

Engineering Weekly Report 1/12/2023 - 1/19/2023

Executive Council Notes

-

Individual Activities

- Michael Anderson
- Kevin Barnard
 - 902002 - FathomNet
 - Worked on packaging vars-localize for Smithsonian volunteers
 - 902204 - Scalable Robotics
 - Calibrated Mola 4K camera using new calibration library
 - Several meetings for 2023 planning
 - Set up new repository for LCM-related tooling
 - DQ2209 - Ocean AI 2
 - Put together example image datasets for game developers
 - Overhead
 - Finished up ROV CTD transition to Karen
 - Provided performance feedback
 - Out of Office
 - COVID: 1/3-1/20
- Francois Cazenave
 - 901405 - PowerBuoy Development
 - Making plans for 2023.
 - Organizing project hardware
 - 902106 - Niobicon-Based AUV Docking Development
 - Organizing project hardware and equipment
 - Supervising fabrication of buoy housings
 - Planning the year
 - 902306 - SINKER
 - Attended meeting
 - Out of Office
 - Was out sick for 2 days
- Danelle Cline
 - 500055 - VARS, M3/RS, DSG
 - The AWS video processing workflow is ready for integration potentially in Q2, pending video lab efforts to understand how to best work with the ML output. This scalable processing workflow has been optimized for cost and can process approximately 70-90 hours of video per day for \$1.50 per recorded video hour. Results are stored in the M3_TRACKS database. A [web dashboard](#) provides an overview.
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - Added login to deepsea-ai dashboard and an approval flag to support some bulk editing of track training data through boxjelly
 - SecretsManager testing
 - 901502 - Passive Acoustic Sensing

- AWS 2023 streaming server windows updates
- Wrote a colab notebook to demonstrate how to build and run the Earth Species AVES model for collaborator, Kano Aiu
- Investigating multiple spectrogram representations for Blue Whale classification models
- 901902 - Unoccupied Aerial Vehicles for Science, Operations, and Outreach
 - Ran a few different models in the [HuggingFace](#) repository on aerial images using sliced predictions with the [sahi](#) library that Duane Edgington suggested (thanks Duane!). The intention was to see if these would work to flag class agnostic detections for later review. Some of the detections e.g. bird, boat were accurate, but others were not; this may work fine to flagging visually interesting objects for review which is the requirement.



- Overhead
 - 2023 planning and performance review materials and feedback
- Out of Office
 - Few sick days
 - Tentative out of office vacation Jan 25, 26, 27
- Duane Edgington
 - 500055 - VARS, M3/RS, DSG
 - Met with Timothy Ryter, AWS Storage Specialist, along with Emmett and Ted, regarding EFS storage volume and SageMaker Studio. Timothy provided guidance on how to examine an EFS volume, and how to potentially reduce lifecycle costs. Timothy and Ted are going to check with the SageMaker Studio team to ensure Timothy's advice is sound, and then inform me of that team's guidance.
 - 901009 - CANON
 - Kickoff meeting Thursday Jan 19.
 - 901103 - Biodiversity and Biooptics of Zooplankton
 - We are researching and implementing [AWS Secrets Manager solution](#) for passing keys to deepsea-ai database
 - 901502 - Passive Acoustic Sensing
 - Team meeting Wednesday Jan 18.
 - Overhead
 - Performance feedback
- Jon Erickson
- Kevin Gomes
 - 200105 - Core Navigation Data - MDUC
 - Updated diagrams and created simplified diagram that Mike sent to the shipyard to make sure we capture physical wiring that is required during construction
 - Had back-and-forth with serial splitter vendor and received price list and waiting to validate which serial splitters we are actually getting with the boat before purchasing
 - Meeting to discuss end of sprint 1 and start of sprint 2
 - Doing archeological work to remember how navproc/logr works to prepare for next sprint

