
 - 09/12 - 09/28 (GMT+2 - vacation)
- Denis Klimov
- Diana LaScala-Gruenewald
- Eric Martin
- Thom Maughan
 - 901805 - Coastal Biogeochemical Sensing Program
 - Worked with Irene on nanoFET, will resume after wrapping up another project.
 - 902004 - Planktivore
 - Roman M has done a great job fabricating the Planktivore+Spray service cart spec'd by Brent
 - Tank testing the Spray comm's roll, turtle roll

- Plankton imaging and lighting adjustments in a bucket of seawater from the shore.
 - Pre-deployment testing and checklist for both Spray
 - Deployment on Wednesday, 40m depth envelope resulted in 54m max depth due to overshoot. We aborted the 2nd yoyo as we ended up with too little depth margin to the bottom and the wind was starting. Thanks to the Plantivore team for the great effort pulling it together. The plankton images are wonderful.
 - We are working towards a Monday May 16th mission with greater depth and longer range along the C1 to M1 line.
- Out of Office
 - TBD trip to Montana.
 - May 27 - 31 Camping
 - Jul 6 - 19 Camping, Bear Lake Monster Swim
- Mike McCann
 - 901221 - Midwater Time Series
 - Testing processing through to copying resampled netCDF files to the AUVCTD share
 - Met with Rob to discuss validating the i2map data processing products
 - Overhead
 - Found the cause of excessive disk usage on emdb, will share the story at next group meeting
 - Met with Lonny & Krystle to go over ROV nav editing workflow visualization
 - Reloading emdb following fixes for excessive disk usage
- Rob McEwen
 - Out of Office
 - Vacation April 29 and May 11-13.
- Paul McGill
 - Out of Office
 - Will be on vacation April 21st thru May 12th.
- Tom O'Reilly
- Craig Okuda
- Doug Pargett
 - 708146 - Saildrone
 - The MV3 ESP is repaired, and has the external valve and new bottle holder. We're ready... if only Saildrone was ready.
- Ben Raanan
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Prep for EcoHAB
 - 902102 - Multi-LRAUV Simulation Environment
 - Integrating ROMs data from Santa Barbara to test EcoHAB scenarios ahead of the deployment
 - Out of Office
 -
- Mike Risi
 - Out of Office
 - May 5 - vacation
 - May 9-10 - vacation
 - June 2-8 - OI cruise
 - June 10-14 - vacation
 - June 20-22 - vacation
 - August 8-9 - out of office
- Paul Roberts
 - Out of Office

- 4/2 - 4/9 (spring break san diego)
- Brent Roman
 - 706005 - eDNA Grass Carp Sandusky
 - Worked with Kevan to add ability to change sampling schedule while mission runs.
 - 708143 - ECOHAB - Andy Allen
 - Worked with team to ready MV1
 - 708146 - Saildrone
 - Just got stable satcomms to the “brain box” left on Surveyor yesterday.
 - 708165 - NOAA-MERHAB
 - ESPeddie still deployed off La Push, WA. Working perfectly.
 - 901205 - SURF Center
 - Had to revert to older ESP gateway firmware after discovering weird crash bug in version that includes ability to be reflashed in place. Bummer.
 - 901913 - WetWiFi
 - Met with Brett, Chris Wahl and Brian Kieft to schedule next test deployment for mid-June
 - Wrote 1st draft of abstract for project extension.
 - Out of Office
 - Thanked and Excuses from Jury Duty last Friday afternoon.
- Carlos Rueda
 - 901502 - Soundscape Research and Education
 - Very promising experimentation applying the BLED technique for sperm whale click detections, resulting in the determination of a good set of parameter values that we now plan on applying on complete days of data. Presented the results in our group meeting and updated the [notes](#).
 - 902005 - VARS Annotation Assistance
 - Group meeting.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Dash system is now [4.10.1](#) with enhancements related with the definition of *stations*, and a new similar handling for *polygons*, all of these (persisted in the backend) editable by operators using the DashUI and with GeoJSON format.



- Overhead
 - More technology exploration.
 - Contacted again by [Claytip person](#) toward discussing REST/GraphQL technologies.
- Out of Office
 - May 16-20: vacation
- Karen Salamy

- Out of Office
 -
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Iron Mountain video ingest
 - Modified code that archives ancillary metadata to improve speed. Rerunning on all staged Iron Mountain LTOs
 - 902002 - FathomNet
 - Reviewed 2023 abstract for continuing FathomNet
 - Deployed Ocean Vision AI game to <http://fathomnet.org/ocean-one-timer-0.1.2/#/>
 - 902005 - VARS Annotation Assistance
 - Working on analysis comparing ML annotations to human annotations
 - Analysis notebooks at <https://github.com/mbari-org/vaa-track-analysis>
 - Testing boxjelly with V4244 ML output to cleanup data for analysis.
 - Updated [Cthulhu](#) to run on M1 macs for testing with box jelly
 - Working on abstract for [2022 Marine Imaging Workshop](#)
 - Overhead
 - Working on abstracts
 - Out of Office
 - May 5th. Off the grid.
- Alana Sherman
 - Overhead
 - Working on Abstracts (With Paul R and Colleen)
 - Working on Strategic Roadmap
 - Gave a presentation and was a panelist for National Academy of Science Workshop on Technology for Antarctic studies
 - Out of Office
 - Out for sick kids Monday and Tuesday