- 300057 - Mooring Maintenance
 - A small bit of maintenance on monitoring scripts
 - New-ssds machine crashed late last week, but no cause found
- 901009 - CANON
 - Restarted services for AMQP consumption
 - Troubleshooting missing map tiles from ESRI basemap and it appears they have deprecated the basemap and I need to update the web application to use new vector based map.
- 901915 - Improving MBARI Data Impact
 - Discussion with Monique about possibly using LRAUV and Dorado as test case for larger combined data set to test different storage mechanisms
- Overhead
 - Performance review preparation
 - Some cleanup and restructuring of Weekly Reports as the year kicks off.
- Andy Hamilton
- Kent Headley
 - 902204 - Scalable Robotics
 - kickoff meeting
 - Overhead
 - review prep, meetings
 - hiring committee
 - Out of Office
 - medical (1/25 afternoon)
- Rich Henthorn
 - 300078 - DMO Divisional Support - AUV
 - Test build and run of code in repo
 - 600034 - Precision Control Technologies for ROVs and AUVs
 - TRN upgrades
 - 901405 - PowerBuoy Development
 - Prep for buoy sim TF controller implementation
 - 901618 - Pelagic-Benthic Coupling
 - Meeting
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Meeting
 - Planning Eng tasks (docs, reviews, etc)
 - Overhead
 - Review prep
 - Out of Office
 - Jan 23 - 27: WFH, vacation, all-access, PDT
 - Feb 13 - 17: WFH, vacation, all-access, PDT
- Brett Hobson
- Scott Jensen
 - 708178 - Marine E Development NAV
 - Looks like a decent COTS part is a reality
 - 901405 - PowerBuoy Development
 - Development continuing with a parallel COTS solution is being investigated.
 - 902106 - Niobicon-Based AUV Docking Development
 - Oversight of electrical build of Dock
 - DQ2210 - READI-net
 - Continued progress with the final assembly of the 47mm prototype.
 - Overhead

- E-Tech hiring committee
 - Out of Office
 - 6 - 10 January, 2023 (got to get used to writing that)
- Brent Jones
 - 901112 - Monterey Bay Time Series
 - Modifying WaveGlider tracking algorithm
 - Testing WG tracking onshore
 - 901805 - Coastal Biogeochemical Sensing Program
 - Ground station testing on Pico integration into Spray
- Chad Keczy
- Brian Kieft
 - Out of Office
 - 01/17-01/20 (MST/CST)
 - 01/31-02/03 (MST)
- Denis Klimov
- Eric Martin
 - 901206 - Coastal Profiling Float
 - Tank Testing at the end of the week.
 - 902012 - Telepresence
 - Paper submitted to CSCW (ACM), collaboration with UCSC, Leila Takayama, Kakani Katija, George Matsumoto and David Caress.
 - 902204 - Scalable Robotics
 - Setting up project boards in Notion
 - RRE Hiring
 - Mola Camera Concept
 - Overhead
 - SEE Committee
 - Out of Office
 - Last Tues/Wednesday
- Thom Maughan
 - Out of Office
 - Jan 4 - 8 CES
- Mike McCann
 - Out of Office
 - Jan 18-20 Vacation
- Rob McEwen
- Paul McGill
 - 300070 - DMO Divisional Support - Ventana
 - Made progress on ground fault channel isolator with Jose.
 - 901618 - Pelagic-Benthic Coupling
 - Working on paper ideas for ASLO Spain in June.
 - Replaced broken parts on Smith Macro Camera laser.
 - 902305 - Event Detection using the Sedimentation Event Sensor
 - Attended project kickoff meeting.
 - Working out wiring for new sediment trap motor and repairing wiring of Hall switch.
 - Reprocessing old deployment data to see trends in sedimentation rates and to review quality of data.
 - 902306 - SINKER
 - Attended project kickoff meeting.
- Tom O'Reilly

- 901101 - Seafloor Mapping
 - Working with Caress to automate/simplify MB-System build process (using cmake) on a variety of systems including MacOS, Linux, and others
- Overhead
 - Contingency
 - Submitted IEEE Oceans 2023 abstract: “Ocean-based carbon dioxide removal: Role of standards and best practices”, coauthored by colleagues on IEEE OES standards committee. This paper will describe how sensor networks that monitor CO2 removal can use practices and standards developed and used by previous successful efforts, especially Argo.
- Mike Risi
 - 200105 - Core Navigation Data - MDUC
 - sprint review of single LCM type
 - starting sprint for new Doc Ricketts UDP interface
 - 701147 - MARS O&M IV
 - reviewed code for MARS MVC serial monitor
 - 902204 - Scalable Robotics
 - lab kickoff meeting
 - RRE hiring committee meeting
 - started sprints for LCM types, mola control and logging all data
 - Overhead
 - performance review
 - Out of Office
 - Out of office on Fridays
- Paul Roberts
 - 901809 - Deep Sea Bioinspiration
 - EyeRIS calibration and validation in test tank
 - Testing multicamera interface can on MiniROV
 - 902001 - Ventata 4k camera
 - Sourcing parts for rack box electronics
 - Sending bulkheads to DSPL for integration into second housing
 - Starting fabrication of modified chassis parts for new corrector optics
 - 902204 - Scalable Robotics
 - Sprint 0 : Stereo cameras for Mola and planning for Mini ROV tank tests in March
 - 902306 - SINKER
 - Kickoff meeting, scheduling and hardware procurement
- Brent Roman
 - 708165 - MERHAB19:ESP
 - Supporting NWFS effort to field a 2G ESP on a Navy Base
 - 901205 - ESP SURF Center
 - Characterized ESP 3G stepper motors’ power use
 - USB modem sent to GLERL fixed their comms issue
 - Original issue still a mystery. Recommending they ship problem modem to us.
 - DQ2210 - READI-net
 - Continuing exchange with consulting firm regarding compute hardware choices
 - Out of Office
 - March 8-15 visiting my dad in Sarasota, FL
- Carlos Rueda
 - Out of Office
 - January 2–12: vacation.

- Karen Salamy
 - 200103 - Core CTD Data - MDUC
 - Met with Kevin B. via ZOOM to discuss ROV CTD QC work upload.
 - Performed ROV CTD QC updates to the EXPD based upon Ed Peltzers email from Jan 4. All CTD changes were successful within the EXPD. I had to perform a few of them twice to adjust comments and email dates.... :-). All ROV CTD QC for 2022 should now be completed.
 - 300057 - Mooring Maintenance
 - Checking in on data downloads and to monitor issues with the ADCP now currently working on the mooring.
 - 902101 - LRAUV Technology Development and Fleet Operations
 - Began building the new updated LRAUV Dash for testing.
 - Overhead
 - Provided Kevin G. with peer review comments.
 - Cleared through a ton of older emails from late last year.
 - Storms and flooding inhibited my coming into the office (onsite) last week. I have resumed being onsite this week (3days/week - M, T, and Th).
 - Out of Office
 - Will be returning into the office 3 days/week starting next week (storms and floods allowing).
 - Feb 9-17: vacation/father's estate finalizations.
- Brian Schlining
 - 500055 - VARS, M3/RS, DSG
 - Released [VARS Annotation 1.4.3](#). This includes support for localizations of annotations directly on video using [Sharktopoda 2](#)
 - This release surfaced some issues with Sharktopoda 2. Investigating those.
 - Sharktpoda 2 requires Mac Ventura. With every new release of macOS, Apple changes the signing requirements for applications. If these requirements aren't met, Apple makes it extremely difficult for users to start the apps. Ventura continues this tradition. Brian is working with IS to get the signing and notarizing certificates needed to meet Apple's security requirements for both Sharktopoda and VARS Annotation.
 - 902002 - FathomNet
 - Meeting w/ Kerry Howell to discuss adding an API to [Smarter-id](#) to allow FathomNet to use it as a naming service.
 - Out of Office
 - Feb 27 - Mar 3 - Vacation (Backpacking Haleakala so not internet)
- Alana Sherman
 - 902208 - MiniROV Support
 - Working with Dale to get the Fulmar topsite set up running. This involves rewiring the entire topside electronics
 - I am also taking this opportunity to label and document as I go
 -
 - Out of Office
 - On vacation Jan 1-9